

INTEREST 2023

INTERNATIONAL CONFERENCE ON HIV TREATMENT, PATHOGENESIS, AND PREVENTION RESEARCH IN RESOURCE-LIMITED SETTINGS



**MAPUTO,
MOZAMBIQUE**
9-12 MAY 2023



ABSTRACT BOOK



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**International Conference on HIV
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**Abstracts
Oral Presentations**

1

High Prevalence of HIV Drug Resistance Below the WHO Threshold of 1000 Copies/ML Among Adolescents Receiving Antiretroviral Treatment in Cameroon

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Background: HIV drug resistance (HIVDR) continues to be a major concern in Sub-Saharan Africa, with emerging data showing resistance below the WHO-recommended guidelines of 1000 copies/ml. We characterized treatment failure and resistance above and below the overmentioned threshold in adolescents receiving antiretroviral treatment (ART).

Material and Methods: A prospective cross-sectional assessment was carried out at the Laquintinie hospital of Douala, where adolescents (10-19 years) receiving treatment for at least 6 months were enrolled between February and June 2021. Socio-demographic and clinical data were collected and a viral load test (VL) was performed using the ABBOTT Platform. Genotypic resistance testing (GRT) was attempted for participants at low-level viremia (LLV, detectable VL between 200-999 copies/ml) and high-level viremia (HLV, VL \geq 1000 copies/ml) using an in-house method. We assessed the effect of HIVDR mutations on the predicted susceptibility to the WHO-recommended tenofovir-lamivudine-dolutegravir (TLD) combination using a genotypic susceptibility score (GSS).

Results: Of 280 participants (median age 16, median duration on ART 9.8 years, 52.5% on efavirenz-based treatment), 108 (38.7%) had detectable viremia, of whom 59 (21%) had HLV and 32 (11.5%) had LLV. Among the 51/59 (86.4%) sequences with HLV obtained, 78.4% (14.3% globally) had resistance to at least one drug class (54.9% dual-class and 17.6% triple-class resistance). In 25/32 (78.1%) LLV sequences, 88.0% (7.9% globally) harboured resistance (44.0% dual-class and 24.0% triple-class resistance). One participant with LLV and three with HLV had integrase strand transfer inhibitors (INSTIs) major mutations (G140GR, R263RK, S147A), along with several INSTI-accessory mutations found in other participants. The overall INSTI resistance was therefore 20.0% and 23.5%, respectively for participants with LLV and HLV. Cumulative GSS predicted a fully active TLD combination (GSS=3) for 40.8% (31/76) of participants who underwent GRT. Functional monotherapy was predicted (GSS<2) in 39.5% (30/71) of them, with higher proportions among participants with LLV (52.0% vs 33.3% with HLV).

Conclusion: We found alarming HIVDR levels below the WHO-recommended threshold, impacting new therapeutic combinations. While continuing to monitor HIVDR in patients with HLV, special attention should be given to those with LLV to reduce the accumulation of HIVDR and ensure the long-term success of new ART regimens.

2

HIV Sero-Conversions Among Adolescent Girl and Young Female Dapivirine Vaginal Ring (DPV-R) Users: Early Learnings From a Demonstration Project in Zimbabwe

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Background: Zimbabwe demonstrates impressive progress towards the UNAIDS 95-95-95 targets with estimated 86.8%, 97.0%, and 90.3% achievement among adults living with HIV. The country scaled-up implementation of biomedical HIV prevention including oral PrEP as part of prioritized combination prevention effort to be used by people at risk of HIV infection. To expand consumer choice for PrEP, the Ministry of Health and Child Care, PSI, and Population Solutions for Health are currently implementing a DPV-R demonstration project to determine uptake and feasibility of DPV-R among adolescent girls and young women (AGYW) including female sex workers and young women selling sex. The demonstration assessed sero-conversion as a primary outcome.

Material and Methods: A two-arm prospective cohort design recruited AGYW 18-35 in 8 districts. AGYW eligible for PrEP chose between oral PrEP (arm 1) and DPV-R (arm 2), targeting 1,100 DPV-R participants. DPV-R participants are followed up monthly for six months with HIV testing at every visit. By December 2022, 1,127 DPV-R users were enrolled with 1,032 followed after 1-month, 908 after 2-months, 735 after 3-months, 465 after 4-months, 255 after 5-months and 80 after 6-months. The remaining follow-ups among newer clients will complete by June 2023.

Results: 8/1,032 (0.78%) DPV-R users HIV sero-converted compared to 1/338 (0.3%) oral PrEP users. Analysed by visit, 6/1,032 (0.6%) tested HIV positive at 1-month, 2/908 (0.2%) at 2-months, 2/735 (0.3%) at 3-months, and none at 4-6 months. By age, 15-19 (1.2%) (0.2-3.3: 95% CIs) and 20-24

(0.6%) (0.2-1.5: 95% CIs) tested HIV positive. The sero-conversion results are comparable to similar studies (IPM 032/DREAM interim results (1.8%) and MTN-025 (1.9%)). 3% participants opted out due to side effects, relocation or partner discouragement.

Conclusion: HIV Sero-conversions among DPV-R users were comparable to other PrEP options. This and high acceptability and continuation (demonstrated in this same demonstration project) with DPV-R compared to oral PrEP indicates value in scaling up DPV-R.

3

Cervical Cancer Screening Uptake Among Female Sex Workers Living With HIV-a Crosssectional Survey in Nairobi, Kenya

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Background: Female sex workers (FSW) living with HIV have a high risk of acquiring cervical cancer due to nature of work and compromised immunity especially when one is not adhering to ART treatment and protected sex. Majority of hospitals within Nairobi County offer cervical cancer screening services. However, according to an unpublished report, most FSW do not seek cervical cancer screening. This study investigated factors influencing cervix cancer screening uptake among FSW living with HIV in Nairobi Kenya.

Material and Methods: This was a descriptive cross-sectional study with a quantitative data collection strategy. Structured questionnaires were administered among FSW living within Nairobi environs seeking HIV services in Sex Workers Outreach Program.

Results: 150 FSW were interviewed. Age: 39.3% (n=59) were 18-25 years, 20.6% (n=31) 25-30 years, 18% (n=27) 30-35 years while 11.3% (n=17) were above the age of 40 years. On cancer screening knowledge, 56.7% (n=85) said it's a procedure to examine cervix for any disease, only 20.6% (n=31) said identifying abnormal cells in the cervix. Health facility related challenges 36.7% (n=55) said the service is not offered as a routine, 50.6% (n=76) said the facility reported lack of reagents while 49.1% (n=74) no health worker to screen. On the waiting time, 57.3% (n=86) said 2-3 hours, 85.3% (n=128) considered this to be long waiting distance to the facility offering services, 62.6% (n=94) said 5Kms or more. On being comfortable to be screened for cervical cancer, 62% (n=93) were not comfortable. 36.7% (n=55) feared the outcome, 66.7% (n=100) feared pain of the procedure while 53.3% (n=80) said cervical cancer was a terminal illness and

therefore no need to be screened. On the cultural practices and beliefs 84% (n=126) said they fear stigma from the community, while 16.0% (n=24) said cervical cancer does not exist. Predictor variables and uptake of cervical cancer screening, the age of the respondents and level of education were found to be significant with a p value of 0.001.

Conclusion: Young FSW should be targeted with cancer screening messages. Long waiting time, long distances, less working hours, lack of reagents, unqualified personnel should be addressed by policy makers.

4

Community Index Testing Among Children of Female Sex Workers and of Other Vulnerable Groups Is an Effective Approach for Reaching Children Under 5: Results from Routine Service Data Analysis in Tanzania

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Background: Tanzania has made significant progress in recent years in addressing the HIV epidemic, particularly among adults. However, access to pediatric HIV care remains a challenge. The government and international organizations have been working to increase the number of health facilities providing pediatric HIV services, improve the availability of pediatric ART formulations, and adopt community-based approaches to reach children and families affected by HIV. Meeting Targets and Maintaining Epidemic Control (EpiC) is a USAID-funded project implemented in 11 regions to deliver comprehensive HIV services for key and vulnerable populations in community settings, including children of female sex workers (cFSWs) younger than 15 years old.

Material and Methods: Routine data from cFSWs and other vulnerable groups tested via community index testing services were compared to children tested via index testing in health facilities within 33 EpiC-supported districts. We analyzed case-finding rates among children tested for HIV in the selected districts between October 2021 and December 2022 to determine the HIV case-finding rates by age groups among children reached through community index testing services versus facility index. A chi-square test was used to check the strength of the observed differences in case-finding rates by testing location and age group.

Results: A total of 1,766 children were tested through community index testing, with 176 (10%) testing HIV positive. The positivity rate was highest among children ages <5 years at 14% (76/560), followed by 10–14 years at 10% (50/490), and 5–9 years at 7% (50/716). For facility index testing, 32,183 children were tested, with 1,092 (3%) testing HIV positive. The positivity rate was 4% (436/10,413) among children <5 years and 3% among children 5–9 years (318/12,067) and 10–14 years (338/9,703). The likelihood of identifying an HIV-positive child through community index testing was 3.15 times that of facility index testing (95% CI: 2.66–3.74).

Conclusion: The community index-tailored approach is crucial for reaching cFSWs and other vulnerable populations, especially children under 5. Stigma and discrimination against FSWs can limit access to health services for them and their children. Investing in community-based index testing services is effective in identifying children living with HIV.

5

Cytokine Profile and Association with Disease Severity in Maputo, Mozambique

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Background: Cytokines have been studied as biomarkers of SARS-CoV-2 evolution after being associated with disease clinical condition worsening. So far, little information has been published regarding the immune profile of African individuals. This study aims to evaluate the relationship between the serum cytokines levels, clinical presentation and classic markers of COVID-19 severity in Mozambique.

Material and Methods: In a cross-sectional observational study in Maputo, serum samples from SARS-CoV-2 RT-PCR negative (n=22) and positive (n=63) individuals, collected between February 2021 to January 2022, were used for measurement of cytokines, including pro and anti-inflammatory (INF- γ TNF- α , IL-1 β , IL-2, IL-4, IL5, IL-6, IL-7, IL-8, IL-15, IL-17, IL-18, IL-2 IL-10 and TGF- β) by Luminex assay as mean fluorescence intensity (MFI). SARS-CoV-2 positive individuals were categorized as asymptomatic (n=21), mild (n=16), moderate (n=5) and severe (n=22) groups, and negative individuals were classified as controls. Cycle threshold value (Ct), C reactive protein (CRP) and red cell distribution width (RDW-CV) were used as units of estimation of viral infectivity, acute inflammation, and hematopoietic distress, respectively. Association and correlation between variables were assessed using Kruskal Wallis and Spearman Rank, tests respectively.

Results: Individuals from the severe group showed higher MFI for IL-7, IL10, IL-15 and IL-18 when compared to those with mild symptoms (p=0.033, p=0.039, p<0.0001 and p=0.001). Furthermore, the

levels of IL-6, TNF- α and INF- γ MFI, in patients with severe symptoms, were found to be 10 times lower when compared to the controls (p=0.0203, p=0.0002 and p=0.0005). No significant variations, in MFI levels of IL-10 and TGF- β were found between individuals from control and severe groups. However, TGF- β was seven times higher in severe group compared to the asymptomatic (p=0.044). TGF- β and IL-8 were negatively correlated to Ct values (r= 0.307; p=0.01) and CRP (r=-0.253; p=0.027), while IL-7 and IL-18 were positively correlated to CRP (r= 0.272; p=0.018 and r= 0.341; p=0.003, respectively) and IL-15 were positively correlated to RDW-CV (r= 0.330; p=0.03).

Conclusion: In our settings, IL-7, IL-15, IL-18, and TGF- β were found to be associated with disease evolution to severe cases, although weakly, they were associated with known biomarkers of prognosis of COVID-19 evolution.

6

Improving Tuberculosis Case Identification Through Intensive Community Door-To-Door TB Screening in Teso Region, North Eastern Uganda

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Background: Globally, Uganda is one of the 30 high-burden tuberculosis (TB) countries. Following the outbreak of the COVID-19 pandemic, restrictions on the movement made it impossible for health workers and clients to go to health facilities, and stigma associated with similarities in symptoms related to TB and COVID-19 led to reduced health-seeking behavior among clients resulting in 54% decline in TB cases notification (TB CN). To revamp the TB CN, The Aids Support Organization (TASO) Soroti region project through the support of the Center for Disease Control and Prevention (CDC) engaged trained community health workers (CHWs) to conduct community door-to-door TB screening in Jan-March 2022(Q2) and July-September 2022(Q4) in their respective villages in the 10 districts of North Eastern Uganda.

Material and Methods: TASO trained community healthcare workers (CHWs) from 109 TB diagnostic and treatment units in TB education and screening and provided information and education materials. For four days CHWs from villages conducted door-to-door TB screening using the WHO four symptom screen, provided TB messages and collected sputum from persons with presumptive TB for GeneXpert testing. Test results were returned to CHWs by phone calls who then supported the linkage of diagnosed TB clients to treatment at the nearby health facility. Hotspot screening at schools and markets was also conducted.

Results: In March and September 2022, a total of 280,780 households were reached, and 763,424 individuals were screened for TB. 43,547 presumptive TB cases were identified, 91%

(39,672/43,547) sputum samples were collected, 276 and 272 TB cases were diagnosed in Jan-March 2022 and July-September 2022 respectively, contributing 62% (548/1777) of the total TB cases diagnosed in Q2 and Q4. The TB CN rate increased by 19% from 72% in October-December 2021 to 91% in January-march 2022, with the contribution of 34%(276/815), and 28.2% of total cases identified from the community in Q2 and Q4 respectively. All (548) identified TB clients were linked to treatment.

Conclusion: community door-to-door screening by skilled community health workers equipped with WHO four symptom screens is an effective approach to increasing TB CN and finding more TB cases. We recommend having this approach scaled up and done routinely.

7

Acceptability, Feasibility, and Effectiveness of Transitioning to 6 Monthly Multi-Month Dispensing of Antiretroviral Therapy to People Living With HIV in the COVID-19 Era in Malawi

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Background: Following the COVID-19 pandemic, the Malawi Ministry of Health released a policy that scaled up 6 monthly multi-month dispensing (6MMD) of antiretroviral therapy (ART) to people living with HIV in order to mitigate COVID-19 transmission. We assessed the acceptability, feasibility and effectiveness of transitioning to 6MMD during the COVID-19 era.

Material and Methods: We conducted a mixed-methods study in February 2022 at ART clinics in two high volume primary health facilities in urban Blantyre, Malawi. A survey was self-administered to health care workers (HCWs) aged >18 years of age and a subset were purposively selected for in-depth interviews (IDIs). The interviews were guided by the consolidated framework for implementation research and questions focused on perceived acceptability, feasibility, barriers and facilitators of 6MMD. We further obtained individual-level data of clients on ART from electronic medical records (EMR) to compare proportion of clients on ART transitioned to 6MMD before (Sep 2019- Mar 2020) and after (Sep 2020 to Mar 2021) release of the policy using a Chi-square test. A thematic content analysis was done for qualitative data.

Results: Out of the 77 HCWs who participated in the surveys. Seventy-three percent (56/77) were female and majority 29% were nurses. Based on the survey, most (90%) HCWs felt that provision of 6 MMD was doable with ease and 72% stated that they were able to transition clients that were

eligible without assistance. However, 49% reported drug stock outs as a challenge to implementation of the 6MMD. This finding was corroborated by most HCWs during the IDIs. HCWs further reported agreeing with the policy because it reduced number of visits which in turn led to reduced crowding and workload at ART clinics. Orientation to the policy, teamwork and use of EMR system to track clients were facilitators to 6MMD. The proportion of clients on 6MMD increased from 67% (3791/5693) to 87% (4422/5057) (p value <0.01) comparing before and after implementation of the policy.

Conclusion: The 6 monthly multi-month dispensing of ART was effective, acceptable and feasible at ART clinics. Our findings support implementation of 6MMD. However, drug stock outs should be addressed to facilitate implementation.

8

Statistical Modelling of the Impact of Poverty Elimination and Access to Social Protection on Global HIV Incidence

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Background: Ending HIV epidemic (EHE) strategies and the Sustainable Development Goals (SDGs) are intimately related by their common targets and approaches. SDG 1 aims to eliminate extreme poverty, halve multidimensional poverty, and expand social protection coverage by 2030. Achievement of SDG 1 is likely to affect the HIV epidemic through a variety of pathways. This study estimates the reduction in global HIV incidence that could be obtained by reaching SDG 1.

Material and Methods: We developed a conceptual framework linking key indicators of SDG 1 progress to HIV incidence via well described (direct and indirect) risk factor pathways. We populated the conceptual framework with data from the SDG data repository and the World Health Organization HIV database for 152 countries. We performed correlations and mediation analyses to indicate the strength of the association between the SDG 1 sub-targets and HIV incidence, resulting in a simplified framework for statistical modelling. The simplified framework linked key indicators for SDG 1 directly and indirectly to HIV incidence. We applied a covariate-adjusted exponential decay model based on linear associations between SDG 1 indicators and HIV incidence to estimate HIV incidence in 2030.

Results: Ending extreme poverty resulted in a reduction in global incidence of HIV of 38.6% (95% credible interval 18.7–48.7) by 2030. Expanding social protection coverage resulted in a reduction in HIV incidence of 70.2% (43.4–88.8) by 2030. Both (extreme poverty elimination and complete social protection coverage) pathways together yielded a reduction in HIV incidence of 81.5% (50.5–92.7).

Conclusion: Complete achievement of SDG 1 could have a substantial effect on the global burden of HIV. Cross-sectoral approaches that promote poverty reduction and social protection expansion will be crucial complements to health interventions, accelerating progress towards ending the HIV epidemic.

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Mini Oral Presentations**

9

Non-reporting of Intimate Partner Violence Among Index Case Testing Clients: Experience From Malawi

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Background: Screening for intimate partner violence (IPV) and provision of services to IPV survivors is essential in index case testing (ICT). Several studies in sub-Saharan Africa including Malawi have reported high IPV prevalence. However, IPV is rarely reported during routine IPV screening and follow up among ICT clients. We retrospectively explored the occurrence of IPV among clients who had accessed ICT services at facilities supported by Partners in Hope, a Malawian, Christian, non-governmental, medical organization and PEPFAR-USAID partner.

Material and Methods: Between July-August 2022, we enrolled ART clients (≥ 18 years) across 15 facilities, who were on ART for ≤ 12 months and had received ICT services as new ART-initiators. We used the WHO survey for gender-based violence to measure IPV in domains of physical, sexual, emotional-abuse and controlling-behaviors in the past 12 months. To understand reasons for IPV non-reporting, we randomly selected a sub-set of surveyed-clients who had experienced IPV and healthcare-workers who provided ICT services, for in-depth interviews (IDIs). We used constant-comparison methods to analyze IDIs.

Results: We enrolled 149 client-participants, 72% female, 59% married, mean age 34 (IQR: 25-40) years. IPV prevalence (last 12 months) was 71% (95%CI: 0.63%-0.78%); 76% (95%CI: 0.67%-0.84%) among females and 57% (95%CI: 0.40%-0.72%) among males. Controlling-behaviors (66%) was the most common form of IPV, followed by physical-

(40%), emotional-(34%) and sexual-abuse (21%). Twenty-two percent related the IPV event to the HIV diagnosis. We analyzed 24 IDIs (15 clients, 9 healthcare-workers). Only two clients (13%) had reported IPV to a healthcare-worker. Major reasons for IPV non-reporting were lack of knowledge about IPV reporting structures and services, concerns about needing much time to discuss IPV with healthcare-workers, and limited privacy at facilities. Healthcare-workers attributed IPV non-reporting to lack of private space for IPV screening, high workload among ICT staff, and clients' unwillingness to present IPV experiences immediately after HIV diagnosis.

Conclusion: IPV prevalence was high among recent Malawian ART initiators, including men, but IPV is often not reported during routine ICT screening and follow up. Multiple client- and health systems-level barriers to IPV reporting must be addressed urgently, given IPV's adverse impact on HIV and other health outcomes.

10

Predictors of Sustained Viral Suppression Among Children Living With HIV in Kenya: Secondary Analysis of Data From a Randomized Controlled Trial

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Background: Sustained viral suppression (SVS) amongst children living with HIV (CLHIV) is key to achieving child health and HIV treatment outcomes. This study aimed to determine predictors of SVS amongst CLHIV (ages 1 to 14 years) in Kenya.

Material and Methods: Secondary data analysis from a randomized controlled trial conducted in CLHIV in western Kenya. SVS was defined as consistent <1000 viral copies/ml among those with at least two tests (quarterly for point of care and bi-annually for standard of care viral load testing). Associations between baseline and follow-up factors, and subsequent SVS were assessed using multivariate logistic regression.

Results: We analyzed 668 CLHIV, median age 9 years (interquartile range (IQR) 7-12) and median ART duration 6 years (IQR 3-8). Primary caregivers were mostly women (68.4%), living with HIV (80.7%), in a sero-concordant HIV positive partnership (60.0%) and married (63.0%).

Children more likely to achieve SVS were older [79.0% and 77.5% among those aged 6-10 and 11-14 years, respectively, compared to 43.0% in those 1-5 years; AORs 4.55 (2.14, 9.90), and 3.72 (1.44, 9.85)]; had longer time from HIV diagnosis to ART initiation [79.5% if >1 month vs 68.3% if ≤1 week; AOR 1.79 (1.02, 3.18)]; and travelling >1 hour to the clinic [77.3% vs 67.0% if <30 minutes, AOR 1.94 (1.02, 3.77)]. Children were less likely to achieve SVS with younger primary caregivers [70.0% with caregivers aged 24-35 years vs 80.5% if aged >35 years, AOR = 0.56 (0.33, 0.96)]; virally non-suppressed caregivers [67.6% vs 77.4% with virally suppressed caregivers, AOR 0.38 (0.15, 0.95)]; lived in food insecure households [73.0% vs 81.1% in food secure household, AOR 0.37 (0.18, 0.70)], without electricity [71.0% vs 77.6% in houses with electricity, AOR = 0.61 (0.37, 0.99)], reported poor adherence [55.4% poor vs 76.5% with good adherence, AOR = 0.42 (0.21, 0.83)] or were on a protease inhibitor-based regimen [67.0% vs 80.4% if on a NNRTI-based regimen, AOR = 0.50 (0.30, 0.81)].

Conclusion: A mix of pediatric, caregiver, clinical and household characteristics were associated with SVS in CLHIV. This suggests that holistic, person, family and systems-oriented HIV care delivery would benefit the children.

11

Prevalence and Predictors of Persistent Low-Level HIV Viraemia Among People Receiving Dolutegravir-Based Antiretroviral Therapy in Southern Nigeria

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Background: Persistent low-level viraemia (pLLV) is a risk factor for virologic failure among people on antiretroviral therapy (ART). With the scale-up of Dolutegravir (DTG)-based regimen, this paper assesses the prevalence and predictors of pLLV among clients receiving DTG-based regimen in Nigeria.

Material and Methods: This retrospective cohort study used routine program data from electronic medical records for persons receiving DTG-based regimen in 155 health facilities supported by PERFAR through USAID in Akwa Ibom and Cross Rivers States, Nigeria. Persons with low-level viraemia (LLV), i.e plasma viral load (VL) between 51 and 999 copies/ml, received additional adherence support from trained case managers. Demographic (age, sex) and clinical (duration on ART, viral suppression status, and service delivery models) data were extracted and reviewed. Clients on ART ≥6 months, with baseline viral load in September 2021, and two subsequent viral load results were included in the study. The outcome analyzed was pLLV defined as two consecutive LLV results within the 12 months period. Descriptive statistics were used to summarize indices and multivariate logistic regression analysis was used to determine the predictors of pLLV using STATA ver.14 with significance set at .05.

Results: The study included 140,587 PLHIV, 63.6%(n=89,434) being females, a median age of 37 years [31-45 years], and a median ART duration of 2 years [2-4years]. The majority [n=125,619; 89.4%] were on differentiated service delivery models. The

prevalence of LLV at the initial measure was 10.4% (n=14,665/140,587). However, at repeat measure, the occurrence of persistent LLV was 0.6% (n=844/140,587). The majority of PLHIV with initial LLV [n = 13,002/14,665] attained undetectable VL level (≤50 copies/ml), and only 173/14,665 transitioned to Virologic Failure (VL≥1000 copies/ml). In multivariate analysis, increasing ART duration [coef. = 0.05; 95%CI: 0.03 – 0.07; p<0.001] and being on no differentiated service delivery models [coef. = 0.38; 95%CI: 0.19 – 0.57; p<0.001] had positive association with pLLV. However, there was no association between client age and pLLV occurrence.

Conclusion: pLLV was associated with longer ART duration and non-differentiation of ART services. This finding strengthens recommendations for frequent viral load monitoring and the benefits of intensive adherence support for clients with LLV.

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Prevalence of Advanced HIV Disease at Enrollment in Care and Associated Factors Among Adult Individuals During the Treat All Era at Selected Public Health Centres in Kampala, Uganda

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Background: Despite successes in HIV/AIDS care in Uganda, a high number of people are still dying from AIDS -related illnesses. Advanced HIV disease is still a problem after the adoption of WHO's Treat All policy. This study was conducted to determine the prevalence of advanced HIV disease at enrollment in care and associated factors among adult individuals at selected public health facilities in Kampala during the Treat All era.

Material and Methods: A cross-sectional study was conducted among adult clients enrolling in HIV care at three public health centres in Kampala, Uganda. Quantitative data were collected from 581 participants using an interviewer administered questionnaire from April to July 2022. Modified Poisson regression was used to identify factors associated with advanced HIV disease at enrollment in HIV care. In-depth interviews were conducted with 15 individuals with advanced HIV disease at enrollment for the qualitative component and data analyzed using thematic analysis.

Results: Overall, 35.1% (95% CI: 31.3 – 39.0) of participants had advanced HIV disease at enrollment in care, associated with being male (Adjusted PR: 1.38, 95% CI: 1.11 -1.735) and aged 35 years and above (Adjusted PR: 1.75, 95% CI: 1.19 – 2.59). The prevalence of advanced HIV disease was lower among those who did not report any personal health perception barriers compared to those who did (Adjusted PR: 0.63, 95% CI: 0.49 –

0.82). Individual factors took precedence in contributing to enrolling in care with advanced HIV disease; these included feeling healthy, waiting till physical health deteriorated, and first opting for alternative therapies.

Conclusion: Advanced HIV disease at enrollment in care was high during the Treat All era. The prevalence was higher among males and adults aged ≥ 35 years. Qualitative findings revealed that personal health perception barriers contribute to enrolling in care with advanced HIV disease, with most individuals perceiving themselves to be still healthy. We recommend incentives for early and routine HIV testing apart from provision of free HIV testing services especially among men and older people; and modification of HIV testing health education messages to emphasize routine testing regardless of one's perception of their health status.

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Retaining Clients in ART Care Through an Innovative Community-Based DSD Models in Southern Rural Zimbabwe: The Out-Of-Facility Community Distribution Model

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Background: Significant strides have been achieved in scaling up ART in Zimbabwe with a 91% ART coverage nationwide. However, this has increased workload in health facilities amidst health worker shortages. Furthermore, frequent facility-based ART refills lead to disengagement from care especially among clients residing in far and hard-to-reach areas. In May 2022, the OPHID consortium adopted the OFCAD model in Matabeleland South, an arid sparsely populated rural province with a population density of 13/km² versus the national 38/km².

Material and Methods: The model involves stable clients collecting three- to six-monthly ART resupplies from community health worker's (CHWs) households with facility-based clinic review visits scheduled annually. The CHWs are involved in community tracking and tracing activities and may also support other health programmes. Dispensed medicines are reported to OFCAD-hub facilities for updating of facility registers.

Results: By December 2022 there were 30 OFCAD points with 1,991 enrolled clients across the 125 Matabeleland South public health facilities supported by the OPHID consortium. From a deep dive conducted in four OFCAD-hub facilities, comparing 266 clients enrolled in 5 OFCADs to 536 randomly sampled stable clients receiving facility-based ART refills, there were more older adults enrolled [180 (67%) vs. 277 (52%), $p < 0.001$] with overall longer median duration in ART care [7.3 years (IQR, 4.8-10.5) vs. 5.7 (IQR, 3.1-8.6), $p < 0.001$]. Those in the OFCAD had been enrolled in the model for a median duration of 5.5 months (IQR, 3.9-5.7).

Overall, retention was similar in the OFCADs, 257 (96%) versus those receiving facility-based ART refills, 509 (95%), $p = 0.411$. Through key informant interviews, these CHW operating OFCAD points cited through their defaulter tracing activities, that most clients missed facility-based ART refills due to prohibitive transport costs or work commitments and that this model providing convenience in ART continuity-of-treatment.

Conclusion: The OFCAD model is a community differentiated service delivery which provides convenience in distant and hard-to-reach areas where defaulter rates are higher. The model is more preferable among elderly populations who are less agile to access health facilities. Furthermore, retention in care is comparable to conventional facility-based ART refills whilst potentially decongesting ART clinic paving leading to better-quality facility-based clinical reviews.

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Devenir a 24 Mois Des Patients Infectés Par Le VIH-1 Initiant Le Dolutégravir à Abidjan

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Introduction : Le dolutégravir a présenté une efficacité et une barrière génétique plus élevée ainsi qu'une bonne tolérance. L'objectif était de rapporter l'expérience de l'utilisation du dolutégravir (DTG) chez les patients infectés par le VIH-1 suivis à Abidjan, suite aux nouvelles directives de l'OMS.

Matériel et méthodes : Il s'est agi d'une étude rétrospective des dossiers de patients infectés par le VIH, naïfs et prétraités recevant une trithérapie antirétrovirale comportant le dolutégravir, suivis au SMIT entre 2017 et 2019. L'analyse a porté sur les aspects clinico-biologiques, thérapeutiques et évolutifs. L'efficacité et la tolérance du traitement ont été évaluées à partir du sixième mois de suivi.

Résultats : Les dossiers de 331 patients dont 191 femmes (57,70%), sex-ratio H/F à 0,73, ont été retenus. L'âge médian des patients était de 45 ans [38-53]. A l'inclusion, 119 patients (35,95%) étaient naïfs de traitement antirétroviral et 212 (64,05%) étaient prétraités, parmi lesquels 85 (40,09%) étaient en échec virologique. A M24 du suivi, la charge virale était supprimée chez tous les naïfs et dans la majorité des cas (97,17%) chez les prétraités. Concernant la tolérance, aucun effet indésirable grave n'a été notifié. Les effets secondaires les plus rapportés étaient les troubles neuropsychiatriques chez 80,36% des naïfs contre 70,69% des prétraités. Une augmentation de l'IMC médian à M24 était observée allant de 18,93 [16,36-21,46]kg/m² à 22,44kg/m² [20.07-25].

Conclusion : Cette étude rapporte une efficacité et une tolérance optimales du dolutégravir chez les

personnes vivant avec le VIH après deux ans de suivi. Toutefois, la surveillance pondérale étroite doit être de rigueur tant sur le plan clinique que biologique.

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Sustainable Business Process Model for Achieving Excellence in HIV Service Delivery through Government to Government (G2G) Funding and Direct Capacity Building of Provincial Health Offices in Zambia

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Background: From 2018-2022, CDC Zambia and the Government of the Republic of Zambia (GRZ) undertook a transition to shift PEPFAR's HIV service delivery funding from international and local nongovernmental organizations to four provincial health offices (PHOs) to ensure local ownership and sustainability of the program. This required CDC Zambia to build capacity of the financial systems and internal controls of PHOs that had been identified as based on repeated audit findings.

Material and Methods: The transition process involved using different program management and financial control strategies such as the business process review (BPR) that evaluates internal controls, assesses business and financial weaknesses, and develops quarterly action plans to address issues flagged. The BPR establishes routine internal processes aimed at building capacity to ensure compliance with financial regulations. This included annual trainings in finance and grants management for provincial staff.

Results: Over the four-year period, high risk BPR findings fell from 88 to 14, (84% reduction) and monetary audit findings fell from 20 to 4, (80% reduction). During this period, CDC Zambia was able to increase direct funding to the PHOs by 300% from \$13m to \$52m. With the funding increase, the PHOs expanded healthcare staff positions by 259% from 2,621 to 9,397. The business process model and direct capacity building of PHOs in financial management during this transition have increased

the GRZ's ability to receive US Government funds and resulted in significant HIV program achievements.

Conclusion: CDC Zambia demonstrated that transitioning to government-led service delivery is achievable in a relatively short period of time through an intense focus on BPRs, internal control assessments, and mitigating risks. This allowed for an increase in funding to four sub-national PHOs that expanded staffing support, including doubling of clinicians. Lessons learned from CDC Zambia's experience in G2G transition could inform PEPFAR or donor-supported countries looking to directly fund sub-national Ministry of Health entities as a potential effective and feasible option for service delivery.

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Adverse Events Management in Voluntary Medical Male Circumcision, at What Cost? Developing a Costing Model on the Adverse Events in Zimbabwe's Voluntary Medical Male Circumcision Programme

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Background: Zimbabwe rolled out the Voluntary Medical Male Circumcision (VMMC) programme in 2009 as an HIV prevention intervention. Although VMMC is a minor surgical procedure, the risk of moderate and severe adverse events (AEs) is inherent. Since 2009, the AE rate of 0.053% has been consistently lower than the WHO recommended threshold of 2%. Most AEs are managed at the local healthcare facility and severe cases are referred up the levels of the health system to a urologist at a central hospital and funded by implementing partners in the district where the VMMC procedure was done. Zimbabwe's national VMMC programme developed a model to project AE costs from 2022 to 2026 to inform sustainable health financing.

Material and Methods: Routine programme data for the period 2019-2021 on all types of reported AEs and their associated management and resolution costs were collected from three VMMC programme partners using Microsoft Excel. The projected VMMC targets for 2022 to 2026 from the Decision Makers' Program Planning tool 2 (DMPPT2), and the current AE rates were used as inputs to develop the costing model. Weighted yearly average AE rates were calculated using AE prevalence and management cost data from 2019 to 2021. The cost data included only severe AEs that incurred additional medical costs beyond routine management. AE costs were apportioned based on observed rates of severe AEs (SAEs) and the

estimated probability of each type of SAE's contribution to the total management cost.

Results: Of the 224 AEs reported for the period 2019-2021, 41 SAEs had a recorded cost totalling \$124,769.58. The weighted yearly average AE rate was 0.00048664. Based on the model, provisioning for SAEs should total \$564,961.45 over the next four years, with \$65,551.47 in 2022, \$50,235.67 (2023), \$56,691.23 (2024), \$65,639.31 (2025), the bulk (\$326,843.77 in 2026) due to the backloading nature of targets to reach epidemiological coverage.

Conclusion: This AE costing model informs effective resource allocation for projected AEs to advance program sustainability. Limitations of this model are that it does not take into consideration administrative costs and inflation.

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Sustainable Financing of the HIV Response in Namibia: Lessons From an End-Term Review of a National HIV Response

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Background: Some low-and middle-income countries lack evidence to support the establishment of pathways and actions towards a successful transition from development assistance to domestic financing of the HIV response despite declining external aid. This study assessed the constraints to the financial sustainability of the HIV response in Namibia.

Material and Methods: The study used a mixed-method design, involving a semi-structured, in-depth interview with purposively selected stakeholders (n = 22), a targeted desk review of technical documents and administrative records, and national stakeholders' meetings (n = 2). A conceptual framework of health financing functions encompassing revenue generation, pooling and fund management, purchasing and governance guided the study. Qualitative data were analysed thematically. Financial data were summarized using descriptive statistics.

Results: The HIV response requires about US\$1.4 billion over 2023-2027, with a funding gap ranging from US\$437.5 to US\$575.8 million. The macro-fiscal context limits the government's fiscal capacity to invest in health and HIV. Despite a marginal increase in general government expenditure (GGE), health and HIV expenditures have plateaued at about 11% of GGE and 13.5% of government health expenditure. HIV budgets do not reflect geographic prioritization, with HIV prevention being donor-dependent. The inclusion of HIV activities in other sectors' budgets has declined. Domestic private HIV financing is low, but a private sector-led HIV Trust

Fund is an untapped opportunity. The lack of social health insurance schemes resulted in inequalities in HIV service benefits and costs between private medical schemes, civil servants' schemes, and public health services. Inefficiencies in purchasing HIV services resulted from poor priority setting, a weak framework agreement for procuring HIV commodities, lack of pooled procurement despite a donor-supported bridge financing facility, an unsupportive public financial management system, low use of primary health centres, and weak partner coordination. While social contracting policy exists, public support for financing community-led interventions from the government budget is low. Resource tracking is irregular. While HIV response ceased to be a national priority, the lack of a national AIDS council limits resource mobilization.

Conclusion: These findings can inform the development and implementation of a country-led HIV financial sustainability roadmap in Namibia.

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Cost-Effectiveness and Budget Impact Analysis of the Implementation of Differentiated Service Delivery Models for HIV Treatment in Mozambique – A Modelling Study

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Background: In 2018 Mozambique's Ministry of Health launched a guideline to implement eight differentiated service delivery models (DSDMs) to optimize HIV service delivery, improve retention in care, and ultimately reduce HIV associated mortality. The models were (1) Fast-track (FT), (2) Three-month Antiretrovirals Dispensing (3M), (3) Community Antiretroviral Therapy (ART) Groups (CAGs), (4) Adherence Clubs (AC), (5) Family-approach (FA), and three one-stop shop models: (6) adolescent-friendly health services (OSS-AFHS), (7) maternal and child health (OSS-MCH), and (8) tuberculosis (OSS-TB). We conducted a cost-effectiveness analysis (CEA) and a budget impact analysis (BIA) comparing these DSDMs to conventional services.

Material and Methods: We constructed a decision tree model based on the percentage of enrolment on each DSDM and the probability of the outcome (12-months retention on ART), with and without DSDMs implementation, for each year of the study period; three for CEA (2019 to 2021), and three for BIA (2022 to 2024). The economic and financial costs for CEA and BIA, respectively, were estimated per client-year from the health system perspective, and included start-up, ARV drugs, laboratory tests, and clinical and pharmacy visits. Effectiveness was estimated using the Mozambique ART database, employing an uncontrolled interrupted time series analysis comparing the outcome before and during the implementation of DSDMs. A one-way

sensitivity analysis was conducted to identify drivers of uncertainty.

Results: During the three years of DSDMs implementation, there was a mean increase of 14.9 percentage points (95% Confidence Interval (CI): 12.2, 17.8) in 12-months retention comparing DSDMs implementation (62.5% 95%CI: 60.9, 64.1) to conventional care (47.6% 95%CI: 44.9, 50.2), and the mean base-case economic cost per person-year was estimated to be \$253 and \$359 for DSDMs and convention care, respectively; therefore, DSDMs dominated conventional care. The base-case 3-year financial costs associated with the DSDMs and the conventional care for a population of 1,535,575 were estimated to be \$1,653,814,275 and \$990,194,425, respectively. The results were most sensitive to clinical visits costs.

Conclusion: DSDMs were less expensive and more effective in retaining clients 12-months after ART initiation, and their implementation was estimated to save approximately \$670 million to the health system from 2022 to 2024.

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Adverse Childhood Experiences Are Associated With High HIV Acquisition Risk and Low PrEP Uptake Among Pregnant and Postpartum Women in Kenya

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Background: Adverse childhood experiences (ACEs) impact health outcomes later in life, including sexual behaviors. Few data exist on the relationship between ACEs and behaviors associated with HIV acquisition. We evaluated the relationship between ACEs and HIV risk and PrEP uptake among pregnant and postpartum Kenyan women.

Material and Methods: We utilized data from an ongoing evaluation of perinatal PrEP use in Kenya. In the parent study (NCT03070600), HIV-negative women were enrolled and offered PrEP during pregnancy at 20 public clinics and followed through 9 months postpartum regardless of PrEP status. We measured ACEs using the Adverse Childhood Experiences International Questionnaire (ACES-IQ); scores ≥ 6 denoted high ACEs. HIV risk was determined using a risk score developed and validated among Kenyan pregnant women (high risk: scores >6 corresponding to 8.9 HIV infections per 100 person-years). PrEP uptake was defined as taking PrEP pills anytime during pregnancy through 9 months postpartum. We used Poisson regression models, clustered by facility to assess associations between high ACEs and HIV risk and PrEP uptake.

Results: Overall, 873 women were included in the analysis with a median age of 26 years (IQR 22-30). Most were married (92%); 39% were unaware of their partner's HIV status. Median ACEs-IQ score was 4 (IQR:2-6). Nearly a third (29%) of women had high ACEs, most commonly household violence (73%). Nearly half (45%) had high HIV risk and 22% took PrEP during pregnancy or postpartum. Women with ACEs had a trend toward higher frequency of

high HIV risk compared to those with lower ACEs (PR:1.3,95%CI:0.99-1.7;p=0.06), which was statistically significant among older women >24 years ($p=0.01$). PrEP uptake did not differ by high vs. lower overall ACEs score (PR:1.2;95%CI:0.8-1.7;p=0.34), however PrEP uptake was 30% lower among women exposed to household violence during childhood (PR:0.7,95%CI:0.6-0.8;p <0.001).

Conclusion: Among this cohort of perinatal Kenyan women, ACEs were common and associated with high HIV risk into adulthood. PrEP uptake was substantially lower among women who experienced household violence in childhood. Interventions that reduce violence could disrupt pathways to HIV risk later in life and potentially improve utilization of HIV prevention services like PrEP in this population.

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Cofactors of HIVST and PrEP Acceptance Among Pregnant Women at High Risk of HIV in Kenya

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Background: PrEP and HIV self-testing (HIVST) for male partners are being scaled up within antenatal clinics (ANC). Few data are available on how co-distribution influences acceptance of both interventions and the cofactors for PrEP, HIVST or combined PrEP/HIVST use among pregnant women at high risk for HIV.

Material and Methods: We utilized data from the PrIMA (NCT03070600) trial in Kenya. Women included in this analysis were determined to be at high HIV risk and offered PrEP and partner HIVST. Characteristics were compared between women who chose: 1) PrEP and HIVST, 2) HIVST-alone, 3) PrEP-alone, or 4) declined both (reference), excluding women with partners known to be living with HIV.

Results: Among 911 women, the median age was 24 years, 87.3% were married, 43.9% perceived themselves to be at high risk of HIV acquisition and 13.0% had a history of intimate partner violence (IPV); 68.8% accepted HIVST and 18.4% accepted PrEP. Of women accepting HIVST, 84% offered them to partners; 94% of partners used HIVST; 1.2% had a reactive HIVST. Partner HIV testing increased from 20% to 82% and women's knowledge of partner HIV status increased from 4.7% to 82.0% between pregnancy and 9-months postpartum ($p < 0.001$). Overall, 54.7% accepted HIVST-alone, 4.1% PrEP-alone and 14.3% both HIVST and PrEP. Compared to women who accepted neither, choosing: 1) HIVST-alone was associated with being married, participant and partner higher level of education, and residing with partner; 2) PrEP-alone with lower social support, IPV, not residing with partner, longer duration living with partner, and

suspicion of other sexual partners; and 3) PrEP and HIVST was associated with being married, IPV, and suspicion that partner had other partners.

Conclusion: Understanding factors associated with accepting HIVST, PrEP, or both can inform HIV prevention programs for pregnant women. Strategies to improve women's self-efficacy to take up HIV prevention interventions are important to reduce incident infections during pregnancy and postpartum.

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HIV Prevalence, Associated Risk Factors and HIV Incidence in a Cohort of High-Risk Adults in Maputo, Mozambique

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Background: Mozambique faces a high burden of HIV infections, with a national prevalence of 12.4% among individuals aged 15-49 years. This study aims to determine HIV prevalence, associated risk factors and HIV incidence in a cohort of adults, in preparation for a clinical trial to assess HIV vaccines and pre-exposure prophylaxis in Maputo.

Material and Methods: This prospective cohort study, conducted from January 2019 to February 2022, enrolled adults aged 18-45 years, of both genders, recruited from the general community, and from key population groups (female sex workers [FSW], and men who have sex with men [MSM]). Subjects were screened for HIV using a sequential algorithm of two immunochromatographic strip tests. Each HIV seronegative participant was followed quarterly for a minimum of six months. HIV test and risk behavioral assessment questionnaires were administered at follow-up visits. Logistic regression models were used to assess factors associated with HIV prevalence (StataCorp, version 16.1).

Results: A total of 552 participants were screened, of which 302 (54.7%) were females, 98 (17.8%) were FSW and 45 (8.2%) were MSM. The overall HIV prevalence was 6.7% (37/551), being 5.0%, 8.8%, 16.3% and 31.1% in women, men, FSW and MSM, respectively. On the multivariate analysis, having a sexual partner 10 years older or more (OR 5.8; 95% CI: 1.36–25.4); having unprotected anal sex with other men in the prior 3 months (OR 6.7; 95% CI: 1.97–22.9); and having sexual partner(s) that has/have other partners (OR 0.16; 95%CI: 0.03-0.9) were associated with HIV infection. Five new HIV infections were registered during the follow-up period, with an overall HIV incidence of 0.6/100PY, being 0.4/100PY in men and women from the

general community, 0.8/100WY in FSW and 1.1/100PY in MSM.

Conclusion: HIV prevalence was high in the study population, being higher in the key population groups, and was associated with high-risk behavior. The overall incidence of HIV in this cohort was relatively low but was higher in FSW and MSM. Socio-economic restrictions related to COVID-19 were in place during the follow-up phase of the study, which may have contributed to the lower incidence observed.

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Low-Level Viremia as a Risk Factor for Virologic Failure in Children and Adolescents Living With HIV

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Background: Current guidelines in the majority of developing countries use a viral load (VL) cutoff of 1000 copies/mL to define virologic failure (VF). However, research increasingly demonstrates that VL from 50-999 copies/mL or "low-level viremia" (LLV) is a risk factor for future VF.

Material and Methods: A retrospective chart review was performed using the health records from the Baylor College of Medicine Children's Foundation - Tanzania sites in Mbeya and Mwanza. CALHIV up to the age of 19 years who had been on antiretroviral therapy (ART) for ≥ 6 months (by July 2021) were included in the analysis. Participants were followed longitudinally for at least two subsequent VLs after an initial undetectable VL (< 50 copies/mL). VF was defined as ≥ 1000 copies/mL.

Results: A total of 670 CALHIV were included in the outcome analysis. LLV occurred in 47.5% (318/670) and of those, 52.5% (167/318) had VL 50-199 copies/mL, 27.4% (87/318) had 200-399 copies/mL, and 20.1% (64/318) had 400-999 copies/mL. The Kaplan-Meier plot shows higher risk of failure with higher LLV category ($p < 0.0001$). When looking at predictors of VF, a Cox proportional hazard model showed that there was an increased risk of VF with higher LLV when compared to < 50 copies/mL: adjusted hazard ratio (AHR) 1.73 with 50-199 copies/mL (95%CI: 1.14-2.62, $p = 0.01$), AHR 2.19 with 200-399 copies/mL (95%CI: 1.36-3.51, $p = 0.001$), and AHR 3.34 with 400-999 copies/mL (95%CI: 2.09-5.36, $p < 0.0001$). On multivariable analysis, age of 10-14 years ($p = 0.03$) and immunosuppression, moderate ($p = 0.008$) or severe ($p = 0.009$), were associated with VF.

Conclusion: LLV was associated with increased risk of VF with higher levels LLV corresponding to higher risk. Age 10-14 years and immunosuppression were also associated with increased risk of VF.

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Improving Pediatric HIV Case Finding and Preventing New Child Infections: Findings from Infant HIV Exposure Screening in Nigeria

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Background: According to 2021 global estimates, 34% of pregnant women living with HIV (WLHIV) in Nigeria received treatment and 15% of HIV-exposed infants (HEI) received an HIV test by two months of age. Infant exposure screening (IES) outside the prevention of mother-to-child transmission of HIV (PMTCT) setting can identify WLHIV and HEI and link them to PMTCT and pediatric services. This analysis describes results of IES at non-PMTCT entry points supported by the Faith-Based Action for Scaling up Testing and Treatment for Epidemic Response (FASTER) initiative.

Material and Methods: Between July 2020 and December 2021, FASTER supported implementation of age-specific HIV risk screening tools. Healthcare workers at 57 sites were trained on IES at four non-PMTCT entry points: outpatient, inpatient, nutrition, and immunization. The IES tool identified HIV-exposed and other at-risk infants <2 years based on the following risk factors: maternal HIV status, presenting without biological mother, blood transfusion history, infant sexual assault, and unsterilized sharps exposure. Maternal HIV testing was offered to mothers with unknown HIV status (never tested or tested HIV-negative >6 months ago). At-risk infants were referred for HIV testing. We analyzed the results to determine screening

coverage, maternal and infant HIV testing and treatment, and infant positivity.

Results: Across the four entry points, 36,467 of 151,945 children <2 years in attendance received IES (24%). Mothers of 5,639 infants (15.5%) with unknown status were tested for HIV; 705 (12.5%) tested HIV-positive and were linked to PMTCT services. In total, 1,826 infants were identified as high-risk and tested for HIV, 705 infants of HIV-positive mothers and 1,121 infants with one or more of the above risk factors. Of the infants tested, 135 infants (7.4%) were HIV-positive and linked to treatment.

Conclusion: There was low uptake of IES. IES identified HIV-positive mothers with previously unknown HIV status and at-risk infants and strengthened pediatric case finding, linkage to PMTCT and infant ART services. Integration of IES into routine clinical activities can contribute to pediatric HIV prevention and treatment; however, further study is needed on factors contributing to low IES uptake, optimal implementation models and risk screening criteria.

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Early Effect of Transitioning Children to Dolutegravir-Based Regimens on Viral Load Suppression in Malawi

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Background: Malawi adopted a public health approach of transitioning people living with HIV to dolutegravir-based regimens as first-line antiretroviral therapy (ART) regardless of viral suppression (VS) status. VS in children has remained suboptimal compared to adults. In 2021, the country rolled out a pediatric formulation (10mg film-coated tablet) of dolutegravir (pDTG) in children <20 kg. We evaluated the impact of transitioning children <20 kg to pDTG on VS in Malawi.

Material and Methods: We analyzed routine retrospective program data from electronic medical record systems pooled across 169 healthcare facilities in Malawi supported by the Elizabeth Glaser Pediatric AIDS Foundation (EGPAF). We included children <15 years who weighed <20 kg and received ART between July 2021 and June 2022. Using descriptive statistics, we summarized the distribution of demographic and clinical characteristics, ART regimens, ART adherence using pill count (good adherence defined as missing no more than two ARV doses in a month at the last follow-up visit), and VS (<1000 copies/mL). We used logistic regression to identify factors associated with post-transition VS, adjusting for demographic characteristics, initial ART regimen, guardian type, adherence, and pre-transition viral load.

Results: 2,468 CLHIV were included, 55.3% (n=1364) of whom were <60 months old. 90.4% (n=2230) had been on non-DTG-based ART before pDTG was available. Before the transition to pDTG,

62.7% (n=1398) of these had a viral load (VL) test result; 62.1% (n=868) achieved VS. 99.9% (n=2227) of the CLHIV transitioned to pDTG-based regimens (without change in nucleoside backbone). Six months after the transition to pDTG, 52.9% (n=1179) had good adherence, and 38.6% (n=860) had routine VL test results; 81.4% (n=700) achieved VS. In a multivariate analysis, good adherence and pre-transition VS were associated with post-transition VS: adjusted odds ratios 2.79 (95% CI=1.65-4.71) and 5.32 (95% CI=3.30-8.57), respectively.

Conclusion: VS was achieved in most children tested within the first six months after the pDTG transition. However, adherence was suboptimal in this group, and VL testing at six months post-transition was limited. Interventions to improve VL testing and enhance good adherence are needed in children to continue progressing towards the 95-95 UNAIDS goals.

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Sex Workers and the Pap Test: Abnormal Cervical Cytology Patterns in a Cohort of Unvaccinated Sex Workers Attending an HIV-Dedicated Health Centre in Johannesburg, South Africa

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Background: Cervical cancer (CC) is the second most common cancer and the leading cause of cancer-related deaths amongst South African women. Studies suggest that sex workers (SWs), especially SWs living with HIV, may be at heightened risk for CC compared to the general population. Despite national recommendations for early screening using a Papanicolaou (Pap) test, there is only a 20% uptake of CC screening services in South Africa (SA), resulting in a paucity of data, especially in vulnerable groups living with HIV. In this analysis we describe the prevalence of cervical epithelial abnormalities in SWs accessing HIV services.

Material and Methods: Using REDCap Software, we performed a retrospective review of routine data collected at a USAID-funded SW-dedicated health centre in Johannesburg between June 2019 – September 2022. CC screening was performed by nurses using liquid-based cytology. Cytological examination was conducted at the National Health Laboratory Service using the Bethesda system for reporting. Data were analysed using Stata v.16

Results: The uptake of CC screening among SWs was 4% (121/2880). Satisfactory Pap tests from 104 women were included in the analysis. The median age was 34 years (IQR: 31-38), with an average of three years in sex work. Most SWs (71%;74/104) were HIV-positive; many (68%; 71/104) reported consistent condom use with male clients. Precursor lesions were reported in 41 smears (39%). Of these,

one was classified as atypical squamous cells of undetermined significance (ASCUS), 18 (44%) as atypical squamous cells - cannot exclude high-grade intraepithelial lesion (ASC-H), 17 (41%) as low-grade squamous intraepithelial lesion (LSIL) and five (12%) as high-grade squamous intraepithelial lesions (HSIL). No squamous cell carcinomas or glandular changes were reported. CC precursor lesions occurred in 42% of tests from HIV-positive SWs; there was a trend toward the development of a precursor lesion in HIV-positive SWs, although not statistically significant ($p < .05$)

Conclusion: The prevalence of CC precursor lesions in this cohort of mostly HIV-positive SWs was higher than the range reported for African women at 5-30%, with low screening uptake. Alternative approaches such as self-screening and an expanded vaccination strategy to reach key populations in SA is desirable.

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Ultrasound Findings in African Kaposi Sarcoma Patients – Are They a Sonographic Confounder for Disseminated TB Diagnosis?

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Background: Ultrasound, in particular the Focused Assessment with Sonography for HIV-associated TB (FASH) protocol, is frequently used to investigate patients with advanced HIV disease for findings suggestive of extrapulmonary tuberculosis (TB). As Kaposi's sarcoma (KS) is also a prevalent condition in this patient population, ultrasound changes due to KS may mimic TB. We here aimed to describe sonographic findings in patients with KS.

Material and Methods: We performed a prospective observational study in consecutive patients with newly diagnosed KS, without known diagnosis of TB. Patients were referred for paclitaxel treatment to Lighthouse clinic at Kamuzu Central Hospital, Lilongwe. All patients underwent abdominal ultrasound to assess for effusions, enlarged abdominal lymph nodes and changes in liver and spleen. Findings were documented images and video clips.

Results: We analyzed 30 consecutive patients. Using ultrasound, inguinal lymph nodes were found in 20 patients (66%); in 3 (10%) additionally abdominal lymph nodes were found in the upper abdomen. Pathological effusions were seen in 8 patients (27%): pericardial effusion in one (3%), pleural effusion in six (20%) and ascites in four (13%) patients. Three patients had mild splenomegaly. Focal spleen lesions were found in 3 (10%) patients; which were mainly echogenic. In three patients an unusual "sponge-like pattern" of the splenic vasculature was found. Six patients had echogenic focal lesions in the liver resembling hemangiomas; in two patients echogenic portal fields were seen.

Conclusion: Patients with newly diagnosed KS have effusions as well as enlarged lymph nodes, similar to those seen in disseminated TB. In solid organs focal lesions are seen, although these are commonly hyperechoic, resembling hemangiomas. Using a linear transducer, we documented a "sponge-like pattern" of spleen vasculature, which is important to recognize as it could be mistaken for numerous small TB micro-abscesses. Our case series illustrates the diverse nature of ultrasound features in patients with KS, which can be difficult to distinguish from other opportunistic diseases, including TB. These findings underline the importance of thorough physical skin and mucosa assessment for KS in African HIV patients.

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Association Between High-Risk Human Papillomavirus Infections and Cervical Cytology Results Among Women Living With HIV in Kenya

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Background: Cervical cancer is caused by high-risk human papillomavirus (HR-HPV) and women living with HIV (WLHIV) are disproportionately affected by cervical cancer. There are limited data on the association between HR-HPV and cervical cytology in Kenya, particularly among WLHIV who are at higher risk of developing cervical cancer. We determined the prevalence of HR-HPV infections and their association with cervical cytology findings among Kenyan WLHIV.

Material and Methods: We conducted a cross-sectional study among WLHIV attending Kenyatta National Hospital (KNH, Kenya's national referral hospital) for HIV care and treatment. Cervical cytology was performed by KNH medical providers per standard of care. Study nurses collected a cervical sample with a cytobrush for HPV genotyping using Gene Xpert® assays and HPV Genotypes 14 Real-TM Quant™ V67-100 FRT kits. Multivariable logistic models were used to evaluate the association between the cytological result (normal vs. abnormal) and HR-HPV, adjusting for the duration of antiretroviral therapy (ART), CD4 count, and behavioral factors.

Results: Overall, 647 WLHIV enrolled in the study. The mean age of participants was 42.8 years (SD 8.7). All participants were on ART; 7% were initiated on ART in ≤ 12 months and 8.8% were not virally

suppressed (>1000 copies/mL). The prevalence of any HR-HPV was 34.6%; 29.4% had a vaccine-preventable HR-HPV strain. The most common HR-HPV was HPV-52 (13.4%), followed by HPV16 (9.9%), and 56 (9.6%). Half of the participants with abnormal cervical cytology had atypical squamous cells of undetermined significance while 17% had high-grade squamous intraepithelial lesions. There were higher odds of abnormal cervical cytology in women >35 years (aOR=7.27, 95% CI, 1.48-35.74) than in younger women. There were higher odds of abnormal cervical cytology associated with multiple HR-HPV (aOR=5.2, 95% CI, 2.5-10.9, p<0.001).

Conclusion: Over a third of WLHIV enrolled in this study at Kenya's national referral hospital had HR-HPV. There was a strong association between abnormal cervical cytology and the presence of multiple HR-HPV and older age. Cervical cancer programs for WLHIV could consider incorporating HR-HPV screening to identify women most likely to benefit from more intensive monitoring and assessment.

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Avaliação do tratamento preventivo da TB com 3HP em unidades sanitárias de grande volume na Cidade de Maputo e Distrito de Chokwe, Moçambique

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Contextualização: O tratamento preventivo da tuberculose (TPT) tem sido uma prioridade para o alcance da estratégia global para acabar com a Tuberculose (TB) até 2030. No entanto a adesão dos pacientes ao regime com Isoniazida por seis meses (6H) foi um desafio por vários anos, tendo o país apresentado apenas 65% de completude de tratamento em 2020. O regime com tomas semanais de Isoniazida e Rifampitina por três meses (3HP) tem contribuído para melhores resultados de completude do TPT. Com o início da dispensa de 3HP em Moçambique, em 5 distritos da Cidade de Maputo e 2 distritos na Província de Gaza; houve necessidade de se avaliar a viabilidade da implementação deste regime de TPT.

Metodologia: Foram escolhidas 3 unidades sanitárias (US) para o efeito, nomeadamente o Hospital do Carmelo em Chokwe- na província de Gaza e os Centros de Saúde de Mavalane e Zimpeto- Maputo Cidade. O 3HP foi administrado a adultos novos inícios de tratamento antiretroviral (TARV) de Abril de 2021 á Junho de 2022, com avaliação do fim do seu TPT até Outubro de 2022.

Resultados: Dos 854 inícios TARV inscritos, 722 (85%) completaram o TPT, tendo Hospital do Carmelo 97%, CS de Zimpeto 84%, e CS de Mavalane 83% de completude respectivamente, 71 (8%) perda de seguimento e 58 (7%) pacientes não avaliados (transferências e outras razões), tendo o CS do Zimpeto apresentado mais pacientes não avaliados (50). Não foram notificados casos de pacientes que tenham tido recções adversas, evolução para-TB activa e/ou registo de casos de óbito.

Conclusão: O 3HP apresentou uma taxa de completude melhor do que a apresentada pelo anterior regime de TPT. Apesar da taxa de completude ter sido mais baixa nas US's da Cidade de Maputo, esta ainda está acima da média nacional e parece uma alternativa viável para o TPT em Moçambique. Notou-se também que á US que se encontrava em região fronteiriça registrou mais pacientes não avaliados por transferência dos mesmos.

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Recent Infection Surveillance Within Routine HIV Testing Services in Tanzania, 2021-2022

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Background: HIV-1 recent infection testing may help differentiate between recent HIV infections acquired within the last year versus long-term infections. Determining where new infections are occurring informs targeted actions to detect, prevent, and respond to transmission of HIV. In 2019, Tanzania incorporated a Rapid Test for Recent Infection (RTRI) for surveillance purposes within routine HIV testing services in high-volume healthcare facilities. This study describes the prevalence and factors associated with recent HIV infection.

Material and Methods: Data from 75 facilities conducting recency testing between December 2021 to September 2022 were included. Eligible participants were adults aged 15 years and older, newly diagnosed with HIV, who self-reported not being on antiretroviral therapy and verbally consented to recency testing. A recent case was defined as testing recent by RTRI administered at point of care. RTRI outcome, demographic information and responses to HIV risk assessment questions were collected. Data analysis was conducted using SAS 9.4. Logistic regression models were used to assess correlates of recent HIV infection. We reported adjusted odds ratio (OR) with 95% confidence interval (95%CI).

Results: Of the 6,268 eligible individuals offered RTRI and 6,201 (98%) were tested; 1,022 (16%) had a recent infection result. The highest proportion of recent infections (26%) was among females aged

15-24 years. The odds of a recent infection result were higher among females [aOR=1.39; 95%CI: 1.02-1.39] compared to males; higher [aOR=2.71; 95%CI: 2.13-3.42] among younger adults (15-24 years) compared to older adults (45 years and older) and higher among individuals self-reporting having a sex partner with a known HIV infection [aOR: 1.33 95% CI: 1.08-1.66] or unknown status [aOR 1.29; 95% CI: 1.09-1.54] compared to those whose sex partners were HIV negative. Differences in transactional sex and injection drug use were not statistically significant.

Conclusion: Initial surveillance results suggest that females and younger adults had higher likelihood of RTRI recent HIV infections compared to males and older adults. Using data from recency surveillance may highlight sub-populations at high-risk of recent infection and inform targeted prevention programs. Current efforts to incorporate viral load data into a recent infection testing algorithm will enhance the accuracy of future findings.

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Empowered by Faith to Leave No One Behind: Collaborating with Faith-Based Organizations to Deliver HIV Services to Men in Zambia

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Background: Zambia is on the cusp of HIV epidemic control, yet gaps remain, especially among men who do not know their HIV status and who are not linked to treatment or prevention. Religious venues offer a unique opportunity to reach men. We aimed to reach men with HIV service delivery through the Faith Community Initiative (FCI) in rural Zambia.

Material and Methods: The Community Impact to Reach Key and Underserved Individuals for Treatment and Support (CIRKUIITS) project supports community-based HIV services in the Eastern, Southern, and Western Provinces of Zambia. CIRKUIITS collaborated with Zambia Interfaith Networking Group (ZINGO) and Expanded Church Response (ECR) to implement FCI. ZINGO educated 607 faith leaders on Messages of Hope and benefits of HIV testing and treatment. Messages were disseminated during homilies, sermons, and Christian radio programs. ECR engaged 87 faith community members and trained them in psychosocial counselling and HIV testing. They offered HIV testing with linkage to treatment for HIV-positive persons and linkage to prevention for HIV-negative persons. We analyzed routinely collected disaggregated data across three provinces from October 2021 to September 2022.

Results: Through FCI, 3,401 men were reached with Messages of Hope; 57% (1,926) were eligible for

HIV testing with 7% (143/1,926) under 15 years, 18% (340/1,926) aged 15-24 years, and 75% (1,443/1,926) aged over 24 years. All eligible (1,926) were tested for HIV, and 13% (247/1,926) tested positive. By age group, 7% (10/143) under 15 years, 6% (22/340) aged 15-24, and 15% (215/1,443) over 24 years tested positive. Of the 247 who tested positive, 94% (233/247) were linked to ART. Of 1,679 men who tested HIV-negative, 44% (740/1,679) were initiated on PrEP with 20% (150/740) aged 15-24, and 80% (590/740) over 24 years. Use of trained religious leaders to disseminate Messages of Hope influences behavior change on uptake of HIV services among men.

Conclusion: Engaging faith communities and leaders facilitated reaching both young and older men with HIV testing, treatment, and prevention services in Zambia, including PrEP. Faith-based organizations are the largest non-governmental provider of health services in many settings and may offer unique opportunities for HIV prevention and treatment interventions.

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La Peur Persistante de la Stigmatisation : Principal Obstacle à la Décentralisation de la Prise en Charge du VIH Pédiatrique AU Sénégal

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Contexte : Au Sénégal, depuis 2018, les postes de santé (PS), dirigés par un infirmier chef de poste sont habilités à délivrer des antirétroviraux (ARV) sous contrôle du médecin du centre de santé (CS) dont ils dépendent. Cette décentralisation vise à améliorer l'accès aux soins et éviter les interruptions de suivi. Dans la région de Ziguinchor, le CS de Bignona suit 64 EAvVIH. Sur les 39 PS appartenant à ce district de santé, 15 sont habilités à délivrer des ARV. Dans le cadre du programme EnPRISE3, financé par Expertise France, une recherche a été menée sur la prise en charge (PEC) communautaire des EAvVIH et l'utilisation des services de santé par les familles.

Matériel et méthodes : L'enquête qualitative a été conduite d'août à septembre 2020. Des entretiens semi-directifs ont été menés auprès de 21 professionnels de santé et acteurs sociaux, et 16 EAvVIH et/ou leurs parents ou tuteurs au CS de Bignona et dans les PS de Tenghory Transgambienne et Badiouré. Ils ont été complétés par une revue documentaire et ont fait l'objet d'une analyse thématique.

Résultats : Sur les 15 PS habilités, 13 délivrent des ARV aux personnes vivant avec le VIH. Parmi les sujets de l'enquête, six familles résidaient plus près d'un PS que du CS de Bignona. Cependant, seuls deux enfants sur les six concernés y étaient suivis. Ils étaient âgés de 6 et 7 ans. Leurs mères, séropositives, vivaient dans une grande précarité

économique et assumaient seules la charge de leur enfant. La proximité du PS permettant de réduire les coûts de transport était leur principale motivation. Les quatre autres familles ont refusé le transfert au PS. Malgré la distance, elles préféraient le suivi au CS de Bignona en raison de la crainte d'être reconnues, que leur maladie et/ou celle de leur enfant soit dévoilée et leur vie sociale compromise.

Conclusion : Notre étude montre que l'un des principaux obstacles à la décentralisation de la PEC du VIH pédiatrique dans les postes de santé est la persistance d'une forte stigmatisation et de ses conséquences sociales.

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High Prevalence of Anal Oncogenic Human Papillomavirus Infection in Young Men Who Have Sex with Men Living in Bamako, Mali

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Background: High-risk human papillomavirus (HR-HPV) anal infection is a major problem among men who have sex with men (MSM) living in sub-Saharan Africa. The prevalence of anal HR-HPV infection and associated risk factors were estimated in a cross-sectional study in MSM living in Bamako, Mali.

Material and Methods: MSM consulting at sexual health center of the National NGO Soutoura, Bamako, were prospectively included. Sociodemographic and clinical-biological data were collected. HPV detection and genotyping were performed from anal swabs using multiplex real-time PCR. Risk factors associated with anal HPV infection were assessed by logistic regression analysis.

Results: Fifty MSM (mean age, 24.2 years; range, 18–35) of which 32.0% were infected with HIV-1, were prospectively included. The overall prevalence of anal HPV infection of any genotypes was 70.0% (35/50) with 80.0% (28/35) of swabs positive for HR-HPV. HR-HPV-58 was the most detected genotype [13/35 (37.1%)], followed by HR-HPV-16 and low-risk (LR)-HPV-6 [12/35 (34.2%)], LR-HPV-40 [10/35 (28.6%)], LR-HPV-11 [9/35 (25.7%)], HR-HPV-51 [8/35 (22.8%)], HR-HPV types 18 and 39 [7/35 (20.0%)] and LR-HPV-43 [6/35 (17.1%)]. HR-HPV-52 and LR-HPV-44 were detected in lower proportions [5/35 (14.3%) and 4/35 (11.4%), respectively]. LR-HPV-42, LR-HPV-54, HR-HPV-31 and HR-HPV-35 were detected in very low proportions [3/35 (8.5%)]. Multiple HR-HPV infections were diagnosed in one-third of anal

samples [16/50 (32.0%)], including around half of HR-HPV-positive anal swabs [16/35 (45.7%)]. More than half [27/50 (54.0%)] swabs were infected by at least one of HPV genotypes targeted by Gardasil-9[®] vaccine, including a majority of vaccine HR-HPV [22/50 (44.0%)]. In multivariate analysis, participation to sex in group was associated with anal infection by multiple HPV (aOR: 4.5, 95% CI: 1.1–18.1%; P = 0.032), and HIV-1 infection was associated with anal shedding of multiple HR-HPV (aOR: 5.5, 95% CI: 1.3–24.5%; P = 0.024).

Conclusion: These observations indicate that the MSM community living in Bamako is at high-risk for HR-HPV anal infections, with a unique epidemiological HPV genotypes profile and high prevalence of anal HPV covered by the Gardasil-9[®] vaccine. Scaling up prevention strategies against HPV infection and related cancers adapted to this highly vulnerable MSM community should be urgently prioritized with innovative interventions.

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Challenges With Oral PrEP Uptake, Condom and ART Use Among Female Sex Workers in Three Districts in Malawi - Results From Recent HIV Infection Surveillance Hotspot Investigations

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Background: The risk and burden of HIV is higher among female sex workers (FSW) than the general population. To reduce HIV transmission in both, there is a need to promote uptake of pre-exposure prophylaxis (PrEP), consistent condom use, and adherence to antiretroviral therapy (ART), if infected. We present key findings from interviews with FSW during recent HIV infection surveillance hotspot investigations.

Material and Methods: Between October and November 2022, we investigated ongoing HIV transmission in areas identified as “hotspots” from recent HIV infection analysis. The investigation team included clinical and community stakeholders from government and non-government partners. We conducted five focus group discussions (FGD) with FSW from Kasungu, Mangochi, and Mzuzu districts in Malawi. We summarized notes from qualitative data collection to highlight factors which affect oral PrEP uptake, and consistent condom and ART use among FSW.

Results: FSW preferred to access HIV services from drop-in centers (operated by non-governmental organizations), where service delivery was less stigmatizing than government facilities. Reasons for missing ART included a belief that medication should only be taken after eating and inability to access their routine ART clinic while traveling for work. Although condoms were readily accessible, FSW from all five FGD reported accepting

condomless sex as an economic necessity or sometimes as a means of earning more money. One FSW reported, “if they don’t get exactly what they want, some clients may beat or [force condomless sex] upon us. When we try to report, the authorities don’t always take us seriously”. There was also inadequate knowledge about PrEP and fear of HIV stigma, due to the resemblance of PrEP packaging to ART medication.

Conclusion: To reduce HIV transmission in hotspots, there is a need to engage FSW to address misconceptions and stigma surrounding PrEP and ART and promote routine condom use and increase access to post-exposure prophylaxis following condomless sex. Government health facilities need to review services provided to FSW to create a conducive, accessible, and acceptable environment. Enforcement agencies and governments may also consider setting up systems that more effectively address violence perpetrated against FSW.

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Access to Cervical Cancer Screening Among Women Living With HIV in Malawi - Analysis of Malawi Population-Based HIV Impact Assessment (MPHIA) 2020-21 and MPHIA 2015-16 Surveys

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Background: Malawi has one of the highest cervical cancer (CxCa) burdens globally. CxCa screening and treatment of pre-cancer is an important intervention to eliminate CxCa. The Malawi Population-based HIV Impact Assessment (MPHIA) 2015-16 reported low CxCa screening coverage among women living with HIV (WLHIV). Since October 2018, President's Emergency Plan for AIDS Relief (PEPFAR) has supported the provision of CxCa screen-and-treatment services for WLHIV in highest-burden antiretroviral (ART) facilities in Malawi. We compared the MPHIA 2020-21 screening and treatment data to the MPHIA 2015-16 findings.

Material and Methods: The MPHIA are nationally representative household surveys that include a questionnaire and HIV testing. Women aged 15-64 were asked about CxCa screening, results, and treatment. We analyzed self-reported CxCa screening data among WLHIV by demographic factors and reported 95% confidence intervals (CI). Results were weighted and accounted for survey design.

Results: In 2015-16 and 2020-21, 1,507 and 1,616 WLHIV were interviewed, respectively. In 2015-16, 16.1% (95% CI: 13.5%-18.8%) reported CxCa

screening, compared to 38.4% (95% CI: 35.3%-41.6%) in 2020-21. Screening among WLHIV on ART increased from 17.0% (95% CI: 14.2%-20.2%) to 41.2% (95% CI: 38.0%-44.5%). Although CxCa screening coverage improved across multiple demographic characteristics, the magnitude of improvement was highest in the lower education and wealth classes. There was an over 3-fold increase in WLHIV with no education (9.0%; 95% CI: 5.6%-14.2% to 30.4%; 95% CI: 24.1%-37.5%). For those in the lowest wealth quintile, screening was almost 7 times more in 2020-21 (3.8%; 95% CI: 1.6%-8.5% to 25.8%; 95% CI: 19.8%-32.9%). There was greater improvement in CxCa screening coverage in rural settings; 11.7% (95% CI: 9.3%-14.7%) to 36.0% (95% CI: 32.3%-39.9%) compared to 27.5% (95% CI: 22.6%-33.0%) to 46.0% (95% CI: 40.9%-51.1%) in urban. Same-day treatment for abnormal results was 52.4% (95% CI: 27.0%-76.7%) in 2015-16 and 74.6% (95% CI: 48.7%-90.1%) in 2020-21.

Conclusion: CxCa screening among WLHIV has markedly improved, especially for those on ART and in underserved communities. This suggests that PEPFAR investments and integration of CxCa screening in ART clinics have increased demand and access. However, this can be strengthened by ensuring CxCa screening services are available at all ART facilities.

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Preliminary Results of Safety in Health Care Workers After the BBIBP-CorV Vaccine in Mozambique

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Background: The vaccination for COVID-19 in Africa started late than other regions in the world. Limited data was available regarding the safety of vaccines in African continent. The uncertainty regarding the adverse events of COVID-19 vaccines and misconception about these vaccines was a concern of the African governments that would cause vaccine hesitancy. This study aimed to evaluate the adverse events and immunogenicity occurring after the administration of the BBIBP-CorV.

Material and Methods: This was a cohort study that followed health care workers between March 2021 and May 2022 in Nampula, Beira, Maputo City and Province. A call on two weeks after the vaccination was made to access the adverse events and blood was collected to access the immune response before and after the vaccination with BBIBP-CorV (Sinopharm, China). The screening for antibodies against SARS-CoV-2 was performed using the PANBIO™ COVID-19 IgG Rapid Test Device (Abbott, USA).

Results: The study enrolled 1770 participants from those, 643 collected blood for the study of immune response study. Participants were mostly female (55.42%) and the mean age was 39 (range 19-85). After the first dose of the vaccine, reactogenicity was reported in 11% (196) participants and after the second dose in 3% (65) participants. There was a difference in the general symptoms ($p=0.003$) and local symptoms between the two doses ($p=0.0$). On the first dose, site pain (91.84%), headache (49.71%) and fatigue (45.64%) were the most prevalent reported. On the second dose, site pain (93.85%), headache (50.62%) and fatigue (44.74%) were the most prevalent reported. Before the

vaccination 47.44% participants had antibodies for SARS-CoV-2 (IgM or IgG). There was no difference on the prevalence of adverse events between people with or without previous exposure to antibodies before the vaccination. Two COVID-19 infections were registered after the second dose of vaccine.

Conclusion: The BBIBP vaccine-CorV is safe and a previous exposure or not seems to not influence the safety of the vaccine. It seems that there is a difference between the general symptoms and local symptoms reported between the 2 doses.

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Hybrid Immunity in Mozambican Healthcare Workers Vaccinated With an Inactivated COVID-19 Vaccine

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Background: There is limited data on the immunogenicity of COVID-19 vaccines in Africa. Inactivated vaccines, including BBIBP-CorV (Sinopharm, China), account for almost half of the COVID-19 vaccine doses delivered globally. Binding and neutralizing antibodies (Nab) have been correlated to protection against COVID-19. This study in Mozambique, evaluated the effect of antecedent SARS-CoV-2 infection on the antibody response (including against Omicron) induced by BBIBP-CorV vaccine.

Material and Methods: From March to May 2021, blood samples were obtained from 51 healthcare workers before the first (D0) and second dose (D21) of the BBIBP-CorV, and two weeks later (D35). IgG binding antibody titers against the full-length spike (anti-S), receptor binding domain (anti-RBD) and nucleocapsid protein (anti-N) of SARS-CoV-2 were measured at D0, D21 and D35 using Luminex and binding-antibodies-unit (BAU)/mL. Pseudovirus neutralization assays (ID50) against the D614G and Omicron (BA2) variant were evaluated on D35 samples. Differences were evaluated applying the Mann-Whitney or Wilcoxon tests.

Results: At D21, the IgG titers in those seropositive to any of the epitopes at baseline visit (SP, n=26) were higher compared to the sero-negative group (SN, n=25) at D35, for anti-S (266.0BAU/mL vs 110.8BAU/mL; p=0.0130) and anti-N (57.66BAU/mL vs 39.71BAU/mL; p=0.0287), and similarly for anti-RBD (138.3BAU/mL vs 85.95BAU/mL; p=0.1350). In the SP group, there was no further increase in titers of anti-N or anti-RBD at D35, and the anti-S IgG levels decreased compared to D21 (266.0 vs. 220.8 BAU/mL; p=0.0327). That decrease was not observed in the SN (15.59 vs. 110.8BAU/mL; p=0.0009). Nab against D614G and BA2 strains

were manifested in both SP and SN (96.15% vs 23.08% and 100% vs 78.26%, respectively) at D35. The ID50 titers were higher in SP compared with SN group for D614G (461 vs 109.5; p=0.042) and BA.2 (62 vs 20; p=0.044).

Conclusion: Our results suggest that a second BBIBP-CorV dose within three weeks of the first, does not increase binding antibodies in individuals with antecedent SARS-CoV-2 infection. These findings have implications for the ongoing roll-out of COVID-19 vaccines in Africa where >90% of the population are sero-positive, with a single dose of vaccine likely being adequate as the “primary series”.

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Positive and Healthy Living Program for Young People Living With HIV in Nairobi, Kenya: Findings From a Pilot Study

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Background: Young people living with HIV (YPLWH) are at a greater risk of mental health and psychosocial problems that adversely impact their treatment adherence and overall well-being. There is a gap in evidence-based age-specific interventions that adequately address the unique needs of YPLWH in routine care. The Positive and Healthy Living Program (PHLP) was developed to address this gap. It is a structured, peer-led intervention in which trained peer educators and lay health workers.

Material and Methods: A pilot trial was carried out at Kenyatta National Hospital in Nairobi, Kenya, with 33 YPLWH participants being offered an age-differentiated group intervention (10-14 years, 15-19 years, and 20-24 years). Clinical and mental health assessments were collected at baseline and end-line, 6- and 12-month post-intervention. Data were analyzed using parametric and non-parametric for comparisons within and between groups. Qualitative findings from focus group discussions and self-reported stories are summarized.

Results: Significant improvement was seen in clinical and mental health outcomes at 6 months follow-up. Viral load suppression (<1000 copies/ml) increased from 78.8% to 90.9%. Mean depression improved from 5.8 to 4.9 from baseline to 12 months follow-up, with participants having no depression increasing from 9.1% to 15.2%. Mean global distress (subjective well-being and life functioning deficits, problems, and risk) improved from 45.2 to 38.2 from baseline to 12-month follow-up. Young participants reported improvement in self-awareness, acceptance, and

confidence. At the 12-month follow-up, they reported taking greater responsibility for their health and well-being through thoughtful disclosure practices, adherence to treatment, improved lifestyle, and decision-making processes around education.

Conclusion: Improvement in clinical and mental health outcomes highlights the potential benefit of this program for YPLWH. Future studies would need larger samples from diverse geographical and cultural backgrounds and a comparative group to yield more generalizable data to uncover the broader impact of this program.

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Risk Compensation Among Virally Suppressed Persons on Anti-Retroviral Therapy

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Background: The risk compensation theory posits that individuals lower their perception of behavioral risks as they acknowledge successes in interventions that reduce or eliminate the consequence of the behavior. The likelihood of risk compensation driven by the successes of HIV prevention interventions has been reported in some studies, but there is a paucity of data on risk compensation emanating from the proven potency of anti-retroviral therapy (ART) in HIV prevention. The objective of this study was to determine the existence of HIV-related risk compensation among virally suppressed persons on ART.

Material and Methods: This was a cross-sectional study of persons living with HIV enrolled in the PEPFAR/CDC HIV treatment and care program in Nigeria. Data were collected between October and December 2022 in the HIV treatment facilities. Inclusion criteria were: being aged 18 and above and having at least 6 months of HIV treatment. The outcomes of interest were: unprotected sex in the last intercourse, more than one sexual partner, and substance use before the last sex, while the main independent variable was being virally suppressed. Using a scoring method, responses were grouped into high-risk and low-risk behaviors. Descriptive statistics were done to characterize the study population. Regression analysis was done to assess the associations between being virally suppressed and the outcomes of interest.

Results: There were 1688 study participants, (female, 58.1%), with the majority (46%) in the age group 26-35 years. Being virally suppressed for more than two years was associated with unprotected sexual intercourse (OR 2.03, 95% CI 1.63–4.70) and having more than one sexual partner (OR 5.32, 95% CI 5.18–10.72). Having maintained viral suppression for at least two years (AOR = 1.28; $p < 0.03$), being between the age of 26-35, (AOR = 1.88; $p < 0.01$), and educated up to

degree level (AOR = 2.38; $p < 0.04$) were associated with high-risk sexual behavior. There were higher odds of high-risk sexual behavior among males (AOR = 2.71; $p < 0.01$).

Conclusion: This study suggests that among persons living with HIV, being virally suppressed reduces the perception of sexual risk behaviors, which agrees with the theory of risk compensation.

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Complexities of Managing Survivors of Gender-Based Violence; Experiences From Beitbridge, Zimbabwe

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Background: In Zimbabwe, about 1 in 3 women aged 15-49 have experienced physical violence and about 1 in 4 women have experienced sexual violence since the age of 15. This is perpetuated by socio-cultural and religious practices that normalise sexual violation of women and girls. We sought to determine the impact of GBV on new HIV infections in Beitbridge district, Zimbabwe where harmful practices such as child marriages are prevalent.

Material and Methods: Data collected from 2020-2022 on survivors subjected to gender-based violence (GBV) at the Family Support Trust (FST) clinic, were analysed in python software to determine the extent to which GBV impacts HIV incidence. Data were filtered to retain those tested for HIV because of the risk and further filtered to retain the number of survivors tested for at least 3 times in line with the national guidelines with a final positive HIV test result after having tested negative on the initial test. This was calculated against the total number of those at risk of contracting HIV as a result of GBV to determine the HIV incidence rate.

Results: Of the 3220 survivors who received post GBV medical and psychosocial services at FST, 68% were sexually violated women and girls of all age groups (median age 14 years) and of those, 40% were victims of harmful traditional practices. 93.6% (2,838) of the survivors were tested for HIV. Already on ART (10) and knowing one's status were the reasons for not testing for HIV. Among the 2,834 that tested HIV negative, 70% presented after 72hours and were ineligible for post-exposure prophylaxis. 511 presented already pregnant. 41 survivors had a new HIV positive result on follow-up testing at three months translating to an incidence rate of 2.1% amongst GBV survivors. Self-reported none adherence was the reason for 2 seroconversions among PEP users.

Conclusion: GBV prevention, screening and management should be integrated with combination HIV prevention services. A multifaceted and multisectoral approach to the prevention and management of GBV targeting harmful practices, legal factors, literacy on HIV prevention, early presentation and PEP adherence and linkage to PrEP is indicated.

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Same Day ART Initiation, Loss to Follow-up and Viral Load Suppression Among People Living With HIV in Low- And Middle-Income Countries: A Systematic Review and Meta-Analysis

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Background: In 2015, the World Health Organization recommended early antiretroviral therapy (ART) initiation after HIV diagnosis. Although some studies revealed better outcomes on same-day ART initiation (SDI) compared to non-same-day ART initiation (NSDI), other studies have shown higher proportions of loss to follow-up (LTFU) among those who receive SDI. These mixed results call for the need to further evaluate the benefits of SDI on LTFU and viral load suppression (VLS) after seven years of its implementation.

Material and Methods: This was a systematic review and meta-analysis of people living with HIV in low- and middle-income countries (LMICs). PubMed, Cochrane Library, Google Scholar, and CINAHL were searched from March 2004 to December 2022. VLS was defined as HIV RNA <1,000 or <400 cells/ml depending on studies. Forest plots were used to present the pooled prevalence and 95% confidence intervals (CI). Analyses were performed in STATA.

Results: A total of 8 studies (2 clinical trials, 5 cohorts, and 1 cross-sectional) were included in the final analysis. Of 156,445 people living with HIV, 45,502 (29.0%) were LTFU. Compared to those who received NSDI, those who received SDI were more likely to be LTFU (risk difference (RD)=0.04; 95%CI:

0.01-0.08). There was not a statistically significant difference in VLS among those who received SDI compared to the NSDI (RD=0.02; 95%CI: -0.04-0.06). The 6-, 12- and 24-month VLS results comparing SDI vs. NSDI were also similar (RD=0.01; 95%CI: -0.04-0.06, RD=0.04; 95%CI: -0.11-0.20, and RD=-0.02; 95%CI:-0.10-0.06, respectively). Among 8 studies included in the final analysis, six reported 6- and 12-month LTFU only, and 2 did not specify the time point for LTFU. For these 6 studies, a subgroup analysis showed no statistically significant difference in LTFU (RD=0.04; 95%CI: -0.00 – 0.09 and RD=0.03; 95% CI: -0.03 – 0.10, respectively).

Conclusion: Nearly three in ten people living with HIV in LMICs who initiated ART were LTFU. Although there was not a statistically significant difference in VLS among SDI compared NSDI, SDI was associated with increased risk of LTFU. Efforts to prevent LTFU among those who receive SDI are critical to maximize its potential benefits.

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Effect of the COVID-19 Pandemic on HIV Service Delivery and Viral Suppression in Northern Nigeria

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Background: During the COVID-19 pandemic, HIV programs scaled up differentiated service delivery (DSD) models to better serve people living with HIV (PLHIV). We evaluated the effects of COVID-19 on delivery and uptake of services in Northern Nigeria.

Material and Methods: We analyzed routine data for PLHIV ≥10 years old from 63 facilities enrolled between 04/2019 and 03/2021. We defined the study period as pre-COVID (before 04/2020) and during COVID (after 04/2020), missed refill appointment if records lacked documentation of a visit >28 days after the scheduled date, and MMD3

and MMD6 as having ART refills occurring at ≥ 3 months and ≥ 6 months intervals respectively. We assessed viral load (VL) testing, turnaround time (TAT) and viral suppression (< 1000 copies/ml) among those on ART for ≥ 6 months. We used test of proportions and t-tests to determine differences in outcomes, and fitted a multivariable logistic regression model to determine factors associated with maintaining/achieving viral suppression during COVID for those in care before and during COVID.

Results: Of 84,776 patients, 58% were < 40 years old, 67% were female, 55% were on ART for > 5 years, and 93% were from facilities with community-based ART refill services. A higher proportion were on MMD3 (95% versus 74%, $p < 0.001$) and MMD6 (56% versus 22%) during COVID than pre-COVID. A higher proportion had a VL test during COVID (55,271/69,630, [84%]) than pre-COVID (47,747/68,934, [73%], $p < 0.001$). Viral suppression was also higher during COVID (93% [51,196/55,216] vs 91% [43,336/47,728], $p < 0.001$). There was a higher proportion of missed clinic visits during COVID (40% [28,923/72,359] vs 39% [26,304/67,365], $p < 0.001$). VL TAT increased during COVID (mean number of days: 38 versus 36, $p < 0.001$). Modifiable factors associated with maintaining/achieving suppression during COVID were receiving MMD3 or MMD6 (OR: 2.8 [95% CI: 2.30-3.47] and OR: 6.3 [95% CI: 5.11-7.69] respectively), and attending clinics with community-based ART refill (OR: 1.6 [95% CI: 1.39-1.87]).

Conclusion: The Nigeria HIV program demonstrated resilience during the COVID-19 pandemic and adoption of DSD had a positive impact on HIV care. Though VL TAT and missed clinic visits slightly increased during the pandemic, VL testing coverage improved and viral suppression moved closer to 95%.

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Molecular Epidemiology and Trends of HIV-1 Transmitted Drug Resistance in Mozambique 1999-2018

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Background: By 2021, 2.1 million Mozambicans were living with HIV, and of these 1.5 million were receiving antiretroviral treatment (ART). Although considerable efforts in response to the HIV epidemic have been made, the country still faces challenges toward the 95-95-95 targets with 71.6% of people living with HIV know their status, 96.4% on ART, and 89.4% virally suppressed. Due to unavailable genotyping routine tests, and ineffective control of HIV drug resistance (HIVDR) emergence and transmission, this study explores in detail the transmitted drug resistance (TDR) over time in Mozambique.

Material and Methods: In order to determine the temporal trends of TDR in Mozambique, a literature review and data search of available pol sequences from treatment naïve patients were performed. Data from seven studies and one unpublished study conducted between 1999 and 2018 were included for analysis. Calibrated Population Resistance tool (CPR) and REGA HIV-1 Subtyping Tool were used to determine resistance mutations and subtypes respectively. Comparison between proportions of categorical variables was done using chi-square and Fischer's exact test with R programming language.

Results: A total of 865 sequences sampled between 1999 and 2018 were analyzed. Over time, Subtype C predominated in the southern, central, and northern regions. However, the northern region showed a higher genetic diversity accounting for 19% non-subtype C sequences. The overall TDR prevalence rate increased over time reaching 14.4% (CI, 7.9-19.9%) in 2018. TDR for non-nucleoside reverse transcriptase inhibitors (NNRTIs) was the only class of drugs that showed a statistically significant increase ($p < 0.001$) over time with 12.7% (CI, 7.9-19.9%) in 2018. The most common NNRTI mutations were E138A with 12.0% K103N with 2.3%, followed by V179D with 2.0% and G190A with 1.7%.

Conclusion: In summary, a higher frequency of non-subtype C in the north of Mozambique was observed. It is clear that the NNRTI resistance increased over time supporting the switch of this class of ARVs in the first-line regimen with a high-genetic barrier integrase inhibitor. However, we reinforce the importance of monitoring HIVDR through surveillance, in particular, to better understand the impact of the switch to dolutegravir-based regimens.

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High Rates of Long-Term HIV RNA Re-Suppression After Virological Failure on Dolutegravir in the ADVANCE Trial

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Background: WHO Guidelines currently recommend switching to next-line antiretroviral treatment (ART) for individuals with sustained HIV RNA viral load (VL) ≥ 1000 copies/mL despite adherence counselling. However, individuals can re-suppress after adherence counselling, with no change in treatment. We compared rates of virological failure and re-suppression in the ADVANCE trial of first-line treatment in South Africa.

Material and Methods: In ADVANCE, 1053 treatment-naive individuals were randomised to TAF/FTC/DTG, TDF/FTC/DTG or TDF/FTC/EFV for 192 weeks. All unsuppressed individuals received enhanced adherence counselling within 4 weeks. The time to first VL ≤ 50 copies/mL was compared between the arms using Kaplan-Meier methods. The rate of virologic failure (defined as any VL ≥ 1000 copies/mL on or after Week 24) was then evaluated. For individuals with virological rebound (who previously suppressed), the rate of VL re-

suppression < 50 copies/mL was then compared using available follow up data to Week 192. The two DTG arms were combined for analysis (results were similar in both arms).

Results: Time to suppression < 50 copies/mL was significantly shorter in the combined DTG arms compared to the EFV arm (4-weeks [IQR 4-4] versus 12-weeks [IQR 4-14]; log-rank $p < 0.001$). The proportion with virologic failure was similar across arms (combined DTG 87/702 [12%] vs EFV 33/351 [9%]; log-rank $p = 0.343$). However, more individuals in the EFV arm did not achieve suppression prior to failure (12/33 [36%] of those with virologic failure vs 10/87 [11%]; $p = 0.002$). For individuals with rebound ≥ 1000 copies/mL, time to re-suppression was significantly shorter in the combined DTG group than in the EFV group (log-rank $p < 0.001$). There were no cases of treatment-emergent DTG resistance in the individuals with virological failure ≥ 1000 copies/mL. The HIV RNA Re-suppression rate at 48-weeks post-failure was 95% (95%CI 87-99%) in the DTG arms and 66% (95%CI 40-90%) in the EFV arm.

Conclusion: In ADVANCE, episodes of viraemia ≥ 1000 copies/mL were seen at similar rates across treatment arms. However, HIV RNA re-suppression after viraemia ≥ 1000 copies/mL was significantly more likely for individuals taking either TDF/FTC/DTG or TAF/FTC/DTG, compared with TDF/FTC/EFV. Long-term follow-up suggests individuals on continued DTG after viraemia elevation can re-suppress with enhanced adherence counselling. Important for large HIV programmes, where DTG is being rolled out.

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Initial Supplementary Dolutegravir Dose in a Second- Line Tld Regimen: Longer Term Follow-up Outcomes

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Background: Efavirenz induces drug metabolising enzymes and transporters, necessitating double dose dolutegravir when co-administered. Double dose dolutegravir is not recommended when switching from efavirenz however, efavirenz induction persists for several weeks after stopping, which could result in sub-therapeutic dolutegravir concentrations and select for resistance in people with virologic failure. At 24 weeks, the ARTIST trial showed adequate virologic suppression in adults with virologic failure on tenofovir-emtricitabine-efavirenz (TEE) switching to tenofovir-lamivudine-dolutegravir (TLD). Here we report virologic outcomes up to 48 weeks and emergence of dolutegravir resistance in a participant at 96 weeks.

Material and Methods: ARTIST is a randomised, double-blind, placebo-controlled, phase 2 trial in Khayelitsha, Cape Town, South Africa. Eligible patients had virologic failure (two consecutive plasma HIV-1 RNA ≥ 1000 copies/mL) on first-line TEE. Participants were randomly assigned (1:1) to switch to TLD with a supplementary 50 mg dolutegravir dose or placebo taken 12 hours later for the first 14 days. This study was not powered to formally compare arms. All participants have reached 48 weeks of follow-up and a subset (23%) 96 weeks.

Results: We enrolled 130 participants (65 randomised to each arm). Median age was 38 years (IQR 32–45), 69% female, median baseline HIV-1

RNA was 4.0 log₁₀ copies/mL (IQR 3.5–4.7), and 76% had baseline resistance to both tenofovir and lamivudine. By week 48, one participant died and two were lost to follow-up. At week 48, 51/63 (81%, 95% confidence interval [CI], 69–90%) in the supplementary dolutegravir arm and 55/64 (86%, 95% CI, 75–93%) in the placebo arm had HIV-1 RNA <50 copies/mL. Eleven participants met criteria for resistance testing: only one participant developed virologic rebound with integrase resistance mutation (G118R) at week 96 after being suppressed until week 72. There were 19 participants with HIV-1 RNA ≥ 50 copies/mL at week 24; 17/19 (89%) re-suppressed to HIV-1 RNA <50 copies/mL with enhanced adherence counselling.

Conclusion: Among adults switching to TLD with detectable HIV-1 RNA levels and substantial baseline tenofovir and lamivudine resistance, a high proportion achieved virologic suppression at week 48 in both arms. One participant developed dolutegravir resistance 2 years after initiation of second-line TLD.

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Assessment of Antiretroviral Therapy (ART) Outcomes Among Clients Enrolled in Adolescent Program at Lighthouse Centers of Excellence in Lilongwe, Malawi

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Background: Adolescents living with HIV (ALHIV) experience challenges with ART adherence, increasing the risk of drug resistance, disease progression, and HIV transmission. Differentiated service delivery (DSD) models have been promoted to improve ART outcomes among ALHIV. The adolescent program is a DSD model that aims to improve treatment outcomes for ALHIV, by providing adherence support in a peer-group environment. We aimed to assess ART outcomes of ALHIV enrolled in adolescent program at

Lighthouse (LH) and Martin Preuss Centre (MPC) ART clinics in Lilongwe, Malawi.

Material and Methods: We conducted a retrospective record review for adolescents aged 10 to 19 years old who initiated care at LH and MPC between January 2017 and December 2021. We compared ART outcomes between ALHIV enrolled in adolescent clubs and those in standard of care (SOC). Data was extracted from electronic medical record system (EMRS) and adolescent databases. Statistical analyses were done using Mantel Haenszel techniques and logistic regression.

Results: Overall, 866 adolescents; 549 (63.4%) females and 317 (36.6%) males; mean age 12.7 (SD±3.6), were newly initiated on ART. Of these 117 (13.5%); 62 (53.0%) females and 55 (47.0%) males; mean age 13.8, (SD±2.2) were enrolled in adolescent program. As of December 2022, 69 (59.0%) in adolescents' program were alive in care, 45 (38.5%) transferred out, 1 (0.9%) defaulted, 1 (0.9%) died, and 1(0.9%) stopped taking ART. Outcomes for adolescents in standard of care were 325 (43.4%) alive, 275 (36.7%) transfer out, 115(15.4%) default, 10 (1.3%) died, and 23 (3.1%) stopped (p value <0.001). Unique ART outcomes for adolescent program were alive in care (aOR 2.07, 95% CI 1.38- 3.10, p <0.001) and default (aOR 0.05, 95% CI 0.01-0.36, $P=0.003$). Recent viral load results were available in 82 (70.1%) of clients enrolled in adolescent program versus 434 (57.9%) in SOC. Approximately 78 (95.1%) in adolescent program were virally suppressed (<1000 copies/ml) compared to 363 (83.6%) ALHIV in SOC (aOR 3.8, 95% CI 1.35- 10.75. $P=0.01$).

Conclusion: The adolescent program DSD is associated with better retention, viral load suppression, and low default rates. This supports the need for scale up of specialized adolescent services to improve ART outcomes.

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Treatment Continuity: The Cornerstone of HIV Epidemic Control in Resource-Constrained Settings

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Background: HIV treatment continuity in Ghana is a significant public health concern. Despite increased access to antiretroviral therapy (ART) in recent years, many individuals in the country struggle to maintain continuity of care. Treatment retention is estimated about 70% within 12 months of ART initiation. This leads to poor treatment outcomes and increased virus transmission. Structural and sociocultural factors, including limited access to treatment centers, lack of transportation, stigma, discrimination, and inadequate support for adherence to medication, contribute to poor treatment continuity. This study investigated the individual-level factors associated with HIV treatment continuity in the Ahafo, Western, and Western North Regions of Ghana.

Material and Methods: This analysis used HIV treatment data from Ghana through November 2022. On January 15, 2023, 33,391 clients were extracted from records at 98 ART sites and 31,198 (73.5% females and 26.5% male) were included in the final analysis. Only clients' most recent visits were included in the analysis. The variables studied were: age, sex, healthcare facility, client type (adult or child), date of HIV treatment initiation, treatment regimen, and duration of treatment. The outcome variable was treatment continuity (ongoing or interrupted). After adjusting for client type, a multiple logistic regression model was used to analyze the data.

Results: Of the study population, the mean age was 39.4[± 14.0] years. Total cases with active HIV treatment continuity was 59%, with females slightly higher than males (60% and 56%, respectively). Factors positively associated with HIV treatment continuity were: multi-month dispensing (MMD)

(AoR [4.7:95% (4.4-4.90)]), being on LPV/r-Based regimen (AoR[9.3:95%(2.4-35.3)] or DTG-Based regimen (AoR [2.9:95% (1.5-1.7)]), and increase in age(in years) (AoR [1.0:95% (1.0-1.0)]). Conversely, males (AoR [0.7:95% (0.7-0.8)]) and EFV-Based regimen clients (AoR [0.1:95% (0.0-0.2)]) were less likely to be active.

Conclusion: The study found that HIV treatment continuity is positively associated with MMD, efficacious regimen (LPV/r-based, or DTG-based), and increasing age. On the other hand, males and EFV-based treatment clients were more likely to interrupt treatment. These findings can be used to inform strategies for improving HIV treatment retention in Ghana and the sub-regions.

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Prevalence and Predictors of Virological Failure in Indian Children With HIV on Antiretroviral Therapy

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Background: Children with HIV (CLHIV) are at a greater risk of treatment failure than adults. This study aimed to assess the prevalence of virological failure (VF) and identify various factors that could predict it in CLHIV receiving antiretroviral therapy (ART).

Material and Methods: This case-control study conducted during 2019-2021 included CLHIV aged ≤ 18 years on 1st line ART for ≥ 6 months. Viral load was assessed for all eligible subjects, who were accordingly divided into 2 groups: those with and without VF (defined as viral load >1000 copies/ml). The demographic details, ART related factors and laboratory parameters were compared among the two groups using logistic regression to assess factors associated with virological failure.

Results: Of the 266 enrolled CLHIV, 26 were already on 2nd line ART. Viral load was assessed in remaining 240 CLHIV, of whom 19 had VF (cases),

while remaining 221 did not have VF (controls). Thus, total prevalence of VF was 16.9% (45/266 children). Among the 19 CLHIV with newly detected VF, 7(36.8%) were also in immunological failure, while none had clinical failure. The factors significantly associated with VF were poor adherence (≤95% adherence in past 3 as well as 6 months) to ART (OR 10.05, 95% CI: 3.69-27.38) and educational status of child, illiterate vs literate (OR 3.03, 95% CI: 1.15-7.98). VF was not associated with age at ART initiation, gender, socioeconomic status, primary caregiver HIV and educational status, mode of transmission, ART regimen, duration of ART, change in ART regimen in the past, TB co-infection, WHO clinical stage and low baseline CD4 counts (<200 cells/μL). The prevalence of underweight (47.4% vs 21.7%) and short stature (57.9% vs 17.2%) children was significantly higher among children with VF at current assessment.

Conclusion: Adherence to ART and educational status of the child were the only factors that were significantly associated with VF in this study. Ongoing counseling to ensure strict adherence to ART is the key to successful treatment outcome in CLHIV.

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Longitudinal Analysis of Cognitive Domains Impaired in Children With HIV: Evidence From the HIV Associated Neurocognitive Disorders in Zambia Study (HANDZ)

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Background: Studies have shown that adults with Human Immunodeficiency Virus (HIV) are at increased risk for cognitive impairment despite being treated with Antiretroviral Treatment (ART). However, there are limited data on cognitive outcomes among children treated with ART in Sub-Saharan Africa and specific cognitive domains

affected by HIV are not known. This study using a prospective cohort approach, sought to determine the effects of perinatal HIV on cognitive functioning in Zambian children and to understand which domains were impaired.

Material and Methods: Two hundred and eight participants with HIV and 208 HIV-Exposed Uninfected (HEU) controls, all aged 8-17 years, were recruited Paediatric HIV Centre of Excellence (PCOE) a referral clinic in Lusaka, Zambia at routine medication refill visits; HEU participants were recruited from the community by community health workers. All participants underwent comprehensive neuropsychological testing for a period of three years. Cognitive function was also assessed with comprehensive computerized testing using a custom NIH Toolbox cognition battery which measured processing speed, executive function, attention, memory, and auditory learning. To analyse the data Group-based Trajectory Modelling (GBTM) was utilised to evaluate longitudinal trajectories of cognitive outcomes and logistical regression was used to assess specific cognitive domains affected by HIV.

Results: Children with HIV had higher cognitive functioning impairment rates compared to children without HIV (34% vs 19%; $p=0.01$). They performed significantly worse on a composite measure of cognitive function (NPZ8 score -0.19 vs. 0.22 , $p < 0.001$). HIV was strongly associated with poorer cognition at baseline (β -13.7, 95% CI -20.5 to -6.8 , $p < 0.001$). Domains impaired in children with HIV were processing speed, motor speed, recall/working memory, attention and executive function and verbal fluency. Risk factors for cognitive impairment in HIV+ were poor health by self-report, low SESI, not being in school, low weight, stunted growth, malnutrition, worst WHO stage 4, possession index, illness index, food insecurity and absence of running water in the home.

Conclusion: Children with HIV are at risk of poor cognitive outcomes, despite treatment with antiretroviral therapy, there is need to scale up early treatment and enhance nutritional education among mothers with children with HIV.

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Interim DORAVIRINE Safety Results From a Pilot Switch Study for Women of Childbearing Potential in South Africa

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Background: Women comprise almost half of people living with HIV globally, yet fewer antiretroviral treatment (ART) options are available to them particularly in low- and middle-income countries. Doravirine is a non-nucleoside reverse transcriptase inhibitor, a potential alternative for women who do not tolerate either efavirenz- or dolutegravir-based ART.

Material and Methods: Pilot open label, single-arm, single centre, phase 3, switch study, recruited 100 HIVpositive ART-experienced women in South Africa, to evaluate viral suppression, tolerability, overall safety, and efficacy of DOR/3TC/TDF.

Results: In a 24-week interim analysis, participants had: mean age of 34 (IQR 22 - 49), 100 African black females, 32% unemployed. Pre study, 54% were on efavirenz and 47% on dolutegravir-based ART, with baseline virological suppression at screening. No serious adverse events (AE's) were reported, with 16% of AE's possibly related to doravirine (97% of AE's were Grade 1), no clinically significant neuropsychiatric outcomes. Statistically significant decreases in lipid panel from baseline to week 24 ($n = 94$) include: Cholesterol -0.50 (IQR -0.60 to -0.39) $p < 0.001$; Triglycerides -0.15 (-0.23 to -0.07) $p < 0.001$; LDL -0.18 (-0.27 to -0.09) $p < 0.001$; HDL -0.25 (-0.31 to -0.19) $p < 0.001$. Glucose changes not significant. Median weight gain from baseline to week 24 ($n = 95$): 2 kg (IQR 0-5.4) in 82% of patients (95% CI: 74, 88), 3.2 kg (SD 4.4) in the efavirenz group, and 1.4 kg (SD 3.7) in the dolutegravir group. Viral suppression at week 24 ($n = 95$): 92% HIV-1 RNA < 50 copies/mL; 7% RNA 50-1000 copies/mL 1% RNA > 1000 copies/mL (at week 48 [$n = 40$]: 95%, 3%, 2% respectively). One patient developed doravirine resistance due to poor adherence. One pregnancy occurred, with good foetal outcomes.

Conclusion: Doravirine based regimes are an effective, tolerable alternative first line treatment in WCBP, with improved lipid profile, although potential long-term weight gain needs to be further investigated.

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Effectiveness of Dolutegravir + Lamivudine in Real-world Studies in People With HIV-1 With M184V/I Mutations: A Systematic Review and Meta-analysis

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Background: Historical drug resistance results are not always available when considering treatment options. In the phase 3 TANGO and SALSA trials evaluating switch to dolutegravir/lamivudine (DTG/3TC), absence of historical resistance results or presence of archived M184V/I mutations did not impact efficacy. This meta-analysis describes virologic failure (VF) using real-world data from people with HIV-1 (PWH) receiving DTG+3TC in suppressed-switch settings, with historical RNA- or archived proviral DNA-detected M184V/I mutation.

Material and Methods: A systematic literature review was performed following Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. Embase®, Ovid MEDLINE®, MEDLINE® In-Process, and Cochrane library (January 2013-March 2022) and relevant conference archives (2016-2021) were searched for real-world studies reporting virologic outcomes for PWH receiving DTG+3TC. A targeted literature review was performed to identify randomized

controlled trials (RCTs) assessing M184V/I impact on DTG+3TC efficacy. Studies were screened for populations reporting historical M184V/I mutations before DTG+3TC initiation. Fixed- and random-effects model analyses were conducted from real-world studies (primary objective). Sensitivity analyses were performed using RCT data (secondary objective).

Results: Of 3492 publications and 198 conference abstracts identified via systematic literature review, 5 real-world studies met all search criteria and were analyzed; the targeted literature review also identified 5 relevant RCTs. Low proportion of VFs and no treatment-emergent resistance mutations were reported at each time point. Random-effects model-estimated proportions (95% CI) of PWH with historical M184V/I with VF at Weeks 24, 48, and 96 were low in real-world studies (0.01 [0.00-0.14], 0.03 [0.01-0.08], and 0.04 [0.01-0.17], respectively) and RCTs at Week 48 (0.01 [0.00-0.04]); common-effects model estimates for RCTs reporting zero VF events at Weeks 24 and 96 were 0.00 (0.00-0.02) and 0.00 (0.00-0.03), respectively. Including all studies increased sample sizes without significantly impacting estimates.

Conclusion: Although overall M184V/I incidence was low, real-world studies of PWH with historical M184V/I receiving DTG+3TC identified low incidence of VF through 96 weeks, as did sensitivity analyses from RCTs. Though not indicated in PWH with known resistance mutations, this meta-analysis provides reassuring data on outcomes with DTG+3TC in PWH with incomplete history or in cases where archived M184V/I was inadvertently missed.

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Rate of and Factors Associated With of High Viral Load After Enhanced Adherence Counselling Among HIV-Positive Recipients of Care in Five Nigerian States

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Background: Enhanced Adherence Counselling (EAC) is a structured method for creating an individualized adherence support plan for HIV-positive Recipients of Care (RoCs) with elevated viral load (VL). This ensures that all RoCs meet the HIV prevention agenda of HIV Undetectable equals Untransmittable (U=U). The current HIV treatment guideline in Nigeria recommends EAC for all RoCs with elevated viral Load after the first six months on treatment. Despite best efforts, a percentage of RoCs still have high VL post-EAC. Reaching Impact, Saturation, and Epidemic Control (RISE) project funded by the United States Agency for International Development (USAID) supported 103 health Facilities (HF) in Akwa Ibom, Niger, Adamawa, Cross River and Taraba States, Nigeria to provide HIV services. The analysis assesses the rate of and factors associated with high VL post-EAC among RoCs in supported Health Facilities.

Material and Methods: The analysis used a de-identified client-level dataset of RoC with unsuppressed VL enrolled into EAC program at RISE-supported HF. A log binomial regression model was used to report crude and adjusted risk ratio with 95% Confidence Intervals (95% CI) and a p-value of 0.05 to determine the association between clinical characteristics and suppression of VL post-EAC in RISE program (July 2020 –June 2021).

Results: Thirty-six percent (2001/5,521) RoCs with VL > 1000 copies/ml completed EAC. 290(26%) out of 1,117 post-EAC VL results returned were unsuppressed. On bivariate analysis, age group 11-

19 years (p=0.0059), community ART enrollment (p=0.034), second-line ART regimen (p<0.001), and duration on ART >10 years (p=0.0076) were significantly associated with high VL post-EAC. On multivariable analysis, the second-line ART regimen (p<0.001) was a significant predictor of viral load non-suppression. Age greater than 30 years and RoCs on the 2nd line regimen had a 50% risk of viral load non-suppression relative to RoCs on the first-line regimen(p<0.001).

Conclusion: One in four RoC had unsuppressed VL post-EAC; with age groups greater than 30 years and second-line ART regimen as predicting factors. Clinicians should individualize EAC sessions based on these factors to optimize the effectiveness of HIV treatment. Peer-led support groups for Rocs in this group should be encouraged to improve treatment outcomes.

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Factors Associated With Achieving Viral Suppression Among People Living With HIV in Ghana: A Retrospective Analysis

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Background: Viral load (VL) suppression remains a challenge to achieving epidemic control in most sub-Saharan Africa. Although Ghana made significant progress in the third 95 from 68% in 2019 to 79% in 2022, further insight into the factors associated with VL suppression is critical to inform clinical counseling and care approaches, client-level VL literacy and demand generation activities. This study investigates the factors associated with viral suppression among people living with HIV (PLHIV), using retrospective data from a large cohort.

Material and Methods: We conducted a retrospective analysis of 14,777 HIV clients with viral loads results on the National HIV database system (E-tracker). We extracted two years of

clients' data (2020-2022) on the 15th January, 2023 for Western, Western North and Ahafo regions. A stepwise regression model was used to determine factors associated with viral load suppression among HIV clients with VL results. The outcome variable was VL status (suppressed, unsuppressed).

Results: Among the 14,777 clients with VL results, 76% were females. The mean age of the study population was 42. From the results, 13,116 representing 88% of the clients were virally suppressed (<1000 copies/mL). Clients who were currently active on ART were 1.8 times more likely to be virally suppressed compared to those who interrupted treatment (OR=1.8, CI=1.6-2, p<0.001). Clients on multi-month dispensing (MMD) were 2.3 times more likely to be virally suppressed compared to single month dispensing (OR=2.6, CI=2.0-2.5, p<0.001). Clients-initiated at hospitals had higher odds of experiencing viral load suppression than clients initiated at lower level facilities, i.e., clinics [(OR=1.7, CI=1.1-2.6, p=0.02)]. For every one-year increase in age, there was a 1.7 timely increase in VL suppression (OR=1.0, CI=1.0-1.1, p<0.001). Males were 0.8 times less likely to be virally suppressed (OR=0.8, CI=0.7-0.9, p<0.001).

Conclusion: Our study found that uninterrupted ART, hospital initiation, MMD, and age were positively associated with VL suppression among HIV clients, while being male was negatively associated. Scale-up of Ghana's differentiated service delivery policy, which provides for MMD scale up and addresses the inherent challenges faced by sub populations including males and younger clients, is key to achieving VL suppression nationwide.

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Viral Response and Pre-treatment Drug Resistance Among Early Treated HIV Perinatally Infected Infants: Description of a Cohort in Southern Mozambique

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Background: Early initiation of antiretroviral therapy (ART) and adherence to achieve viral load suppression (VLS) are crucial for reducing morbidity and mortality of perinatally HIV-infected infants. Maintaining undetectable viremia also prevents ART resistance development, that may be a major constraint in Africa, where available drugs for younger patients are limited and the first line regime must be preserved as much as possible.

Material and Methods: This is a descriptive cohort study of 39 HIV perinatally infected infants, who started treatment with AZT or ABC/3TC/LPV-ritonavir at one month of life in southern Mozambique in 2017 and received monthly follow up visits including adherence support. We described the viral response over 2 years of follow up. VLS below 400 copies/mL, sustained VLS and viral rebound using a Kaplan–Meier estimator. Pre-treatment antiretroviral drug transmitted resistance was assessed for a sub-group of infants without VLS.

Results: In total, 61% of infants reached VLS, 50% had a rebound. The cumulative probability of VLS was 36%, 51%, and 69% at 6, 12 and 24 months of treatment, respectively. The median duration of VLS was 7.4 months (IQR 12.6) and the cumulative probability of rebound at 6 months was 30%. Two

(2/12 -17%) infants without VLS had pre-treatment resistance to ARV used in their regimen: one had high resistance to 3TC and low resistance to ABC, one child had high resistance to 3TC and ABC; 11/12 (92%) had resistance to NVP and EFV.

Conclusion: Our findings point to a low rate of VLS and high rate of viral rebound in infancy, likely attributable to suboptimal adherence to treatment. More frequent viral response monitoring in this age group is advisable to identify infants with rebound and offer timely adherence support and also to preserve new drugs from emerging resistance. A deeper understanding of factors associated with ART adherence among caregivers is key to tailor the psychosocial support model of care to early infancy and to enable caregivers and their families building a strong adherence behavior throughout the continuum of ART care.

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Virtual Monitoring of Adverse Drug Reactions among People Living with HIV Accessing Treatment in Benue State, Nigeria

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Background: The essence of monitoring and reporting Adverse Drug Reactions (ADR) is to ensure medication safety among the clients. The push for antiretroviral therapy optimization necessitated close monitoring of clients to ensure good adherence. Under-reporting of adverse drug reactions constitutes a major barrier to the pharmacovigilance surveillance system. We aimed to describe the proactive approach in virtually monitoring adverse drugs among People Living with HIV accessing treatment in Benue State.

Material and Methods: This study was a retrospective review of clients who were virtually contacted for ADR monitoring between June 2022 and December 2022 and the data was collated

using a checklist across ninety-one health facilities. In Virtual ADR monitoring, pharmacovigilance focal persons remotely contacted the clients via phone calls within the first 24 and 72 hours, week 1 and months 1 to 3 of ART initiation, change in regimen or introduction of a new drug. We conducted virtual ADR monitoring among naive clients, Paediatrics and Adolescents, and pregnant women. We performed simple descriptive statistics and presented the ADR outcomes across the category of patients monitored in proportion and percentages.

Results: A total of 3910 clients were monitored virtually. These were Paediatrics (0-9yrs), 159 (4%), adolescents (10-19yrs), 161 (4%), young people (20-24yrs), 234 (6%), non-pregnant females, 2045 (52%), pregnant females, 41 (1%) and adult males, 1270 (32%). 91 out of 100 (91%) facilities mapped for this exercise reported remote ADR monitoring in which 343 cases were identified and comprised 121 and 93 reported after 24 and 72 hours, 85 at week 1, and 27, 11, and 6 at months 1, 2 and 3 respectively. The commonly reported ADRs were allergic reactions, headaches, and weakness, mostly due to Tenofovir/Lamivudine/Dolutegravir fixed-dose combination and were mild to moderate.

Conclusion: Findings from this study revealed a high rate of ADR reporting among clients by Health Care Workers. A scale-up of this approach to more facilities will help to strengthen pharmacovigilance surveillance among patients.

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Virtual Service Delivery the Next Frontier for Healthcare: A Case of ZNNP+ Kutabila Virtual Platform

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Background: In response to complaints from members reporting difficulties in accessing HIV services during the COVID-19 pandemic, the Zimbabwe National Network of People Living with

HIV (ZNNP+) developed an integrated virtual platform known as the Kutabila "Echos" Platform to ensure service continuity in challenging times. This study's objective was to assess the feasibility of using mental health and medical specialists in offering virtual services to PLHIV.

Material and Methods: The study was a cross-sectional analysis of virtual services offered to PLHIV between 01 October 2022 and 31 December 2022. PLHIV from any part of the country made calls free of charge to a call centre manned by 10 provincial-based agents. Recipients of Care (RoC) who needed medical and mental health services were referred virtually to a mental health or medical specialist. The system automatically notified the specialists of new cases available. The specialist would contact the RoC by phone for further consultation. All the interactions were documented in the Kutabila database. This data was downloaded to excel for descriptive analysis.

Results: The call centre recorded 917 calls, 662 (72%) females and 255 (28%) males, 817 (89%) required referrals to a specialist whilst 11% reported quality-of-service monitoring issues. The respondents' median age was 43 years (IQR, 37-51). A significant number 12% reported multiple issues. The main issues were classified into three categories, with the results as follows: medical consultations (79%), mental health (16%), and SHRH (5%). The specialists were able to resolve 620 (76%) of the cases. The inability to close all cases was due to network issues and the need for multiple counselling sessions.

Conclusion: We've shown that low-cost virtual platforms can deliver high-quality services just like traditional face-to-face consultations. In the face of uncertainty and shortages of health care workers strong forward-thinking innovations are required to minimize treatment interruptions for HIV services. The study results demonstrated that virtual platforms have the potential to bring HIV services closer to recipients of care and bridge the gap caused by healthcare worker shortages in remote facilities.

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Piloting Integrated Community HIV Prevention and Treatment Differentiated Service Delivery for Persons With Disabilities (PWD) – Promising Results From AIDS Information Centre (AIC) Uganda

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Background: PWD irrespective of the nature of disability may engage in risky sexual behaviours including commercial sex work predisposing them to HIV. PWD on ART experience adherence challenges due to double stigma, relative immobility to access services among others. Tailored community service delivery models are essential to serve these communities. A PEPFAR-funded one year 'Reaching out to people with disabilities' project was implemented through AIC Kampala to increase access to HIV/TB/SRHR/GBV services using a PWD caretaker-peer led model.

Material and Methods: 18 Trained PWD caretakers and peers with functional physical, visual, hearing, and mental disabilities were selected with support of local leaders in 3 divisions of Kampala city. These were assigned to collaborating health facilities and tasked to mobilize PWD for services at community integrated HIV outreaches, and conduct home visits for psychosocial support.

Results: 642 PWD with physical 256(39.9%), hearing 249(38.8%), visual 86(13.4%) and mental 38(5.9%) disabilities, little people 13(2%) and their caretakers were reached between April-September 2022. 21(4.6%) of 460 tested HIV positive and linked to care. 16(76%) new positives were females aged 35-39. 35 PWD female sex workers were identified. 82 Caretakers, PWD and their partners received PrEP; 68 PWD diagnosed with STIs received treatment. 12000 condoms were issued and convenient community condom distribution points established. Treatment interruptions were addressed through home visits for ART refills (59),

viral load blood draws (81), and counselling (112) for retention. 112(17.4%) GBV cases identified (sexual 38(34%), physical 49(43.7%), psychological 25(22.3%)) received appropriate case management. Twice as many females experienced SGBV than men while men experienced more physical GBV. 5 PWD diagnosed with TB were referred for treatment and 16 PWD linked to livelihood programs. Additional findings indicated PWD had limited knowledge on HIV prevention; Standard condom dispensers limit access for PWD; blind PWD preferred female to male condoms; despite high rates of GBV, PWD weren't aware of available pathways for support; the PWD Caretaker-Peer model enabled relatively immobile PWD access HIV services.

Conclusion: Targeted integrated HIV/TB/GBV/SRH service delivery and awareness campaigns for PWD using a PWD Caretaker-Peer model promotes uptake of services and should be adopted in disability health programming.

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Antiretroviral Treatment Failure and Associated Risk Factors Among People Living With HIV After Transition to a First-Line, Dolutegravir-Based Treatment in Gaza Province, Mozambique

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Background: The World Health Organization recommends treatment with dolutegravir (DTG) for first- and second-line antiretroviral therapy (ART). Information about ART failure following a switch to

DTG is limited. We describe frequency and risk factors associated with virologic failure (VF) and risk factors among patients on first-line ART with unsuppressed viral load (VL) after transitioning to DTG.

Material and Methods: A cross-sectional study was conducted in seven health facilities in Gaza Province, Mozambique between August 2021 and February 2022. Participants were eligible if >18-years-old on first-line ART for at least 12 months before transition to a DTG-based regimen and with an unsuppressed VL test (>1,000 copies/mL) at least six months after transition. Participants were enrolled when they returned for a repeat VL test after completing at least three enhanced adherence counseling (EAC) visits. VF was defined as having repeat VL test>1,000 copies/mL. Data were collected through a single participant interview and abstraction from facility charts. A logistic regression model was used to identify factors associated with VF.

Results: A total of 712 participants were enrolled (mean age of 40.3 years, 70.7% female). Before switching to DTG, 570 participants (80.1%) started on an efavirenz-based treatment, and 142 participants (19.9%) started on nevirapine. A total of 572 participants (80.3%) were on ART for >4 years. Among 508 patients who also had a VL test before the switch to DTG, 170 (33.5%) were unsuppressed. The mean time between first unsuppressed VL after the switch and second follow-up VL was 4.9 months. VF was identified in 213 patients (30.0%) and was associated with unsuppressed VL prior to DTG transition (AOR:2.04, p<0.001) and younger age at ART initiation (AOR:1.03, p=0.005).

Conclusion: Our results show a high rate of VF after EAC sessions among those who switched to DTG, suggesting either viral resistance or continuing challenges with adherence. Unsuppressed VL prior to switch to DTG and younger age at ART initiation were predictor variables for VF. The study underscores the need for close VL monitoring for early identification and management of patients with elevated VL and need for more evidence regarding potential impact of DTG resistance on VF in Mozambique.

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Theoretical Preferences for Long-Acting Injectable Art Among Mobile Men Living With HIV in Malawi: A Qualitative Study

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Background: Long-acting injectable (LAI) antiretroviral medications may be an ideal treatment option for highly mobile people, including mobile men living with HIV (MLHIV) in sub-Saharan Africa, who experience challenges with ART engagement. We explore mobile MLHIV preferences for a theoretical LAI option in Malawi.

Material and Methods: We conducted a qualitative sub-study embedded within two trials (ENGAGE and IDEAL) aimed at improving ART outcomes among MLHIV in 24 health facilities in Malawi. Eligibility criteria were: MLHIV; >15 years; and not actively on ART at time of enrollment. We conducted in-depth interviews with men who self-reported being mobile during the 6-month study period (defined as at least one trip of three nights or more), derived from trial follow-up surveys. We used a stratified sampling frame and randomly selected mobile men by study arm, geographic region, and self-reported ART experience during the trial (i.e., started and retained on ART during parent trial or not). Interviews included a description of a theoretical, bimonthly LAI and questions about client preference for LAI or oral ART. Interviews were translated, transcribed, coded in Atlas.ti, and analyzed using framework analysis.

Results: We interviewed 29 mobile MLHIV from 1 July to 30 August 2022, median age 36 (IQR:31-41); 34% attended any secondary school; all had previously initiated oral ART. Nearly all participants (26/29) expressed a theoretical preference for LAI over daily oral ART because they believed LAI would reduce the risk of forgetting pills (n=16), general pill fatigue (n=6), unwanted disclosure (n=5), and

logistical challenges of traveling with oral ART (n=4). Of the three men who preferred oral ART, the most common reason was fear of side effects from a new medication. Most men were not concerned about injection site reactions (19/26); however, some (7/26) said long-lasting pain might change their preference, especially if it prevented them from working.

Conclusion: Mobile MLHIV who experienced treatment interruption expressed strong theoretical preferences for LAI ART. Further research is needed on how to expand access to LAIs, including those in resource-constrained settings, and how to best implement LAI among harder to reach populations such as mobile men who struggle with daily oral ART.

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Uptake of Optimal Antiretroviral Treatment Regimens and Viral Load Suppression Among Pediatric and Adolescent Living With HIV in Nigeria

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Background: In Nigeria, there are missed opportunities to optimize children and adolescents living with HIV (CALHIV) on antiretroviral treatment (ART) using weight-based dosing. This is largely due to gaps in prescription practices (e.g., incorrect dosing, inappropriate regimens), inadequate data use for decision making, and suboptimal treatment literacy amongst caregivers and adolescent clients. We assessed the percent change of treatment optimization and viral load suppression rates in CALHIV after the implementation of interventions to improve awareness and catalyze optimal ART

uptake among healthcare workers (HCWs), caregivers, and adolescent clients in Nigeria.

Material and Methods: Between February and March 2020, the Faith-based Action for Scaling up Testing and Treatment for Epidemic Response (FASTER) project trained HCWs in supported health facilities on weight-based dosing, provided dosing wheels and job aids to guide treatment optimization. Data on optimal ART uptake, using monthly weight-band data, and viral load suppression (VLS) rates, was collected across 58 health facilities. Patient ART data by weight band for CALHIV aged 0-19 years was collected monthly from March 2020-December 2021 and VL data for CALHIV aged 0-19 years was collected monthly from October 2020-September 2021. We calculated the percent change from baseline to the final month of data collection for CALHIV across three weight bands (3-19.9kg, 20-29.9kg, and ≥30kg) for treatment optimization and three age bands (0-9, 10-14, 15-19) years for VLS.

Results: From March 2020-December 2021, uptake of optimal regimens overall increased from 58% to 96% among 3,147 CALHIV. Uptake increased from 69% to 99% (932) CALHIV weighing 3-19.9kg, from 10% to 87% (723) CALHIV weighing 20.0-29.9kg, and from 74% to 98% (1,492) CALHIV weighing >30kg. Overall VLS rates increased from 76% to 86% of 7,933 tests among CALHIV during October 2020-September 2021. VLS increased from 72% to 84% (2088) among 0-9 years, from 76% to 85% (3,111) among 10-14 years, and from 79% to 90% (2,734) among 15-19 years.

Conclusion: In the context of weight-based regimen optimization, site level activities targeting CALHIV were associated with increased uptake of weight-based optimal ART and increased rates of VLS in CALHIV. Additionally, strengthening existing facility patient tracking/referral system may contribute to increased optimal ARV uptake.

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Resilience in Managing Unsuppressed Viral Load During COVID-19 Spike in Zambia: Catholic Relief Services' Experience With Viremia Clinics' Introduction

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Background: Persistent unsuppressed viral load (VL) among HIV infected individuals may lead to HIV transmission, treatment failure, resurgence of HIV co-morbidities and early mortality. Managing unsuppressed VL during the Covid-19 spike in 2020 was challenging due to public health restrictions coupled with antiretroviral therapy (ART) recipients of care's fear of being infected during regular visits in health facilities. During the Covid-19 spike, we recorded low performances in the management of unsuppressed VL. The enrolment and completion rates of enhance adherence counselling (EAC) were low. In addition, the VL samples re-testing post EAC, the VL results receipts, the HIV re-suppression and switching to second line ART rate were suboptimal in 2020. We aim at demonstrating the Catholic Relief Services (CRS) resilience in managing unsuppressed VL amidst Covid-19 spike in Zambia.

Material and Methods: We built capacity in multidisciplinary teams (MDTs) in managing unsuppressed VL using the viremia clinics. We provided both virtual (through the phone calls) and in-person EAC sessions. After successful EAC sessions (3 months minimum), we were collecting VL samples for re-testing. We maintained the initial ART regimens for recipients of care who successfully re-suppressed. We switched to potent second line regimens those who didn't re-suppress after EAC's completion.

Results: During the introduction of viremia clinics in FY21, we recorded increased rates in EAC enrolment (63% to 73%), EAC completion (38% to 49%), re-testing of VL post-EAC (69% to 92%). In addition, we achieved 74% VL re-suppression rate (from 65% in FY20). However, we recorded a

decrease in switching from first to second line ART regimens (from 46% to 35%).

Conclusion: The MDT viremia clinics should be scaled up in managing unsuppressed VL. Efforts are needed in improving the correct and timely switching to second line ART regimens for those who fail to re-suppress.

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Clinical Outcomes Among Young Adults Living With HIV Post Transition From Pediatric to Adult Care at Coptic Hospital

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Background: Adolescents living with HIV (ALHIV) who transition from pediatric care to adult care face numerous challenges that increase the risk of interruption in treatment resulting in increased risk of morbidity and mortality. We conducted a longitudinal analysis to determine the outcomes of ALHIV after age-appropriate transition at ≥ 20 years to adult clinic.

Material and Methods: The analysis focused on children aged 5 to 15 years at enrolment into HIV care between 2006 and 2012 and were expected to have transitioned to adult HIV clinic. Clinical outcomes were assessed in November 2022, after a mid-period of 13 years on ART. Variables described included: demographic characteristics, CD4 count, valid viral load (VL) results done within the last 12 months from the date of analysis, retention status and current antiretroviral regimen. Data was extracted and analyzed in tables using SPSS and PowerBI.

Results: A total of 165 CALHIV were analyzed where all had a baseline CD4 result. Out of 165, 87 (53%) had a baseline CD4 count of < 200 cells/mm³ and 78 (47%) had CD4 count of ≥ 200 cells/mm³. The overall retention was 81% (133/165), with 95 (58%) being active in care at the initiating facility, and 38 (54%) transferred to another facility. Of 34 not

active in care, 15 had died, and 17 were lost to follow-up. A total of 63 (66%) had a valid VL result with a VL suppression (VL < 1000 copies/ml) rate of 94% (59). Most clients were on first line-based ART regimen, Tenofovir / Lamivudine / Dolutegravir 60 (63%) while 35 (37%) were on second line-based ART regimen, Tenofovir / Lamivudine / Atazanavir / Ritonavir as of November 2022.

Conclusion: After a decade of consistent ART follow-up, ART retention for clients transitioning from pediatric to adult clinic was 81%, viral suppression was 94%, and 63% were still on first line ART regimen. Timely, consistent and quality clinical ART management for CALHIV has demonstrated better clinical outcomes post transition to adult care.

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Orofacial Lesions Associated With Long-Term Highly Active Antiretroviral Therapy Among HIV-Seropositive Adults in Ibadan, Nigeria

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Background: Highly active antiretroviral therapy (HAART) has contributed to a reduction in HIV related oral lesions and improved quality of life among HIV seropositive patients. However, the therapy is not without its side effects. This study was aimed at assessing the self-reported oro-facial manifestations due to long term use of HAART, as well as the pattern of oral lesions on examination.

Material and Methods: This was a cross-sectional study conducted among HIV seropositive adult patients in Ibadan, who had been on HAART for at least two years. Data were collected using an interviewer administered questionnaire. Clinical diagnosis of HIV-related oral lesions was made according to the EC-Clearinghouse criteria. Data analysis was done using SPSS version 25.

Results: The study participants comprised of 227 HIV seropositive patients who were HAART experienced, with 54 (24%) males and 173 (76%) females. Their mean age (\pm SD) was 44.7 (\pm 9.4) years. The participants CD4 count ranged from 13-1338cells/mm³, with a median count of 341cells/mm³. About half (45%) of the participants noted one or more oro-facial changes since they commenced HAART. These oral changes included dryness of mouth, burning sensation, abnormal taste, melanotic hyperpigmentation, oral thrush, ulcers, and parotid swelling. Most of those who reported oral changes had been on HAART over 10 years ($p=0.03$), and the changes were more reported among those on the first-line regimen.

Conclusion: Melanotic hyperpigmentation was the most common oral lesion found and burning mouth syndrome was the most commonly reported complain among HIV seropositive adults who are on long-term HAART.

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Viral Suppression in the Era of Transition to Dolutegravir-Based Therapy in Cameroon: Children at High Risk of Virological Failure

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Background: Transition to Dolutegravir (DTG)-based antiretroviral therapy (ART) may improve virological response (VR) in sub-Saharan Africa. Because VR may vary by age, understanding ART response across age-range may inform interventions on ART program. Our objective was to

compare VR between children, adolescents and adults in the Cameroonian context.

Material and Methods: A comparative study was conducted from January 2021 to May 2022 amongst ART-experienced patients received at the Chantal BIYA International Reference Centre for HIV/AIDS prevention and management in Yaoundé-Cameroon for plasma viral load (PVL) monitoring. PVL was measured on Abbott m2000RT-PCR as per manufacturer's instructions. VR was defined as viral suppression (VL< 1000 copies/mL) and viral undetectability (VL< 50 copies/mL). Data were analyzed by SPSS v.20.0, with $p<0.05$ considered as significant.

Results: A total of 9034 patients, 72.8% female, were enrolled (8565 adults, 227 adolescents, 222 children); 1618 were on NNRTI-based, 299 on PI-based, and 7118 on DTG based ART (82 children, 198 adolescents, 6824 adults). Median (IQR) duration on ART was 24 (12-72) months. Overall, VS was 89.9% (95% CI: 89.2-90.5) and viral undetectability was 75.8% (95% CI 74.8-76.7). Following ART-regimen, VS on NNRTI-based, PI/r-based, and DTG-based therapy was respectively 86.5%, 60.2% and 91.8%, $p<0.0001$. Following ART-duration, VS was respectively 90.4% (M12), 87.8% (M24), 89.1% (M36), and 90.0% (\geq M48), $p<0.0001$. Following gender, VS was 91.0% (females) versus 87.1% (males), $p<0.0001$. Following age, VS was 65.2% (children), 74.4% (adolescents), and 90.9% (adults), $p<0.0001$. Following multivariate analysis, predictors of VS were adults, females, TLD regimens, and cART duration >24 months ($p<0.05$).

Conclusion: In Cameroon, ART response indicates encouraging rates of VS (about 9/10) and viral undetectability (about 3/4), driven essentially by access to TLD-based regimens in the adult populations. However, ART response was very poor in children, underscoring the need for scaling-up pediatric DTG-based regimens.

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Correlates of HIV Disclosure by Adult Caregivers to Children Living With HIV: A Programmatic Multi-Center Evaluation in Four Nigerian States

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Background: Scaled-up access to suppressive ART has improved treatment outcomes of children living with HIV (CLHIV). Disclosure remains an essential step toward long-term HIV management and optimal quality of life among CLHIV. We investigated factors influencing HIV status disclosure among caregivers to CLHIV in four Nigerian states.

Material and Methods: A cross-sectional study was conducted in March-April 2022 among randomly-selected adult caregivers of CLHIV aged 5-19 years receiving care at health facilities in the Federal Capital Territory, Katsina, Nasarawa and Rivers. An interviewer-based semi-structured questionnaire captured data on caregiver/CLHIV socio-demographics and CLHIV clinical data. Binary logistic regression was performed to identify predictors of HIV disclosure, categorized as full (includes using the term HIV), partial (informing child that they have a chronic illness), or none.

Results: A total of 887 caregivers of CLHIV were interviewed at 35 facilities. Mean age was 38.3 (SD 11.3) years; most caregivers (70.2%) were female, 55.1% and 20.0% were biological mothers and fathers of CLHIV respectively, and 65% of caregivers were themselves living with HIV. Caregivers were interviewed about 887 wards: 13.6% under-5, 61.2% age 5-14 and 25.1% age 15-19 years. Among caregiver respondents, disclosure rate to CLHIV was 60.4% (43% full; 17.5% partial), and 12.3%, 45.1% and 39.6% to CLHIV aged 5-9, 10-14, and 15-19 years, respectively. For CLHIV, being age 5-14 years (aOR=9.0, 95%CI=4.7-17.1) and 15-19 years

(aOR=156.9, 95%CI=64.9-379.5) vs <5 years, in school (aOR=2.47, 95%CI=1.10-5.56) and having a non-related guardian (aOR=5.77, 95%CI=1.2-27.7), was significantly associated with the likelihood of caregivers disclosing their wards' HIV status to them.

Conclusion: Findings from this study show that school attendance, age, and caregiver relationship to a child affect the disclosure rate of CLHIV. This underscores the need to develop tailored interventions that will improve CLHIV disclosure among non-related caregivers such as client-centered, culturally, and age-appropriate disclosure counseling support. Lastly, a multivariate analysis to further evaluate these correlates is warranted.

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Assessment of Treatment Outcomes of HIV Positives Transitioned From Tenofovir/Lamivudine/Efavirenz to Dolutegravir Regimen Combination in a Nigerian Tertiary Hospital.

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Background: Due to introduction of dolutegravir as a replacement of nevirapine or efavirenz in a fixed dose combination with Tenofovir/Lamivudine, as the preferred first line option for prevention and treatment of HIV infection, there is a need to do the assessment of the treatment outcomes of the new Tenofovir/Lamivudine/Dolutegravir (TLD) regimen at the Nigerian tertiary hospital.

Material and Methods: This retrospective study used data drawn from treatment register of patients who transitioned from Tenofovir/Lamivudine/Efavirenz (TLE) to TLD between January 2016 and January 2018. The data extracted was analyzed using SPSS statistical software version 20. Descriptive statistics were

used to describe categorical and continuous variables. Chi square test statistics was done to test for association between categorical variables and treatment outcomes and level of significance was set at $p < 0.05$.

Results: A total of 358 cases were reviewed. Their mean age was 44.29 ± 11.5 years and majority 267 (74.6%) were females. Viral load suppression of ≤ 1000 copies/ml was achieved in 313 (87.4%) of cases while on TLE but increased to 339 (94.7%) when transitioned to TLD within the period of study. Also 36.3% had high CD4 count while on TLE, this increased to 67.3% of those with high CD4 within the period of study. There was a statistically significant difference between mean CD4 count while using TLE and when transitioned to TLD ($t=31.601$; p -value- 0.001). Treatment outcome was greatly improved in terms of virologic, immunologic and clinical presentation among patients transitioned from TDF/3TC/EFV to TDF/3TC/DTG in this study.

Conclusion: The outcome of this work supports and encourages the use of TDF/3TC/DTG as the preferred first line regimen in HIV treatment for patient's maximum clinical benefit. This will be communicated to all stakeholders and policy makers involved in the provision of effective health care service delivery in HIV management.

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Favorable Effect of Differentiated Models of Care on Retention in Care and Viral Suppression Among Adults on Antiretroviral Treatment: Retrospective Cohort Study in Zambézia Province, Mozambique (2016-2021)

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Background: Differentiated service delivery (DSD) models have been implemented in Mozambique to de-congest health facilities, and promote retention of persons living with HIV (PLHIV) in care. This study evaluated the effects of two frequently used DSD models (Community Adherence Groups [CAG] and Three Multi-Month Dispensing [3MMD]) on retention in care and viral suppression.

Material and Methods: A cohort study using routine patient-level data was implemented among adults (≥ 15 years) enrolled in ART services between October 2016 and September 2020 and eligible for the DSD models, in 147 health facilities (HF) in Zambézia Province, Mozambique. Propensity score matching was used to match PLHIV in CAG to those in 3MMD. Conditional logistic regression measured associations of DSD models with 12-month retention (pick-up within 59 days after last scheduled visit) and with viral suppression (viral load $< 1,000$ copies/mL, measured within one-year post-DSD enrollment), adjusting by HF location (rural/urban), DSD model and their interaction.

Results: Data from 46766 PLHIV were collected; 31340 (67%) female, 30512 (65%) registered at rural HF, median age at DSD eligibility 30 years (IQR 24-38). From this cohort, 38118 (82%) PLHIV enrolled in 3MMD, 3129 (7%) in CAG; 5527 (12%) were not included in any DSD. A matched population of 4936 PLHIV were included in the retention analysis, and 1610 in the viral suppression analysis. The overall 12-month retention was 93% and 94% in the 3MMD and CAG groups, respectively. Viral suppression was 86% overall, 83% for 3MMD and 89% for CAG. In rural areas, the odds of being retained at 12 months was 1.5 times higher for PLHIV in CAG compared to 3MMD (OR 1.50 [95%CI:1.14-1.97], $p=0.003$). PLHIV in CAG in rural areas also had higher odds of being virally suppressed (OR 2.03 [95%CI:1.43-2.88], $p < 0.001$). There were no differences among PLHIV in urban areas.

Conclusion: In this cohort, most PLHIV were enrolled in the quarterly dispensation model. Retention in care and viral suppression was high for both models, but advantages were seen for the CAG model among PLHIV attended in rural areas. Targeted models considering area of service delivery can contribute to maintaining PLHIV in the continuum of care.

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Early Outcomes of Successful Integration of Mental Health Screening Into Routine HIV Care in Malawi

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Background: Mental health (MH) disorders are highly prevalent among people living with HIV (PLHIV) and can have negative impact on antiretroviral therapy (ART) outcomes. Malawi's Ministry of Health introduced MH screening in national HIV management guidelines in December 2021. We describe early experience with integrated MH screening at ART clinics that have scarce human resources and limited capacity of specialist MH units.

Material and Methods: Partners in Hope is a Malawian, Christian, non-governmental, medical organization and PEPFAR/USAID clinical implementing partner. We trained ART staff in 15 facilities to use the PHQ-9 (depression) and AUDIT (harmful alcohol use) screening instruments, developed MH registers for tracking screening results and referrals, and engaged existing MH referral units. Based on screening results, ART clients received counseling by lay cadre staff (for mild disorders) or intensive counseling by trained psych-social counselors and referrals to specialist MH units (for moderate to severe disorders).

Results: From April through November 2022, we screened 3,607 ART clients, only from priority

groups defined as follows: returning to care after defaulting (50%); new ART initiation (38%); viral load >1000 copies/mL (12%). 59% were female and 14% were aged 12-19 years. Screening coverage was 83% (3,607/4,356) among the 3 priority groups. PHQ-9 score results according to severity categories were: None (73%); Minimal (10%); Mild (10%); Moderate-severe (1%); Severe (1%). Categorized AUDIT risk scores were: Low (91%); Increasing (6%); Higher (2%); Possible dependence (%). Those in the two highest categories of PHQ-9-scores (1.9%; n=67) and AUDIT-scores (3.0%; n=107) were eligible for specialist review (Figure). 99% of these eligible individuals were referred to specialist MH units, which was on average 9.3 individuals/month/specialist MH unit.

Conclusion: Thorough preparation led to high MH screening coverage among ART priority groups in Malawi. The burden of cases requiring referral to specialist MH units was limited. In our setting, MH screening was feasible at ART clinics with PEPFAR support. Way forward: Next steps include studying the impact of integrated MH screening on ART outcomes (retention; viral suppression) and scaling up integrated MH screening to all ART clinics.

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Evaluation of Archived Drug Resistance Mutations in HIV-1 DNA Among Vertically Infected Adolescents Under Antiretroviral Treatment in Cameroon: Findings During the COVID-19 Pandemic

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Background: With the success of antiretroviral therapy (ART), children born with HIV are growing toward adolescence. However, frequent non-adherence in adolescents living with HIV (ALHIV) leads to drug resistance mutations DRMs. Hence, within the frame of the COVID-19 pandemic, we aimed to evaluate the patterns of Archive-DRMs in vertically infected ALHIV and assess their immunity/diagnosis to SARS-CoV-2.

Material and Methods: A comparative study was conducted amongst COVID-19 unvaccinated ALHIV receiving ART in Yaoundé-Cameroon over the period October 2021-March 2022. Plasma HIV-RNA was measured using Abbott® m2000rt; HIV-1 genotyping was performed on HIV-1 DNA and ADRMs were interpreted using HIVdb.v9.0.1. Patterns of HIV-1 ADRMs were compared between viremic ($\geq 1.60 \log_{10}$ copies HIV-1 RNA/ml) and non-viremic ($< 1.60 \log_{10}$ copies HIV-1 RNA/ml) individuals. SARS-CoV-2 antibodies were assessed on whole-blood using Abbott Panbio COVID-19 IgG/IgM rapid-test and COVID-19 PCR test was performed using nasopharyngeal swab samples.

Results: Of the 60 ALHIV (aged 17 [16-19] years, 51.6% female), median ART-duration was 14 [12-16] years; 31/55 (56.3%) were exposed to NNRTI-based first-line ART (among whom 19/31 transitioned to dolutegravir-based in 2020) and 24/55 (43.6%) were on second-line ART. Forty-two out of sixty (70.0%) were non-viremic; 43/60 (71.6%) were successfully sequenced. Overall ADRMs rate was 62.7% (27/43), with 69.2% (9/13) of viremic affected vs. 60.0% (18/30) of non-viremic ($p=0.56$). NNRTI-ADRM were significantly higher amongst viremic ALHIV (69.2% vs. 46.7%, $p=0.030$). Regarding immunity, those with CD4-nadir < 350 cells/mm³ had significantly higher rates of ADRMs (aOR:3.20 [1.36-95.53], $p=0.03$). Regarding COVID-19 immunity, overall SARS-CoV-2 IgG seropositivity was 28.3% (17/60) and IgM 0% (0/60); in particular, those with CD4-nadir ≥ 350 cells/mm³ had higher odds of SARS-CoV-2 IgG seropositivity (OR:7.85 [2.03-30.28], $p<0.01$). No significant association was found between SARS-CoV-2 IgG seropositivity and HIV-RNA (non-viremic: 33.3%; viremic: 16.7%; $p=0.18$). SARS-CoV-2 RNA prevalence was 4.5% (2/44), with low-levels (CT >30), and IgG-seropositive (2/2).

Conclusion: In the frame of virological success, the majority of ALHIV harbor ADRMs, essentially driven by NNRTI-mutations, and low CD4-nadir. With the

current pandemic, about one-third of ALHIV have been previously exposed to SARS-CoV-2. These findings underscore the use of NNRTI-sparing regimens and the implementation of COVID-19 barrier measures targeting ALHIV during such pandemic.

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Experiences of Adolescents and Young Adults receiving Phone-based Peer Navigation to Address Barriers to HIV Care Engagement and Viral Suppression in Kenya

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Background: Structural, psychological, and clinical barriers to HIV care engagement among adolescents and young adults living with HIV (ALWH) persist despite gains in HIV epidemic control. Phone-based peer navigation may provide critical peer support, increase delivery flexibility, and require fewer resources. Little is known about ALWH experiences utilizing electronic phone-based peer navigation (E-NAV). We assessed the experiences of AYA receiving phone-based peer navigation to address barriers to HIV care engagement and viral suppression.

Material and Methods: We purposefully selected and conducted 20 in-depth interviews among participants randomized to E-NAV within the Adapt for Adolescents study in Kisumu, Kenya. Interviews were conducted by a trained qualitative researcher between October 2021-December 2021. The theory-informed guide used explored topics on health-seeking and care experiences, E-NAV acceptability and benefits, client-navigator relationship and intervention satisfaction. The

interviews were audio-recorded, transcribed, translated, and coded using Dedoose software.

Results: Overall, participants found the e-navigation satisfying – particularly liking the opportunity to select a preferred time for calls/text messages. They found the tone of navigator calls and messages friendly. Most participants preferred receiving messages and calls over the weekends or on weekday evenings due to busy school and work schedules. Reported E-Nav benefits included appointment reminders, building trust and increased knowledge about HIV care. AYA-navigator relationships were described as brotherly, client-focused, and helped build personal connection.

Conclusion: We found important insights about the acceptability and value of E-NAV among ALWH. E-NAV provides a promising approach to addressing lapses in AYA engagement in HIV care through flexible and meaningful phone-based peer support.

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Perfil de Falência Em Doentes Admitidos Com SIDA Avançado – Avaliação de Uma Pequena Coorte de Doentes Admitidos No Serviço de Medicina Do Hospital Central Da Beira (HCB)

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Introdução: Desde a introdução do Dolutegravir no esquema actual de primeira linha do tratamento antirretroviral (TARV) em Moçambique, o número de doentes com supressão viral vem crescendo não só pela a sua potencia mas também pela sua boa tolerabilidade e bom perfil farmacocinético. Contudo a taxa de hospitalização de doentes por complicações de SIDA permanece inalterada no HCB. Objectivo: Descrever as características de falência nos doentes HIV positivos admitidos por complicações de SIDA no serviço de Medicina do HCB.

Metodologia: Para uma análise prospectiva, transversal e descritiva e usando os critérios da OMS para definição de falência foram avaliados 63 doentes admitidos de Janeiro à Dezembro de 2022 admitidos com complicações de SIDA e que tenham tido acesso à uma CV e um CD4 durante o período de hospitalização.

Resultados: Todos 62 doentes estavam com esquema de TDF+3TC+DTG e apresentavam estágio clínico III-IV da OMS, sendo que as condições mais frequentes foram a tuberculose (TB) 16 casos (25.8%); pneumocistis jiruvenci 6 casos (9.7%); Sarcoma de Kaposi (SK) 6 casos (9.7%); meningite criptococcica (MC) 5 casos (8%); pneumonia bacteriana 4 casos (4.8%); linfoma não Hodgkin 3 casos (4.8%). 55 doentes (88.7%) tinham critérios de falência clinica; 29 (46.8%) apresentavam imunossupressão avançada (CD4< 200). Entretanto, 49 doentes (79%) tinham supressão viral (CV<1000 copias) dos quais 31 (63.3%) tinham CV indetectável (<40 copias). Dos 29 doentes com imunodepressão severa, 21 (72.4%) tinham CV< 1000 cópias e desses 13 (61%) tinham CV indetectável. O tempo médio em que os doentes estavam em TARV foi de 4 anos.

Conclusão: A taxa de supressão viral é elevada com o dolutegravir, entretanto, o sistema de saúde dá pouco enfoque a monitoria do CD4 em doentes com imunossupressão severa e conseqüentemente não se instituem as devidas profilaxias para as infecções oportunistas que são as principais causas de morbimortalidade nos doentes com SIDA avançado.

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Perfil Do Síndrome de Imunorreconstituição (SIRI) Em Doentes Com Sida Avançado Admitido No Serviço de Medicina Do Hospital Central Da Beira (HCB)

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Introdução: O acesso a terapia antirretroviral (TARV) em Moçambique melhorou bastante na última década, com isto, não obstante a redução de mortalidade por SIDA, surgem complicações relacionadas com o seu início precoce em doentes com imunodepressão severa. Objectivos: Descrever as características clínicas e imunológicas de doentes com SIRI ou provável SIRI internados num Hospital de nível quaternário.

Metodologia: Para uma análise retrospectiva de carácter descritivo e seguindo os critérios desenvolvidos pela International Network for Study of HIV Associated IRIS (INSHI), 93 processos clínicos foram seleccionados de um total 2058 processos de doentes admitidos com SIDA avançado no HCB entre janeiro de 2022 à janeiro de 2023. Foram considerados as seguintes variáveis: o tempo médio entre o início de TARV e o diagnóstico da infecção oportunista (IO), o diagnóstico da IO, o CD4 no momento do diagnóstico, manifestações clínico-laboratoriais, e o desfecho clínico.

Resultados: 4.5% dos doentes admitidos por SIDA tinham critérios de SIRI. O tempo médio entre o início de TARV e o diagnóstico da infecção IO foi de 71 dias, 11 (11.8%) eram SIRI paradoxal e 82 (88.2%) SIRI desmascarada. As IO associadas foram Tuberculose (TB) com 71 casos (76%) com predomínio da forma disseminada extrapulmonar; Meningite criptococcica (MC) com 8 casos (8.6%); Pneumonia por pneumocistis jiruvencis com 4 casos (4%); coinfeção TB e MC 3 casos (3.2%). A média de CD4 foi de 128 células sendo que 51 doentes (54%) apresentavam CD4 < 100 células. 36 (38.7%) pacientes faleceram e a média de duração de internamento foi de 8 dias.

Conclusão: O início de TARV com baixo CD4 foi o principal preditor de SIRI em doentes com SIDA avançado e TB disseminada foi a principal IO associada. Pelo CD4 é fácil identificar os pacientes de alto risco cuja boa vigilância deve ser garantida nos primeiros 6 meses após o início do TARV.

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Diversite Genetique du VIH-1 et Mutations de Resistance Chez Les Enfants en Echec Virologique Sur Cinq Sites de Prise en Charge au Benin

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Contexte : Les patients en échec de traitement ont un risque accru d'accumulation de mutations de résistance qui impactent négativement les possibilités de futur traitement. Chez les enfants, cette situation est d'autant plus préoccupante car ils sont en début de vie et les formulations pharmaceutiques disponibles sont limitées. Au Bénin, l'évaluation de la résistance antirétrovirale chez les enfants est peu documentée, même dix-huit années après le démarrage de la thérapie antirétrovirale chez les enfants vivant avec le VIH.

Matériel et méthodes : L'étude transversale a porté sur 47 enfants de moins de 15 ans en échec virologique ($CV \geq 3 \log_{10}$) sur deux réalisations consécutives à trois mois d'intervalle avec la plateforme Abbott m2000 RealTime. L'ARN viral a été amplifié par le kit Viroseq (protéase + 330 premiers acides aminés de la transcriptase inverse). Les séquences ont été analysées puis soumises à la base de données de Stanford. Les séquences ont été alignées contre les séquences références dans la base de données de Los Alamos puis l'arbre phylogénétique a été construit.

Résultats : L'âge moyen des enfants est de 109 [IQR 24-168] mois. La ligne thérapeutique la plus prépondérante est ABC+3TC+LPV/r (11/47). La moyenne des charges virales est de 4,42 \log_{10} [3,16-6,92 \log_{10}]. Le séquençage a réussi pour 78,72% (37/47) des échantillons. Au total, 83,78%

(31/37) des enfants portent au moins une mutation de résistance parmi lesquelles les INNTI, INTI, PI et INNTI+INTI représentent respectivement 90,32% (28/31), 83,87%(26/31),12,90% (4/31), et 77,41% (24/31). Pour les mutations associées aux INTI, la M184V représente 88,46% (23/26), et les TAMs 100% (26/26). La K103N représente 64,28% (18/28) des mutations associées aux INNTI suivi du P225H avec une proportion de 28,57% (08/28). La mutation majeure associée aux IP est la I54V 75%(3/4). Le CRF02_AG est la souche prédominante isolée dans 80,64% (25 /31) des cas, suivi de G 6,45% (2/31) et la souche pure A 12,50% (4/31).

Conclusion : Un taux élevé de mutations est observé chez les enfants. Ceci souligne l'importance d'implémenter les tests génotypiques en routine au Bénin dans le suivi biologique des enfants infectés pour anticiper sur l'échec virologique et éviter l'accumulation des mutations associées à la résistance.

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Effectiveness of Caregiver Mentor Directly Observed Treatment and Support Model on Viral Load Suppression in Uganda

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Background: Viral load non-suppression remains a challenge among children and adolescents. Those with detectable viral load receive intensive adherence counseling (IAC) but with non-compliance and a low re-suppression rate (23%). Caregivers sometimes fail to attend these sessions due to personal, psychological, financial, and child-related challenges. Directly observed therapy (DOT) has shown great improvement in treatment outcomes through improving literacy and supporting drug administration challenges using a peer-to-peer approach. We assessed the effectiveness of the caregiver DOTs model on viral load suppression in Uganda.

Material and Methods: We conducted a mixed methods implementation effectiveness Type 2 study among caregivers at Kasaala HCIII, Mityana, and Mubende Hospital in Central Uganda from June to December 2022. We identified caregivers of unsuppressed children and adolescents (2-15years) and paired them with caregivers of those suppressed from the same area within a radius of 2 kilometers on a ratio of 1:5-7. We trained those with suppressed children and adolescents as mentors in providing treatment literacy, and directly observing daily treatment. They conducted Dots for a period of 60-90 days and provided linkage to livelihood support. We analyzed the viral load results after the third IAC and those who were still unsuppressed were checked for Drug resistance.

Results: A total of 30 caregivers of 49 unsuppressed children were enrolled on the study. The average age of the children was 8.8(±3.8) Years 20 males and 29 females. Of which 77.1% were on 1st Line, 20.8% were on 2nd Line, and 77.6% were on DTG-based regimen. The mentors identified lack of information, negligence, low treatment literacy, and lack of a supportive environment at home as the major factors for non-suppression. After the DOTs intervention, 28(57.1%) had non-detectable viral load, 18 (36.7%) suppressed with viral load < 200 copies, 1 lost to follow-up, and 2 had unsuppressed viral load and confirmed having Drug-resistant.

Conclusion: Caregiver DOTs can effectively support caregivers of non-suppressing children and adolescents to improve treatment outcomes through improving literacy and supporting drug administration. Therefore, there is a need to support caregiver mentors to provide peer-to-peer support at the household level which reduces the burden on the overloaded health facilities.

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Evaluation of HIV-1 Gag Gene Variability and Drug Resistance-Associated Mutations According to Viral Subtypes Among Drug-Naïve Individuals

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Background: HIV-1 Gag mutations contribute substantially to protease- and capsid-inhibitors resistance besides compensating for loss of viral fitness. However, little is known about the significance of these mutations according to viral clades among drug-naïve patients and their effect on the viral immune escape potentials. We sought to evaluate the natural variability of the entire Gag gene, with a special focus on mutations associated with protease inhibitors (PI) and Lenacapavir (LEN) resistance.

Material and Methods: A total of 2031 HIV-1 sequences from treatment-naïve, retrieved from the Los Alamos HIV Database were analysed for mutation prevalence at PI and LEN resistance-associated positions. The role of each PI-LEN resistance positions in reducing the binding affinity between antibody and/or T-cell lymphocytes epitopes and the MHC molecules, was estimated.

Results: Overall conservation analysis of the Gag gene revealed 51.0% amino acid positions were conserved (<5% variability) and p24 protein presented the highest conservation rate (67.5%). The prevalence of Gag mutations associated to PI resistance (Gag-PI-DRMS) was as follows: Y79F (46.28%), R76K (39.73%), P453L (16.0%), K436E (13.24%), V128I (6.79%), T81A (5.76%), L449F (2.80%), I437T (1.23%), R452S (0.54%), A431V (0.44%) and K112E (0.09%). Gag-PI-DRMS were

significantly higher in viral recombinant forms as compared to pure subtypes (72.3% vs. 31.1%, $p < 0.0001$). Concerning LEN, the overall prevalence (95% CI) of lenacapavir DRMs was 0.14% (0.05-0.44) (3/2031), with M66I (0.05%) and Q67H (0.05%) observed in subtype C, and T107N (0.05%) observed in CRF01_AE. Moreover, polymorphic mutations M66C (n = 85; 4.18%), Q67K (n = 78; 3.84%), K70R (n = 7; 0.34%), N74R (n = 57; 2.81%) and T107L (n = 82; 4.03%) were observed at lenacapavir resistance-associated positions. Interestingly, K436E, I437T, L449F, P453L Gag-PI-DRMS and Q67H associated to LEN resistance are significantly associated with a reduced binding affinity between T-cells' lymphocyte epitopes and MHC molecules.

Conclusion: Among antiretroviral-naïve patients, about half of amino acid positions within the Gag gene are conserved. Higher rates of Gag-PI-DRMS are found among recombinant viruses. The low resistance to LEN suggests a high effectiveness of LEN-based regimens regardless of HIV subtype.

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The Effect of HIV Infection at Pre-ART Initiation on the Early Innate Immune System

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Background: Despite the advent of antiretroviral therapy (ART) for prevention of mother-to-child HIV transmission, perinatal HIV infection still occurs, mostly in low-income countries. During early life, there is increased reliance on the innate immune system. Due to the importance of this critical period of time, the effect of HIV at pre-ART initiation on the innate immune system was investigated.

Material and Methods: The TARA cohort was utilized in this study and recruited perinatally HIV exposed infants at age 1-2 mo from Maputo, Mozambique. 35 infected infants were prescribed

ART at study entry along with enrollment of 33 uninfected infants. Flow cytometry was performed on PBMC utilizing a 27-color flow cytometry panels designed to investigate all major subsets of Monocytes, Dendritic cells, and NK cells, as well as markers of activation, regulation, and trafficking. A Mann-Whitney T-test was performed to compare phenotypic data between the groups and a Spearman correlation was performed to find associations between phenotypic data of HEI and VL.

Results: NK cells of infants with HIV infection exhibited an activated profile with increased frequency and MFI of activation markers (CD38) and increased trafficking (CCR2 and CCR5) but decreased regulatory markers (NKG2A). Both CD38 and NKG2A on NK cells positively correlated with VL, while CCR2 negatively correlated. Dendritic cells showed a decrease in the frequency of conventional DC (cDC). These cells had a lower frequency of activation markers (CD38 and CD86) and trafficking (CCR2) markers. Monocytes showed minimal differences in marker and subset distribution but activation and trafficking markers on inflammatory monocytes (IM) positively correlated with the Pre-ART viral load.

Conclusion: Our results show that NK cells with an activated profile through increased CD38 and CCR2 and decreased NKG2A. In Dendritic cells, cDC were reduced in frequency and reduction in markers associated with activation, trafficking, and antigen presentation. Collectively these data suggest that NK cells are potentially playing a role in viral control in the absence of ART. Ongoing virus replication could result in activated inflammatory monocyte and impairments in cDC that are required for antigen presentation. Early ART initiation could potentiate immune control of virus replication.

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Investigating the Impact of POC STI/BV Testing on Matrix Metalloproteinase Biomarkers of Epithelial Barrier Integrity

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Background: Genital inflammation increases HIV infections in women, presumably through target cell recruitment and epithelial barrier damage. Because sexually transmitted infections (STIs) and bacterial vaginosis (BV) directly contribute to this inflammation, their effective treatment could potentially reduce HIV risk in women. A recent study on young South African women demonstrated that point-of-care (POC) STI/BV detection and treatment could resolve STIs and reduce genital inflammation in young South African women. Here, we investigated the model's impact on the genital epithelial barrier.

Material and Methods: POC testing for trichomoniasis, chlamydia and gonorrhoea was conducted using Xpert CT/NG and OSOM Rapid TV test on HIV-negative women. Microscopy was used to test women for BV using Nugent scoring. Multiplex ELISA was used to quantify 48 cytokines and five matrix metalloproteinase (MMP) biomarkers of epithelial barrier integrity from the participant's cervicovaginal fluid. Mann-Whitney U tests were used to assess the relationship between MMPs and STI/BV at baseline, with ANOVA and multivariable linear mixed models used to determine the impact of treatment on MMP concentrations.

Results: At baseline, women diagnosed with STI/BV (170/238) had higher concentrations of all MMPs compared to women with neither STI/BV (68/238; $p > 0.05$). By 12 weeks post-treatment, 31/35 (88.57%) women resolved their baseline STIs, while only 14/57 (24.56%) resolved their baseline BV status. Reductions in MMP-1 concentrations were observed after 6 weeks in women treated for STI and BV (2.763 pg/ml; $p = 0.0066$) or STIs regardless of BV status (2.760 pg/ml; $p = 0.0048$). These

reductions, however, did not reach the levels observed in women without STI/BV at baseline (2.065 pg/ml). BV treatment did not alter MMP concentrations.

Conclusion: POC treatment reduced MMP-1 concentrations, although not to the level observed in women with neither STI/BV. This implies that although POC STI/BV treatment may treat STIs and reduce inflammation, the integrity of the genital epithelial barrier is not fully restored, and women remain susceptible to genital infections, including HIV. Additional strategies may be needed to repair the genital epithelium after treatment.

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Serum Inter-Alpha-Trypsin Inhibitor Heavy Chain 4 (ITIH4) Plays an Important Role in the Regulation of HIV in Latently Infected Cells

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The major challenge to the current antiretroviral therapy (ART) strategies is the persistence, longevity, and the ability of HIV reservoirs to produce infectious viral particles upon ART interruption. ARTs induce only minimal decay of HIV reservoir. There is thus a need to explore virological and cellular factors that are important in the establishment and persistence of latently infected cells with the aim of eliminating the latent HIV reservoir.

Using THP-1 cells due to their unique feature to be differentiated into macrophage-like cells and having shown concordance with primary macrophages in multiple systems, we have developed a macrophage model for HIV latency harboring fluorescent markers to distinguish latently infected cells (MKO2 red fluorescence) from those undergoing active transcription (GFP).

Latently infected cells were sorted into single clones, expanded, and characterized for full length viral integration with one viral copy per cell. Established cell lines were reactivated with a variety of known latent reversal agents (LRAs) following differentiation PMA.

Analysis of RNA differential gene expression identified ITIH4, a soluble protein, to be significantly upregulated in latently infected compared to productively infected cells. Measurements of mRNA expression by qRT-PCR confirmed an increased expression of ITIH4 in latent cells compared to both uninfected cells and those in active viral transcription. Furthermore, when latently infected cells were reactivated with known latency reversal agents (LRAs), ITIH4 was significantly reduced. Overexpression of ITIH4 in latently infected cells reduced the ability of the virus to be reactivated suggesting that ITIH4 is involved in the maintenance of HIV latency. These results were confirmed in primary CD4+ T cells latently infected with HIV-1. Latent provirus in resting T cells were then reactivated with LRAs and ITIH4 measured by qRT-PCR and western blots. We observed a significant increase in both mRNA and protein expression suggesting ITIH4 increases in latently infected cells. We then obtained plasma from healthy donors and patients living with HIV (PLWH) and determined ITIH4 levels by ELISA. Compared to controls, ITIH4 levels was significantly increased in plasma of PLWH. We propose that ITIH4 plays an important role in the regulation of HIV replication in latently infected cells.

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Epigenetic-Modifying Compounds Identified as HIV Latency Reversing Agents in Vitro

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The persistence of the latent reservoir has prevented the eradication of human immunodeficiency virus (HIV). These latent reservoirs are the source of viral rebound after cessation of anti-retroviral therapy (ART). One approach for HIV cure is to reverse viral latency using small molecules that serve as latency reversing agents (LRAs). An important mechanism by which HIV remains in latency during ART is modifications of the chromatin around the virus. Therefore, we hypothesized that epigenetic modifying compounds may be effective latency reversing agents.

We determined the latency reversing ability of novel agents from a library of 150 epigenetic-modifying compounds. JLAT 10.6 cell line which contains one copy of HIV-green fluorescent protein (GFP) reporter was used for the screening. We incubated JLAT 10.6 cells with 1uM or 10 uM of the compounds at 37oC with 5% CO2 for 24hours. Screening was done in triplicates using TNF alpha and Vorinostat as positive controls and DMSO as the negative control. Fluorescent activated cell sorting (FACS) was performed to measure HIV reactivation from latency determined by GFP expression in the cells.

Of the 150 epigenetic compounds screened, 18 were positive hits with GFP expression ranging from 11-91%. Seventeen (17) compounds reactivated

HIV at 1uM and one compound at 10uM. Of the 18 positive hits, 9 were histone deacetylase inhibitors, 3 targeted epigenetic reader domains, 3 histone methyl transferase inhibitors, 1 dual phosphoinositide 3-kinase (PI3K) and pim inhibitor. The compound (MC1568) with the highest GFP expression (91%) is a class 2 HDACI. We report for the first time in Ghana the establishment of a medium to high throughput drug screening system for HIV latency reversal. Further work will determine the ability of the positive hits to reactivate HIV in CD4+ T cells ex-vivo from people living with HIV on ART.

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The Rescue Model May Improve Continuity of Treatment for People Living With HIV (PLHIV) In Hard-To-Reach Areas: Results From Catholic Relief Services (CRS) in Western Province, Zambia

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Background: As we move towards epidemic control, it is important that PLHIV on anti-retroviral treatment, ART are retained in care. There is an urgent need to develop strategies that maintain PLHIV on treatment despite challenges posed by their geographical location. We implemented the Rescue Model, designed to improve ART services through client centred strategies and approaches in hard-to-reach areas within communities that are cut off from health services because of floods in the Western Province of Zambia.

Material and Methods: A total of 29 sites, with ≥150 recipients of care (ROCs), which are usually cut-off every December – August, after the rainy season, were selected. From the mapping process, 127 strategic outreach sites, called Community Rescue Points (CRPs), were set-up, and 132 lay persons, called Community ART Agents (CAAs) were identified to champion community mobilization for

ART services. The CAAs and facility clinical staff were trained to provide these services from October 2021 to September 2022. They used available transport to reach out to ROC in cut-off communities, which included oxcarts, banana boats, and dugout canoes, and where these were unavailable, staff braved the floods by walking through them.

Results: From October 2021 to September 2022, the number of people receiving ART increased from 7,352 to 7,866. We reached 48% (n=3,747) of 7,826 ROCs through the CRPs. Viral load coverage improved from 67% (4,532/6,764) to 82% (5,806/7,080). Viral load suppression maintained at 96% (5,574/5,806) and Viral load sample rejection reduced from 2% (44/2,153) to 0.4% (16/3,895).

Conclusion: The Rescue model reached ROCs with ART treatment; viral load coverage and suppression increased. Client travel time and cost reduced by ART refill provision closer to their homes. Therefore, this model may be beneficial in settings with similar challenging terrains to retain patients on ART.

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Multiple Stigma and Poor Community Involvement as Barriers to Harm Reduction Services Access Among Women Who Inject Drugs: A Case From Tanzania

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Background: Women who inject drugs (WWID) are disproportionately affected by HIV compared to other priority populations due to several vulnerabilities they face including being female, societal and social contexts. However very few WWID have access to HIV and harm reduction services with little or no support from community members. Our work shows how stigma and poor community involvement hinder WWID from accessing HIV and harm reduction services. These are part of the findings from the monitoring and

evaluation of a project aimed at building sustainable community led HIV care and harm reduction actions for WWID in Dar es Salaam, Tanzania

Material and Methods: A total of seven focus group discussions of 6 to 7 people were conducted in October 2021. Three of these were conducted among WWID, two among service providers and two made of community members, parents and local leaders from the communities where our beneficiaries live. Interview guides on accessibility to harm reduction services were used during the discussions. The interviews were audio recorded, verbatim transcribed and thematically analyzed.

Results: WWID experience multiple stigmas, including perceived stigma as well as external stigma. They are stigmatized firstly because of drug injection as women and secondly being HIV positive as most of them are living with HIV. The societal stigma results in exclusion and rejection as well as poor health seeking behavior among WWID. Poor community involvement as a result of lack of awareness among community members on the vulnerabilities of WWID further excludes them from accessing harm reduction services.

Conclusion: HIV and harm reduction programs should incorporate interventions that address different forms of stigma among WWID. Continuous community sensitization is important in order to raise awareness on the vulnerabilities of WWID. These collectively will contribute in the reduction of societal stigma as well as improve community involvement in harm reduction actions.

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Client Centered Care for Better Clinical Outcome Through Community Retail Pharmacy Drug Distribution (CRPDDP) Towards Sustainability in COVID-19 Context - Lessons in Ankole Sub-Region

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Background: Community Retail Pharmacy Drug Distribution care modal for stable ART clients in the community launched in 2018 by Ministry of Health Uganda due high HIV burden, growing cohorts of stable patients on ART, limited human resource in era of test and treat for HIV, long distances traveled for care coupled with long waiting time and limited private practitioners in HIV management despite serving significant population. The modal aims to reduce client interruption in treatment reducing access barriers, stigma and promotion of self-management by attaching PLHIV on their Preferred DSD modal for better clinical outcomes to achieve epidemic control by 2030. In 2021, USAID LPHS Activity piloted CRPDDP in Mbarara District focusing on 4 accredited private pharmacies (Blaze, Solmar, Keziya and Guardian) attached to two high volume health facilities Bwizibwera HCIV and Mbarara Municipal Council HCIV)

Material and Methods: Using a district led programming a competitive assessment process following national ART guidelines and policies was done for 4 pharmacies. Health workers were trained on CRPDDP modal with scope of work (SOW) and obligations defined to RoC improving patient outcomes. Documentation and reporting tools were disseminated. Data triangulation and analysis from multiple sources EMR, missed appointment and dispensing log to identify stable clients for enrollment and Client literacy and education of CRDDP was conducted to continuously support clients consent for CRPDDP, be enrolled and linked to their pharmacy of choice. Monthly tracking of clients, supplies and support to the

accredited pharmacies conducted to address challenges and refills in addition to ensure quality documentation and reporting.

Results: In twelve Months of CRPDDP implementation at four accredited pharmacies, on average 97.8% (1,535/1,569) of the RoC referred from 2 public health facilities had been enrolled, 92.8%, (1456/1569) were still active as of end of September 2022, 98% kept their appointment for same period with 0.6% experiencing interruption in treatment.

Conclusion: community ART retail pharmacies reduce facility congestion, barriers to facility clinic refills and improves appointment keeping with flexible drug pick up time. Lesson Learnt Public private partnership through CRPDDP ART refills improves retention in care and requires sustained support supervision for quality documentation and reporting.

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Community-Based Peer Education and Uptake of Sexual Reproductive Health and HIV Services Among Rural Adolescents in Western Province of Zambia

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Background: Zambia has a generalized HIV/AIDS epidemic with high HIV prevalence among adolescent girls (5.6%) and boys (1.8%). Adolescents and young people (AYP) lack access to sexual reproductive health (SRH) education and services, particularly in rural areas. We describe how community-based peer education facilitated SRH, HIV testing, treatment, and prevention services among AYP in the rural Western Province of Zambia.

Material and Methods: This cross-sectional study included AYP aged 15-24 from ten health facilities in Western Province. The Community Impact to Reach Key and Underserved Individuals for Treatment and Support (CIRKUIITS) project supports peer adolescent community-based HIV services. Two community liaison officers were recruited to supervise 20 adolescent peer educators, who were trained in conducting community mobilization and sensitization. Adolescents in the community were identified and disaggregated by age to ensure age-appropriate messaging. Using the structured Ministry of Health HIV risk assessment tool, sexually active AYP were identified and referred to health facilities for SRH interventions. Outcomes of interest included uptake of health services, measured by the number of AYP reached with health information, HIV testing, and prevention services. Data from October 2021 to September 2022 were extracted from the CIRKUIITS program electronic database to estimate outcomes of interest and basic descriptive statistics by gender.

Results: CIRKUIITS reached 15,080 AYP (11,705 girls; 3,375 boys) with health education on SRH and HIV testing. A total of 25% (3,731/15,080) of at-risk AYP were referred for HIV testing per National HIV Risk Screening Guidelines. Twenty-six percent (3,044/11,705) of girls and 20% (686/3,375) of boys were referred for SRH services. Of those referred, 5% (165/3,044) of girls were referred for cervical cancer screening and 54% (1,634/3,044) received family planning services. Five percent (154/3,375) of boys were referred for voluntary medical male circumcision. Overall, 2% (83/3,731) of those who tested negative for HIV were referred for PrEP. Community-based peer education facilitated uptake of SRH and HIV testing services, and PrEP linkage needs to be strengthened.

Conclusion: Peer-based health education may increase AYP access to health services in rural communities. Further work can determine efficacy of peer-based education for engagement of AYP in SRH and HIV services.

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Profils épidémiologiques, Diagnostiques, Evolutifs et Qualite de Vie des Patients Suivis Pour un COVID Long au Service des Maladies Infectieuses et Tropicales D'Abidjan, Cote D'Ivoire

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Contexte : Le COVID long est un état survenant chez les personnes ayant des antécédents d'infection probable ou confirmée par le SRAS-CoV-2, généralement 3 mois après le début du COVID-19 avec des symptômes qui durent depuis au moins 2 mois et qui ne peut être expliqué par un autre diagnostic. L'objectif de cette étude était de décrire les aspects cliniques et paracliniques du COVID long et l'impact sur la qualité de vie des patients et proposer des stratégies de prise en charge.

Matériel et méthodes : il s'est agi d'une étude longitudinale, descriptive et analytique allant du 1er septembre 2021 au 30 juin 2022 au service des maladies infectieuses et tropicales du centre hospitalier et universitaire de Treichville. L'analyse a porté sur les aspects clinico-biologiques, évolutifs des patients chez qui persistaient des symptômes plus de 3 mois après l'épisode aigu de COVID. Les données ont été saisies et analysées par le logiciel EPI info.

Résultats : Des 118 patients inclus et suivis, 53,4% étaient de sexe féminin. L'âge médian était de 59 [46-67] ans. Les symptômes les plus fréquemment retrouvés au troisième et au sixième mois étaient respectivement l'asthénie (79,7% vs 58,5%) et l'essoufflement (78,8% vs 57,6%). La CRP restait positive chez 50% des patients au troisième mois et 20%, au sixième mois. L'impact invalidant sur la

qualité de vie au troisième et sixième mois portait essentiellement sur la mobilité (9,3% contre 9,8%), l'activité habituelle (5,9% contre 6,6%) et les soins courants (5,1% contre 6,6%). Le taux de CRP était significativement associé au COVID long au troisième mois ($p=0,02$).

Conclusion : Le COVID long persistait jusque six mois après l'infection aiguë impactant modérément la qualité de vie des patients sur les fonctions physique, cognitive et psychologique.

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Stratégies Utilisées pour le Déploiement des Vaccins Contre la COVID19 au Mali : Approches Axées sur la Communication et le Marketing Social

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Contexte : La crise sanitaire majeure provoquée par la maladie à coronavirus 2019 apparue fin 2019 n'a pas épargné le Mali où elle est identifiée à partir du 25 mars 2020 responsable d'une létalité globale de 2,37%. Afin de diminuer la charge de la maladie, en prévenant notamment les cas graves et les décès à travers la réduction de la circulation du virus, le Mali a décidé de poursuivre la vaccination sur l'ensemble du territoire, avec une cible élargie.

Matériel et méthodes : Pour atteindre l'immunité collective le Mali s'est fixé comme objectif de vacciner 70% de la population cible. Soutoura a soutenu le gouvernement malien dans les régions de Bamako, Kayes, Koulikoro, Sikasso, Ségou et Mopti. Pour se faire le pays a adopté des stratégies axées sur la communication et le marketing social pour la mobilisation communautaire à la vaccination : Elles comprenaient le dialogue communautaire, les plaidoyers, la gestion des rumeurs, les conférences débats. La vaccination s'est déroulée en stratégie fixe et avancée. Les données désagrégées par âge et par sexe ont été

générées par le système d'information sanitaire DHIS2 national.

Résultats : Entre mars et septembre 2022 les activités de communication couplées à la vaccination ont permis de sensibiliser 5798 personnes et de vacciner 5073 personnes soit 87,5% des cibles. Les personnes vaccinées étaient dans 45,8% de sexe masculin et 54,2% de sexe féminin. 4% (207/5073) des personnes vaccinées appartenaient à la classe d'âge de 12 à 17 ans ; 30,6% (1556/5073) à la classe d'âge de 18 à 49 ans ; 44,03% (2234/5073) à la classe d'âge de 30 à 59 ans et 21,21% (1076/5073) à la classe d'âge de 60 ans et plus. En fin septembre 60,4% des personnes ont été complètement vaccinées et 39,6% étaient en attente d'une deuxième dose. Le vaccin Johnson & Johnson a été utilisé dans 54,04% suivi du Sinovac dans 29,33%, le Pfizer dans 12,39% des cas et enfin le Sinopharm dans 4,19% des cas.

Conclusion : Les résultats obtenus ont montré la nécessité de se focaliser sur les approches axées sur communication pour l'adoption de comportement positif en faveur de la vaccination contre la COVID19.

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Immunogénicité et Innocuité des Vaccins Contre le SARS-Cov-2 à Arnm bnt16b2 et Inactivé Bbibp-Cov dans une Population de Personnes Vivant Avec le VIH Contrôlées Suivies au Service D'Infectiologie de Libreville : Etude Pilote

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Contexte : Les données sur la vaccination contre la COVID-19 chez les PvVIH au Gabon sont inconnues. Objectif : Déterminer la sécurité et la réponse immune de l'utilisation des vaccins contre le SARS-CoV-2 SINOPHARM® et PFIZER BioNTech® chez les PvVIH contrôlés.

Matériel et méthodes : Il s'est agi d'une étude longitudinale, randomisée non contrôlée menée de septembre 2021 à avril 2022 au service d'Infectiologie du Centre Hospitalier Universitaire de Libreville et à l'UMRAIP à Owendo. Etaient inclus les PvVIH volontaires âgés de plus de 18 ans infectés par le VIH1 avec des CD4 supérieur à 200/mm³ et une CV indétectable, ayant donné leur consentement écrit. Un groupe contrôle a été constitué pour la comparaison de la réponse immune. Les titres IgG antiSpike ont été mesurés à l'inclusion (D1), D21/28, D35/42 et 3 mois après la première dose des vaccins ; les événements indésirables ont aussi été répertoriés au cours de ces visites.

Résultats : Au total 53 participants ont été inclus, 27 enrôlés dans la cohorte du vaccin PFIZER dont 9 (33,3%) VIH négatifs et 18 (66,7%) PvVIH. La cohorte du vaccin SINOPHARM était constituée de 26 participants dont 17 (65,3%) VIH négatif et 9 (34,6%) PvVIH. A l'inclusion, les taux médians d'IgG étaient de 1,59 [0,44-7,64] et 53,7 [25,0-126,8] respectivement chez les PvVIH et les non infectés ($p=0,02$). À D35/42, les taux médians d'IgG étaient 8 à 10 fois plus élevés dans chacun des groupes comparativement à D1 ; de 53,7 [25,0-126,8] à D1 à 644,6 [509,0-698,7] à D35/42 et de 1,4 [0,0-11,0] à D1 à 589,6[405,6-773,6] à D35/42 chez les VIH négatifs ayant reçu PFIZER et SINOPHARM respectivement ($p<0,01$). Ces taux ont varié de 1,6 [0,4-7,6] à D1 à 41,9 [39,8-49,1] à D35/42 et de 0,5 [0,1-5,1] à 21,6 [8,8-31,9] à D35/42 chez les PvVIH vaccinés respectivement par PFIZER et SINOPHARM ($p<0,01$). Après la vaccination et au cours du suivi, les effets indésirables étaient fréquemment enregistrés chez les participants ayant reçu le vaccin P-FIZER.

Conclusion : Le vaccin P-FIZER est plus immunogène que le vaccin SINOPHARM chez les PvVIH comparativement aux témoins négatifs. Bien que le SINOPHARM soit mieux toléré.

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Preliminary Safety Results of the Evaluation of Heterologous Prime-Boost COVID-19 Vaccines Regimens in Mozambique

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Background: Heterologous schemes of COVID-19 vaccines are recommended in view of their positive effect on the immune response. These schemes also provide more flexibility to immunisation programs, which is of special relevance to settings in sub-Saharan Africa. However, scarce data is available on the safety, immunogenicity, efficacy and effectiveness of COVID-19 vaccines in Africa. In a Phase 2 trial, we evaluated the safety and immunogenicity of heterologous schemes in Mozambique and Madagascar in adults aged 18 to 65 years.

Material and Methods: This ongoing trial randomly assigned participants on a 1:1:1:1 ratio to two groups with homologous schemes (controls) and two with heterologous schemes, using the BBIBP-CorV vaccine (Sinopharm, China) and the Ad26.COV2.S vaccine (Johnson & Johnson, USA). Each participant received two injections 28 days apart. Participants will be followed for 12 months after the second dose. Safety data was collected until 28 days after the injections, and blood samples were collected to evaluate safety and immunogenicity at 4 weeks, 6 months and 12 months after the second dose.

Results: A total of 204 participants were enrolled in Mozambique. Participants were mostly male (84.3%) and the median age was 25 years (range 18 to 60). At enrolment 157 (77.0%) participants were seropositive for SARS-CoV-2 antibodies (IgG and/or IgM). Reactogenicity was reported in 122 (59.8%) participants. Site pain was reported in 82

participants (40%), headache in 65 (31.9%) and fatigue in 44 (21.6%). Reactogenicity was reported as mild in 108 participants (52.9%), moderate in 53 participants (26.0%) and severe in 8 participants (3.9%). Unsolicited adverse events were reported in 20 participants (9.8%) and were classified as not related to the vaccines. Comparing the reactogenicity and the adverse events between seropositive and seronegative participants at screening we found a statistical significance in fatigue ($p=0.049$) and reactogenicity graduated as severe ($p=0.005$). There was no SARS-CoV-2 infection recorded. Two serious adverse events were reported as not related with the study vaccines. Comparison between treatment groups was not done as the unblinding is pending.

Conclusion: The homologous and heterologous COVID-19 vaccination schemes used in this study are safe to use in Africans.

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Factors Associated With Death in Patients Hospitalized for COVID-19 at the Department of Infectious and Tropical Diseases From March 2020 to March 2022, Abidjan, Côte D'Ivoire

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Background: Initially a low-key outbreak in Wuhan, China, coronavirus disease 2019 spread rapidly around the world and was declared “global public health emergency” by the World Health Organization on January 30, 2020, then as a pandemic on March 11, 2020. It quickly affected mortality around the world. Objective: To study the factors associated with the risk of death in hospitalized patients with Covid-19.

Material and Methods: We included all patients hospitalized for COVID-19 in the infectious diseases

department between 03/11/20 and 03/31/22 and analyzed severity factors. The diagnosis was confirmed by a positive SARS-CoV-2 RT-PCR on a nasopharyngeal swab and/or by a compatible chest Computed Tomography (CT) scan and suggestive clinical and biological data. We compared deceased patients and survivors by univariate analysis: Fischer or Chi2 test for qualitative data and Student's t test for quantitative data.

Results: Among the 1333 patients included, the M/F sex ratio was 1.5 and the median age was 55 years (IQR: 42–65). Comorbidities such as hypertension, diabetes, respiratory, cardiac, neurological, renal failure and HIV infection were present in 447 patients (33.8%). The patients presented the following symptoms: cough 1023 (77%), dyspnea 997 (75%), asthenia 993 (75%), headache 766 (58%), myalgia 756 (57%). At admission: 393 (32%) had room oxygen saturation $SpO_2 \leq 90\%$ and were admitted to the intensive care unit. Patients were hospitalized in the department for a median of 7 days (IQR: 0–120). During hospitalization, 312 patients (23%) died. The univariate comparison between the deceased patients and the survivors showed statistically significant ($p < 0.05$) that the deceased patients: were older (62 years vs 55), had a comorbidity (hypertension, diabetes, HIV), oxygen saturation below 90%, length of hospital stay, severity of infection and stay in intensive care unit.

Conclusion: COVID-19 is more serious and fatal in adults with comorbidities including HIV, hypertension, diabetes. Respiratory rate and oxygen saturation on admission are clinical signs which indicate the severity of the infection and which make it possible to adapt treatment.

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COVID-19 Surge Pattern, Fatality Rate and Associated Risk Factors in Nigeria: A Retrospective Epidemiological Investigation of the Pandemic Waves (2020 – 2022)

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Background: Literature abounds on the Corona Virus Disease (Covid-19) but paucity of evidence on the surge pattern and the connected SARS-COV-2 mortality by the pandemic waves persist. Covid-19 waves pattern and fatality associated risk factors by the periodic pandemic waves was thus investigated to inform SARS-COV-2 containment and strengthen prevention strategy.

Material and Methods: A retrospective epidemiological analysis of data mined from open-source Surveillance Outbreak Response and Analytics System (SORMAS) database. Epi-curve depict the Covid-19 pandemic wave pattern for the period. Cumulative incidence (CI), incidence rate (IR) and case fatality rate (CFR) were computed and compared for the period. Bivariate Chi-square test assessed association between Covid-19 waves and mortality. Multivariable logistic regression reporting adjusted and unadjusted odds ratio was adopted to quantify the likelihood and significance of the pandemic waves and, demographic and clinical risk factors associated with Covid-19 mortality. All analysis was performed using Stata v17.0 at a 95% confidence interval.

Results: Four waves [Feb 2020 – Oct 2020 (19.0%), Oct 2020 – Jun 2021 (44.3%), Jun 2021 – Nov 2021 (24.4%) and Nov 2021 – Feb 2022 (12.4%)] of the Covid-19 pandemic was observed between 2020 – 2022. Incidence was highest in the first (CI = 13.8%) and lowest in the third (CI = 7.3%) wave with IR of 1.5/100 person-months of observation. CFR is 0.95% with 1.80%, 0.70%, 0.81% and 0.25% in first, second, third and fourth waves respectively. Covid-19 waves are significantly associated with mortality ($p < 0.001$) with higher likelihood in first (COR=11.37,

95%CI=9.20-14.03) second (COR=3.17, 95%CI=2.55-3.92) and third (COR=2.18, 95%CI=1.74-2.74) waves compared to the fourth. Age (AOR=1.05, 95%CI=1.04-1.06), male-gender (AOR=1.77, 95%CI=1.42-2.21), secondary (AOR=1.99, 95%CI=1.29-3.07) and tertiary (AOR=1.99, 95%CI=1.28-3.08) education and inpatient status (AOR=9.91, 95%CI=8.06-12.18) are demographic and clinical risk factors associated with Covid-19 mortality.

Conclusion: Nigeria experience four waves of Covid-19 pandemic with a propagated epi-curve pattern and about 1% case fatality rate in two years. Covid-19 incidence and fatality were highest and more likely in the first wave. Containment strategy implemented in the low incidence wave need to be optimized and treatment modality considering mortality predisposing factors is critical for SARS-COV-2 clinical management and prevention plan.

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Characteristics of Early-Acceptors to COVID-19 Vaccination: A Retrospective Review of People Living With HIV Reached for Vaccination in Southern Nigeria

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Background: People living with HIV (PLHIV) are one of the priority groups for COVID-19 vaccination. However, myths and beliefs adversely affect COVID-19 vaccine uptake. PERFOR through USAID supported the Government of Nigeria to improve COVID-19 vaccination among PLHIV using strategies such as engagement of PLHIV as champions, integration of vaccination into ART clinics, and set-up of mobile vaccination points at differentiated service delivery points. This paper assesses characteristics associated with early acceptors of

COVID-19 vaccination among people on antiretroviral therapy in southern Nigeria.

Material and Methods: This retrospective study used program data from electronic medical records of PLHIV (> 18 years, and non-pregnant) who received COVID-19 vaccination across 154 health facilities in Akwa Ibom and Cross River States, Nigeria. Demographic data (age, sex, education, and location of care—community or facility); clinical data (Time of ART initiation, and viral suppression status [<1000 copies/ml]), and COVID vaccination dates were abstracted. Early-acceptors were defined as individuals who received COVID vaccination within the first 18 months of vaccination roll-out (March 2021 – June 2022). Multivariable logistic regression analysis was used to determine characteristics associated with early COVID-19 vaccination acceptance using STATA version 14, and a p-value <0.05 was considered statistically significant.

Results: A total of 178,888 [M:67,328 (37.6%); F:111,560 (62.4%)] PLHIV with median age of 37 years [31–44 years] were reached for COVID-19 vaccination. The majority (66.5%, $n=109646$) reached had secondary education, already on ART prior to this period (77.4%; $n=138394$), were virally suppressed (96.6%, $n=172747$), and received antiretroviral treatment in the community setting (67.0%, $n=119790$). Of the 178,888 PLHIV, 79,014 (44.2%) were early COVID-19 vaccination acceptors. In multivariate analysis, the proportion of early acceptors were significantly higher among those who had no formal education [aOR=1.15; 95% CI: 1.03 – 1.08]; new-on-ART [aOR=1.36; 95% CI: 1.32 – 1.39]; virally suppressed [aOR=1.05; 95% CI: 1.02 – 1.30]; and received care in the community setting [aOR=1.08; 95% CI: 1.06 – 1.11].

Conclusion: People with lower educational qualification in communities were more likely to receive COVID-19 vaccination services. More effort should be directed at enlightening campaigns targeted to people with higher educational attainment, and those receiving ART within facility settings.

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High Seroprevalence of COVID-19 Antibodies Following Vaccination in Cameroon: Evidences From the EDCTP Perfect-Study

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Background: Anti-SARS-CoV-2 vaccine remains a global health priority, but evidence on its significance within tropical settings like Cameroon remains limited. Our objective was to assess the overall rate of SARS-CoV-2 immunity, its disparity according to vaccine-status and types of vaccines administered in Cameroon.

Material and Methods: A cross-sectional serosurvey was conducted throughout April-2022 among individuals tested for COVID-19 at the Chantal BIYA International Reference Centre-(CIRCB) in Yaoundé-Cameroon. Socio-demographic and detailed clinical data were collected; SARS-CoV-2 antibodies were tested on plasma using Ninonasal™ COVID-19 IgG/IgM assay, while SARS-CoV-2 real-time PCR was performed on nasopharyngeal swabs using DaAn gene 2019-nCoV kit. Statistical analyses were performed with $p<0.05$ statistically significant.

Results: A total of 599 participants were enrolled: median [IQR] age was 40 [32–49], 58.4% (350/599) men, 1.8% (11/599) with flu-like symptoms and 19.2% (115/599) reporting previous SARS-CoV-2 positivity. Regarding COVID-19 vaccination, 68.4% (410/599) had received at least one dose (48.3% Pfizer, 24.1% Johnson&Johnson, 18.8% Moderna;

8.0% AstraZeneca, 4.1% Sinopharm and 0.5% Sputnik-light) and 92.4% (379/410) were fully vaccinated. About 60% of participants were at 6 months post-vaccination. Overall, rate of COVID-19 antibodies was 75.8% (454/599), with 10.7% (64/599) IgM, 75.3% (451/599) IgG and 10.2% (61/599) IgM/IgG. High prevalence of antibodies was not associated to either age (<50/≥50 years, $p=0.86$), or gender (M/F, $p=0.89$), or duration post-vaccination ($\leq 6/ > 6$ months, $p=0.28$), but rather to complete and boost doses of vaccines (OR=1.6 [95%CI: 1.1–2.5]; $p=0.03$ and OR=3.2 [95%CI: 1.8–5.9]; $p<0.001$ respectively). Additionally, Pfizer was the only vaccine statistically associated to this high prevalence of COVID-19 antibodies (OR=2.9 [95%CI: 1.8–4.9]; $p<0.001$). Following real-time PCR, the rate of SARS-CoV-2 positivity was 2.2% (13/599; mean time post-vaccination was 7.4 ± 3.9 months) all with low viral loads (CT-value>34) and 76.9% (10/13) of these cases were reactive to IgG.

Conclusion: The high-rate of COVID-19 antibodies suggests herd immunity at community-level in Cameroon. Full vaccination contributes to a greater immunogenicity, remarkably with Pfizer vaccine. In this context, vaccine strategies should prioritize vulnerable populations in the country, with revised policies guided by complementary investigations.

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Active Household COVID-19 Surveillance in Peri-Urban Maputo, Mozambique, December 2020-March 2022

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Background: In most sub-Saharan African countries, reported COVID-19 cases and deaths were lower than expected based on infection prevalence, even when corrected for age. In Maputo City in 2020-21, COVID-19 testing was centralised in two COVID-19 management facilities, where mild/moderate cases are unlikely to go. We set up an active biweekly surveillance for possible COVID-19 cases in a peri-urban community of Maputo.

Material and Methods: Participants from all ages were selected from the Health and Demographic Surveillance System in Polana Caniço, covering 15,393 residents. During December 2020-March 2022, households were visited or phoned bi-weekly. Anyone reporting any respiratory sign, anosmia, or ageusia, was asked to self-administer a nasal swab, for SARS-CoV-2 PCR testing. We describe COVID-19 cases, and analyse demographics, comorbidities, and exposures associated with COVID-19, adjusting for age using Poisson regression.

Results: During 12,429 surveillance visits in 1,489 households with 6,008 participants (mean age 25 years, 14% >50 years, 54% male, 7.4% disclosed HIV positive), 761 possible cases (mean age 30 years, 22% >50 years, 57% female, 9.6% HIV+) were identified, in 384 households. 148 (24%) had fever, 478 (76%) at least one respiratory sign, 118 anosmia (19%) and 133 ageusia (22%). Case numbers peaked in January 2021 (71 possible cases), July 2022 (109), and December 2021 (74). Nasal swabs of 627 possible cases were collected, median 5 days after symptom onset (IQR 3-7 days). 149 (24%) cases were confirmed, mean age 38 years with 35% >50 years, and 10.3% HIV+. Anosmia (37%, aRR 1.7, 95%CI 1.1-2.7), ageusia (40%, aRR 1.6, 95%CI 1.0-2.6), oxygen saturation below 95% (39%, aRR 1.4 95%CI 0.57-3.2), throat pain (41%, aRR 1.3 95%CI 0.77-2.0), and fatigue (37%, aRR 1.2, 95%CI 0.75-2.0) were more frequent among confirmed cases. We found no association with HIV (aRR 0.85 95%CI 0.38-1.7). The proportion of cases confirmed peaked at 39% in January, again 39% in July 2021, and 55% in December 2021.

Conclusion: Active surveillance in an urban population cohort demonstrated the clinical spectrum, demographic and socio-economic distribution of mild/moderate COVID-19 disease in Maputo City confirming that the large majority of cases were mild and non-febrile.

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Rapid Optimisation of Instructions for Use for COVID-19 Self-Testing Implementation in Nigeria Using Lessons Learnt From Malawi and Zimbabwe

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Background: COVID19 self-testing can rapidly scale-up testing capacity in low-income settings. Procedural errors in self-testing can however impact test accuracy. Ability to follow instructions for use (IFU) has cultural variation that can be rapidly evaluated using cognitive interviewing plus observation. We investigated cross-cultural compatibility in Nigeria using IFUs optimized in Malawi and Zimbabwe for STANDARD Q COVID-19 Ag self-test.

Material and Methods: Building on results from 287 cognitive interviews in Malawi and Zimbabwe that used 6 iterations of IFU changes to reach data saturation and usability thresholds (i.e., correct execution of all self-testing critical instructions), literate and non-literate Nigerian participants were purposively recruited from settings identified as potential implementation sites for COVID19 self-testing. Cognitive interviews with participants asked them to reflect aloud on what they understood from IFUs. Observation checklists determined usability thresholds.

Results: In Nigeria, only 12 observational cognitive interviews across 3 iterations were required to reach pre-set usability thresholds likely to provide correct results, with the main challenge being correctly identifying test-kit components, with 2/4 (50%) of participants in the first iteration doing this correctly. Once rectified by supplemented IFUs, all

4 3rd round participants were able to follow the procedure correctly and all 4 able to correctly interpret results (i.e., correctly identify negative test results). Themes arising included technical language (e.g., “desiccant”) in IFUs, and need for more literal graphic representation. Interpretation was most challenging for invalid results. Participants requested a basic overview of the process to supplement detailed IFUs.

Conclusion: Despite wide cultural differences, IFUs optimised in Malawi and Zimbabwe required only minor modifications in Nigeria to support accurate self-testing. Our results stress the high programmatic value of questioning the likely usability of Manufacturers IFUs with rapid evaluation using cognitive interviewing. Repositories of interview guides with regional optimised IFU adaptations can play a critical role in supporting accurate self-testing.

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Sars-Cov-2 Seroprevalence and Associated Factors in Young People With HIV Attending Serviço Amigo Do Adolescente E Jovem (SAAJ) In the Sofala Province (Mozambique)

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Background: Among young people, HIV prevalence is estimated at 7% in Sofala province. Even though the COVID-19 pandemic threatened the positive trend of reducing HIV infections, data on the impact of COVID-19 on people living with HIV (PLWHIV) are lacking. The aim of this study is to explore the seroprevalence of SARS-CoV-2 and associated factors among young people, based on their HIV status.

Material and Methods: A cross-sectional study was conducted including people aged 18-24 years-old attending a visit at adolescent friendly health services (8 in Beira, 1 in Nhamatanda), between June and August 2022. People vaccinated against SARS-CoV-2 or PLWHIV with WHO stage III-IV were excluded. A SARS-CoV-2 antibodies qualitative test and a questionnaire (investigating socio-demographic characteristics, HIV status, COVID-19 preventive measures and symptoms) were proposed. SARS-CoV-2 seroprevalence with 95% confidential interval (CI) was calculated with Clopper-Pearson method. Multivariable binomial logistic regression was used to estimate the positive SARS-CoV-2 antibodies test odds ratio (OR).

Results: Of the 540 people included, 355(65.8%) were females. The mean age was 20.2 years (SD 2.0). PLWHIV were 90(16.7%) and were more frequently workers than students ($p=0.002$). Almost all the sample (96.1%) reported adopting at least one preventive measure for COVID-19. The adjusted seroprevalence of SARS-CoV-2 in the whole sample was 46.8% (95%CI 42.6-51.2). It was 35.9% (95%CI 25.3-47.5) and 49.1%(95%CI 44.1-54.1) in the HIV+ and HIV- group, respectively. The OR of testing positive at the SARS-CoV-2 antibodies test was higher in students compared to workers (AOR:2.36[95%CI 1.20-4.88], $p=0.038$). There were no differences based on HIV status ($p=0.085$). COVID-19 symptoms were reported by 68(28.2%) people with a positive SARS-CoV-2 test, lasting in most cases (76.6%) 3-7 days, with no differences based on HIV status ($p=0.527$, $p=0.204$). None of the symptomatic patients required hospitalization.

Conclusion: Young people complied well with COVID-19 preventive measures and no differences were found in seroprevalence or clinical presentation based on HIV status. The higher risk among students suggests the role of the schools in the spread of the virus. It's important to continue monitoring the impact of COVID-19 on PLWHIV to better understand its effect on screening and adherence to treatment.

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Improving Access and Coverage of COVID-19 Vaccination Among People Living With HIV in South-South Nigeria

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Background: People Living with HIV have an increased risk of severe illness and death from COVID-19, however, uptake for COVID-19 vaccination remains suboptimal for this at-risk population. USAID through funding from PEPFAR implemented a vaccination SURGE to improve the uptake of the COVID-19 vaccine among PLHIV in Nigeria. This paper summarizes the COVID-19 vaccination surge implementation strategy and reports on vaccination uptake among PLHIV in Nigeria. The vaccination SURGE implemented in Akwa Ibom and Cross River states, Nigeria, between January to September 2022, was targeted at PLHIV (>18 years), and strategies implemented were retrospectively grouped using the EPIS framework.

Material and Methods: During the exploratory phase, brainstorming sessions were conducted with key stakeholders, including the State Primary Health Development Agency (SPHCDA) in charge of vaccination, community gatekeepers and the Network of People Living with HIV in Nigeria (NEPWHAN), to identify potential barriers and facilitators to vaccine uptake. In the preparatory phase, advocacy visits were conducted to the identified stakeholders to gain their buy-in and strengthen collaboration; healthcare workers and NEPWHAN members were trained in Inter-Personal Communication and Counselling (IPCC) to improve communication skills needed to address myths and misconceptions linked to COVID-19 vaccines; PLHIV were engaged as vaccine ambassadors to activate their network and sensitize members; and at least two mobile teams were formed in each of the 34 supported Local Government Areas (LGA), comprising of healthcare workers, trained as vaccinators and recorders, and integrated into the

ART service flow at the facility and community. Implementation commenced in April 2022 across 155 ART clinics and 2,422 ARV drug pickup points within the community. COVID-19 report was documented in the Electronic Medical Records daily, profiled and triangulated with commodity utilization weekly to ensure real-time updates, and address data quality issues and implementation challenges.

Results: COVID-19 vaccination coverage among PLHIV improved from 1.0% (1797/111665) in December 2021 to 70.8% (128187/180972) in September 2022, with 74.8% (95874/128187) fully vaccinated and 25.2% (32313/128187) partially vaccinated. 89.8% (115080/128187) of the PLHIV ever vaccinated occurred during the implementation phase of the SURGE.

Conclusion: The success of the SURGE can be attributed to the multi-faceted approach to implementation.

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A Rapid Test Conducted in Four Primary School in Maputo-Mozambique, Reveals That the Proportion of School-Aged Children Exposed to SARS-CoV-2 Is Higher Than the Reported by Their Guardians

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Background: In Mozambique, schools were closed due to the children's theoretically high risk of infection and transmission by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and the onset of clinical manifestations that could lead to a fatal outcome and hospitals overcapacity. Has the pandemic evolved differently in each

country, local evidence of childhood SARS-CoV-2 infection was recommended as an evidence-based strategy to reduce the spread of SARS-CoV-2 transmission. We seek to provide local evidence of SARS-CoV-2 exposure in school-age children after school re-opening in Maputo city and province.

Material and Methods: We conducted a cross-sectional study between August and November 2022 with school-age children from four schools in Maputo city and province. Anti-SARS-CoV-2-specific immunoglobulin G (IgG) antibodies were measured using a point-of-care rapid test (Panbio, COVID-19, Abbott, Jena, Germany). A semi-structured questionnaire was administered to the children and their guardians to collect sociodemographic and clinical data. The 95% confidence interval (CI) was calculated. Differences between prior exposure to SARS-CoV-2 infection reported by the children's guardians compared to the IgG test results were assessed using the Z-test to compare proportions.

Results: A total of 746 school-age children were included. Anti-SARS-CoV-2 IgG antibodies were detected in 79.1% (587/742; 95% CI: 76.2 – 82.0), prior laboratory diagnosis of SARS-CoV-2 reported by children's guardians was 0.7% (5/746; 95% CI: 0.1 – 1.3); and the absolute difference was 78.4% (95% CI: 73.4 – 83.4; p-value < 0.001). Of the children with prior SARS-CoV-2 positive diagnosis, 80% (4/5) had symptoms, and 20% (1/5) had been hospitalized.

Conclusion: Exposure to anti-SARS-CoV-2 IgG in school-age children is higher than the laboratory diagnosis reported by their guardians in four primary schools in Maputo city and province, Mozambique, suggesting mild or asymptomatic manifestation. Asymptomatic children may not be diagnosed in Mozambique's testing algorithm, which only tests symptomatic personnel, and thus may not effectively control, and mitigate the disease spread.

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Determinants of SARS-CoV-2 Infection Among Travellers in 2022 in Cameroon: Toward Evidence-Based International Regulations for African Countries

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Background: In Cameroon, COVID-19 infection spread rapidly in the general population, with up to 122,375 confirmed cases and continuous monitoring. However, situation reports focused on travelers are lacking, which limit revision/standardisation of COVID-19 international regulations across African countries. We thus sought to update the burden of COVID-19 and its epidemiological, virological and clinical features among international travellers in the Cameroonian context.

Material and Methods: A laboratory-based study was conducted among international travellers tested for SARS-CoV-2 from January 2022 through June, 2022 at Chantal BIYA International Reference Centre, Yaounde-Cameroon. SARS-CoV-2 diagnosis was performed on nasopharyngeal swabs using Realtime qPCR. Statistical analyses were performed using SPSS and $p < 0.05$ considered statistically significant.

Results: Out of 22,194 individuals (57.4% male) enrolled, 6.4% was symptomatic and 7.6% (1685/22,194) were vaccinated. The overall SARS-CoV-2 positivity was 0.7% (147/22194) from 0.2% (2/1047) in children (0-14 years) to 0.8% (11/1365) in elderly (>64 years), $p = 0.107$. Positivity rate among symptomatic individuals was 2.5% versus 0.5% among asymptomatic, $p < 0.001$; and being symptomatic (aOR [95% CI]: 4.8 [3.2-7.1], $P < 0.001$)

was a predictor of SARS-CoV-2 positivity. Positivity among vaccinated versus non-vaccinated individuals was 0.83% versus 0.58% respectively, $p = 0.21$. The month of February had the highest positivity rate (7.6%), and the month May with the lowest positivity rate (0.8%). Regarding PCR cycle threshold (CT), 32.0% of positive individuals had a $CT < 30$. Among confirmed cases, those aged >40 years showed a non-significant higher proportion in high viral-load ($CT < 20$): 9.8% versus 7.8%, $p = 0.682$; symptomatic travellers showed a higher proportion with high viral-load (22.2%) compared to asymptomatic (5.4%), $P = 0.003$.

Conclusion: In the current state of low SARS-CoV-2 burden (<1%) among international travellers in Cameroon, positivity is associated with symptoms and seemingly higher among the elderly. This evidence underscores the implementation of a symptom-driven "track-and-test" strategy focused on symptomatic and elderly travellers, regardless of vaccination status across Africa.

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Wastewater Surveillance for SARS-CoV-2 in the City of Maputo, Mozambique

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Background: Wastewater-based epidemiology (WBE) can be used to identify infectious agents in communities. For limited resource settings such as Mozambique where access to SARS-CoV-2 diagnostic and financial resources is scarce, WBE data can be efficient in assessing emerging SARS-CoV-2 variants of concern (VoCs) and future outbreaks. In this study, we show how WBE can be used to quantify and identify SARS-CoV-2 VoCs from both networked sewerage and onsite sanitation systems in Maputo, Mozambique.

Material and Methods: We conducted passive sampling weekly by submersing electronegative

membranes for 24 hours in the wastewater inlet and the fecal sludge receiving pond at a sewage treatment plant. RNA was extracted directly from the membranes and screened for SARS-CoV-2 by reverse-transcription quantitative PCR (RT-qPCR) targeting the ORF1ab gene. Whole genome sequencing was performed on samples with cycle threshold (ct) value below 35, using the Illumina COVIDSeq™ Test with ARTIC v3/v4 primer pools on the MiniSeq and iSeq100 Illumina platforms. After adapter trimming with BBDuk, alignment with minimap2, and primer trimming and quality filtering with iVar, we identified single nucleotide variants and estimated the abundance of the corresponding Pango lineages using Freyja.

Results: A total of 58 samples from wastewater (n=31), hospital influent (n=6) and fecal sludge (n=21) were collected between April and December 2022. Viral RNA for SARS-CoV-2 was detected in 86% (50/58) of samples. At least one sample was positive each epidemiological week, except for weeks 19 and 23. No correlation between the average ct value of the SARS-CoV-2 in wastewater and the weekly confirmed clinical cases was observed. Of the 50 positive samples, 68% (34/50) were successfully sequenced. Omicron sub-lineages BA.4 and BA.5 were detected in samples collected in April (week 17), prior to its first genome identification from clinical samples in May (week 18). Other sub-lineages have also been detected through WBE (BQ.1 and BF.7) and not in clinical samples.

Conclusion: A successful WBE program utilizing passive sampling was established in Maputo, Mozambique. We have demonstrated that WBE samples can be used to identify circulating SARS-CoV-2 variants even before their identification in clinical samples, supporting the potential utility of this approach for SARS-CoV-2 surveillance.

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Social, Epidemiological and Health System Factors Affecting Uptake and Acceptability of Rapid Diagnostic Testing for COVID-19 in Sub-Saharan Africa

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Background: SARS-CoV-2 rapid diagnostic tests have potential to reduce the burden of COVID-19 in sub-Saharan Africa when used alongside other interventions, including early treatment of high-risk individuals. Studies conducted during the height of the pandemic have shown high levels of willingness to self-test (ST) for COVID-19. As COVID-19 decreases globally, decentralised ST may contribute to 'living with' agendas through reprioritising those at the highest risk of adverse outcomes. We investigated client and provider reactions to both provider-delivered and COVID-19-ST in Malawi, Nigeria and Zimbabwe in 2022-23, in the context of substantial regional decreases in reported cases.

Material and Methods: Rapid provider-delivered diagnostic testing was offered to health care workers and clients in primary care facilities and workplace settings, funded by the Unitaid/STAR 3ACP Project. COVID-19-ST was introduced for one-off and repeat testing opportunities and for contact tracing. We developed a 'living diary' to monitor policy, epidemiological and media context over time. We conducted semi-structured interviews across all three countries with 88 providers and 131 clients to explore acceptability, fidelity, feasibility and appropriateness. Cross-sectional, longitudinal analysis was conducted using a combination of thematic and framework approaches.

Results: Preliminary findings show that responses to COVID-19 provider-delivered and ST were influenced by wider social, policy and epidemiological contexts. Rumours of COVID-19 as a disease affecting 'others' were dominant, and fears of testing were exacerbated through unfamiliarity. Techniques comparing diagnostic processes to malaria and HIV RDTs helped to overcome testing hesitancy alongside trust in providers. COVID-19-ST was a preferred option and could increase normalisation and acceptability. Fears transitioned to enthusiasm post-testing but

exacerbated preferences for serial testing over vaccination.

Conclusion: Normalisation through increased access to COVID-19-ST will expand demand and uptake in sub-Saharan Africa – an underserved region for COVID-19 services. Community sensitisation around the ‘conditions’ for testing that reflect wider policy, social and epidemiological contexts are necessary to ensure test kits are used appropriately. Since diagnostic testing is insufficient to reduce the burden of COVID-19 exclusively, emphasis on vaccination benefits and early diagnosis plus oral treatment of highest risk individuals should be included within public health campaigns promoting testing.

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Integration of Screening and Rapid Testing for COVID-19 Into Primary Care: Lessons Learned From Routine Data Collection in Malawi and Nigeria

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Background: Scale-up of COVID-19 testing in Africa was slow relative to other regions, even for highest priority groups at risk of severe disease. We provided training and supply to enable COVID-19 antigen rapid diagnostic testing (CV19-RDT) within primary care in Malawi and Nigeria. Here, we consider challenges with routinely-collected data relevant for future outbreak scenarios.

Material and Methods: Funded through Unitaid/STAR 3ACP Project, symptom screening and CV19-RDT were incorporated into 36 primary

care sites in Nigeria and 12 in Malawi. Routinely-collected data were extracted from national surveillance databases intended to capture individual records of patient characteristics and results. These data were compared to research study data of symptomatic patients at overlapping sites in Nigeria.

Results: Routine primary care testing included 3972 patients tested between March and October 2022 - 2343 in Malawi and 1617 in Nigeria - of whom 128/2353 (5.5%) and 27/1617 (1.7%) had a positive result respectively. Age distribution was similar, but a greater proportion of males were observed in Malawi than Nigeria (61% versus 31%). Data capture of symptoms, vaccination status and COVID-19 risk factors were severely limited in both countries. Vaccination status was “unknown” or missing for 94.6% of records in Malawi and 10.2% in Nigeria, but with 90% of Nigerian patients reportedly unvaccinated despite much higher coverage nationally. Symptom and comorbidity data were missing for 95% of Malawi participants. Nigerian symptom data were available and indicated a high proportion of asymptomatic testing (72%). Neither comorbidities nor other risk indicators are captured within Nigeria’s surveillance system. By comparison, research data in Nigeria from 132 patients attending 4 primary clinics within the same region showed a substantial burden of relevant comorbidities (56.1%) and vaccination uptake consistent with national estimates (54% with any dose).

Conclusion: Rapidly implementing digital reporting tools was challenging for low- and middle-income countries with little prior expertise and infrastructure to support digital data capture and reporting within routine care. Process evaluation pinpointing where difficulties arose may provide the insight to develop a framework that better supports rapid implementation of adaptive systems in the event of subsequent pandemics.

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Prevalence of SARS-CoV-2 Among Persons on HIV Antiretroviral Treatment in Mozambique: Baseline Characteristics Among Participants of the COVIV Cohort Study

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Background: The impact of the COVID-19 epidemic among persons living with HIV (PLHIV) is unknown in Mozambique. The COVIV (“COVID/HIV”) cohort study, implemented in three provinces, aims to investigate prevalence and incidence of SARS-CoV-2 among PLHIV in care. The present analysis describes the baseline characteristics of enrolled participants.

Material and Methods: Participants were recruited at three health facilities in Maputo, Inhambane and Zambézia provinces. All were screened at baseline for COVID-19 risk, using a standardized risk assessment questionnaire, and for SARS-CoV-2 antibodies, using Abbott™ IgM/IgG antibody rapid test (AB-RT). Those with either positive risk assessment or AB-RT underwent SARS-CoV-2 PCR testing. Participants, selected at convenience, were enrolled in one of the following arms, depending on the presence of active infection/exposure, irrespectively of COVID-19 vaccination status: 1) not-actively-infected/not-exposed (AB-RT and PCR negative); 2) active COVID-19 infection (PCR positive); 3) not-actively-infected/exposed (AB-RT positive and PCR negative).

Results: A total of 1286 PLHIV were recruited from June 2021 to April 2022 (which included the 3rd [June-September2021] and 4th wave [December2021-January2022] of the country’s epidemic); 637 (49.5%) in Maputo, 296 (23.0%) in Inhambane, 353 (27.4%) in Zambézia. Median age was 40 years (IQR [interquartile range]:32-49), 65.3% (840/1286) were female. Median time on ART was 5.3 years (IQR:2.7-8.7), median CD4 count was 506 cells/mm³ (IQR:367-671), and 1016/1076 (94.4%) who had a viral load result within 12 months prior to enrollment were virally suppressed. Among enrolled participants, 410 (32%) tested positive for SARS-CoV-2 IgG/IgM, and 777 (60.4%) underwent PCR testing based on risk assessment/AB-RT. Among those with PCR testing, 64 (8.2%) had a positive result. Most active infections (53 [82.8%]) were identified in Maputo. Of all, 54 (84.4%) occurred between June-August 2021, 6 (9.4%) in December 2021-January 2022. No differences were seen in baseline CD4 count or viral load between the three arms (p=0.64 and p=0.07, respectively).

Conclusion: About one in three PLHIV in this cohort were reported being exposed to SARS-CoV-2; one in 20 were confirmed actively infected with SARS-CoV-2, consistent with timing of COVID-19 epidemic waves in Mozambique. Follow-up of active infection is important to monitor clinical, immunological and virologic HIV-related short and mid-term outcomes.

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Assessing Uptake of COVID-19 Vaccine and Associated Factors Among Persons Aged 13-80 in Wakiso District, Uganda. A Cross-Sectional Study

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Background: Vaccination is an essential measure for limiting the pandemic worldwide. Despite this, Uganda is among the countries still struggling with COVID-19 vaccine uptake yet little is known about the associated correlates in a population-based surveillance in urban settings. Therefore, this study aimed to determine current COVID-19 vaccine uptake and associated factors in Wakiso district, Uganda.

Material and Methods: Data from a cross-sectional study was conducted from March 1st to September 30th, 2021, among residents of Wakiso district in the Population Health Surveillance cohort implemented by the Africa Medical and Behavioral Sciences Organization. Semi-structured data was collected and variables such as age, marital status, education, occupation, and chronic illnesses including HIV, diabetes and cancers were included in the analysis. At bivariate analysis, variables with $P < 0.20$ were included in the regression model. A multivariable modified Poisson regression was used to determine the predictors of COVID-19 vaccine uptake.

Results: Of 1,903 participants included in this study, COVID-19 vaccine uptake was 22.4% (427/1,903). The results from multivariable modified Poisson regression revealed that the age group of 13-19 years (APR=0.59; 95% CI: 0.47, 0.74), 20-29 years (APR=0.66; 95% CI: 0.52, 0.84), 30-39 years (APR=0.13; 95% CI: 0.09, 0.19) compared with the 40-49 years, Post-primary level (APR=1.58; 95% CI: 1.32, 1.89) compared to primary level, Agriculturalists (APR=1.92; 95% CI: 1.13, 3.26),

Housework (APR=1.85; 95% CI: 1.09, 3.16) students and government staff (APR=3.44; 95% CI: 2.01, 5.89) compared to construction & mechanic workers were associated with COVID-19 vaccine uptake.

Conclusion: Overall, there is suboptimal uptake of COVID-19 vaccine. The vaccine uptake is still low compared to the recommended Pan-American Health Organization (PAHO) target of 70%. Age, education, and occupation were all associated with vaccine uptake. Health education messages that aim at increasing vaccine uptake should target young age groups.

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Development of Botswana COVID-19 Vaccination Toolkits, 2022: A Qualitative Study and Acceptability Assessment

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Background: Early 2022, although approximately 80% of the vaccine eligible population of Botswana received a COVID-19 vaccination, low coverage persisted in some groups. COVID-19 vaccination uptake stagnated, including booster uptake across all groups. COVID-19 vaccination confidence challenges among selected groups were assessed to develop culturally appropriate vaccination toolkits to increase vaccination coverage.

Material and Methods: From July-August 2022, phase 1 of a qualitative study was initiated to assess vaccination facilitators and barriers, with 32 focus group discussions (FGDs) completed across two rural and two urban settings in Botswana. Participants were separated into four groups (men age 18-29 years, women age 18-29 years, parents/guardians of adolescents aged 12-17 years, and healthcare workers (HCWs) who provided vaccinations), stratified by vaccination status (fully vaccinated; partially/un-vaccinated). FGD size ranged from 5-10 people. Transcripts were translated into English from Ikalanga and Setswana

and reviewed. Initial observations informed codebook drafting, followed by coding and themes identification. Themes were used to develop provider and public facing COVID-19 vaccination toolkits. In November 2022, phase 2 was completed to assess toolkit acceptability, with 10 FGDs across one rural and one urban site, including partially/un-vaccinated people from all groups and vaccinated HCWs.

Results: Phase 1 indicated people were aware of benefits of COVID-19 vaccination, with higher frequency of awareness reported by those vaccinated. People heard about COVID-19 vaccine adverse events, with partially/un-vaccinated people reporting more experienced or observed events. Both vaccinated and partially/un-vaccinated people reported accessibility concerns. Facilitation themes included receiving adequate explanations about what to expect and how to treat adverse events, and getting concerns and questions addressed by HCWs. Barriers included confusion or uncertainty about COVID-19 vaccination protocols. The toolkit materials included clear and transparent answers to frequently asked questions and motivational interviewing techniques. Phase 2 indicated the toolkits increased comfort with COVID-19 vaccines and decreased fear and uncertainty.

Conclusion: This qualitative study identified facilitators and barriers among people and vaccination providers in Botswana. Findings informed toolkit development, which was found to be helpful in reducing fears. Roll out of tool kits across all districts in Botswana is planned as COVID-19 vaccination is routinized into the immunization programme.

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Facilitators to COVID-19 Vaccine Uptake Among Adults in Lilongwe Rural, Malawi

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Background: Despite the COVID-19 vaccine being the most reliable way to control the COVID-19 pandemic, its uptake is influenced by several factors including intrapersonal, interpersonal, institutional and policies, especially among low- and middle-income countries including Malawi. Understanding these factors in rural Malawi is important to come up with effective interventions. The study investigated the facilitators of the uptake of the COVID-19 vaccine among community members of Nkhoma in Lilongwe, Malawi.

Material and Methods: We used a cross-sectional analytical study involving 454 adults with or without the COVID-19 vaccination. Two-stage sampling approach was used: 10 clusters were chosen using random sampling and applied probability proportion to size principle to allocate households for each cluster. One participant was chosen per household by balloting. The participants were interviewed using a questionnaire adapted from World Health Organisation and CDC. The data were entered using Microsoft Access and analyzed with R version 4.2.2. Bivariate and multivariate logistical regression analyses were done.

Results: The COVID-19 full vaccination uptake at Nkhoma was low (40%). Factors facilitating COVID-19 uptake were age in years with an adjusted relative risk (aRR) 1.02 (95% CI: 1.00; 1.04), p-value 0.012, education level aRR 1.92 (95% CI 1.10-3.39) p-value 0.023, presence of comorbid condition aRR 2.42 (95% CI 1.25-4.70) p-value 0.009, history of COVID 19 infection in relatives aRR 0.35 (95% CI 0.15-0.78) p-value 0.013, confidence in vaccine benefits aRR 3.6 (95% CI 1.37-10.63) p-value 0.013, trust in new vaccine aRR 3.91 (95% CI 1.98-7.72) p-value <0.001, and vaccine ease of access aRR 5.81 (95% CI 2.51-15.08) p-value <0.001.

Conclusion: The findings show that significant facilitators of COVID-19 vaccine uptake are individual factors such as age (years), education level and presence of comorbidity, interpersonal factors like history of COVID-19 infections in a relative and finally, institutional factors like confidence in vaccine benefits, trust in new vaccine and vaccine ease of access. It is crucial to consider these factors when developing programs or policies to increase the uptake of COVID-19 vaccines at the community level.

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Prevalence and Factors Associated With Willingness to Receive COVID-19 Vaccine in Wakiso District, Uganda

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Background: Vaccination is essential for controlling the COVID-19 pandemic. However adequate vaccine coverage is a critical to the effectiveness of the vaccine at a population level. Data on acceptability of the vaccine in Urban areas are limited. This study examined the prevalence and factors associated with willingness to receive COVID-19 vaccine in the predominantly urban Wakiso district of Uganda.

Material and Methods: Data were obtained from a cross-sectional study conducted from March 1st, 2021, to September 30th, 2021 in the urban population-based cohort of the Africa Medical and behavioral Sciences Organization (AMBSO). Multivariable modified Poisson regression analysis was used to estimate adjusted prevalence ratios (aPR) and 95% confidence intervals of willingness to accept the COVID-19 vaccine.

Results: A total of 1,903 participants were enrolled in the study; 61% of whom were females. About 63% of participants indicated willingness to accept the COVID-19 vaccine. Younger age groups (13-19 and 20-29) were less likely to accept the vaccine compared to the persons ages 40-49 years (aPR=0.79; 95% CI: 0.74, 0.84 for the 13-19 years and 0.93; 95% CI: 0.88, 0.98 for age group 20-29, compared to those ages 40–49 years. Post-primary education (aPR=1.05; 95% CI: 1.02, 1.09 compared to primary level), being a students and government staff (APR=1.13; 95% CI: 1.04, 1.23 compared to construction and Mechanic workers) were associated with willingness to receive COVID-19 vaccine.

Conclusion: A substantial proportion of individuals were not willingness to receive the COVID-19 vaccine. More effort is needed to reduce vaccine hesitancy, especially among the young and people with lower formal education.

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Alterações Hematológicas e Bioquímicas de Indivíduos com SARS-CoV-2 Associadas a Severidade da COVID-19 em Maputo, Moçambique

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Background: A infecção pelo o SARS-CoV-2 causa doença grave numa minoria dos indivíduos infectados. Alterações em parâmetros das principais series hematológicas, e de vários parâmetros bioquímicas, tem sido reportada em pacientes com COVID-19. Contudo, até o momento, pouco se sabe sobre estas variações no contexto africano. Aqui, avaliamos alterações hematológicas e bioquímicas em indivíduos moçambicanos com teste positivo para SARS-CoV-2, com diferentes apresentações clínicas.

Material & Métodos: De Fevereiro de 2020 a Janeiro de 2022 foram incluídos 85 participantes, dos quais 55.3% do sexo feminino, a partir dos centros de tratamento da COVID-19 e postos de colheita de amostras da COVID-19 em Maputo. Participantes foram agrupados como controlos negativos (n=22), assintomáticos (n=21), com sintomas ligeiros (n=16), moderados (n=5) e severos (n=21). Amostras de sangue periférico foram usadas para avaliação do hemograma e parâmetros bioquímicos. O diagnóstico de SARS-Cov-2 foi feito usando amostras oro- e naso-faríngeas. O teste Mann-Whitney foi usado para comparação das medianas entre os grupos.

Resultados: A mediana das idades foi de 39 anos (IQR: 19-85). Pacientes com quadro severo apresentavam elevados níveis de leucócitos (8.13 103/μL; p=0.001, p=0.001 e p=0.0001), neutrófilos (6.73 103/μL; p=0.0001, p=0.0001 e p=0.0001), ALT (54.60 U/L; p=0.012, p=0.026 e p=0.025), glucose (10.69 mmol/L; p=0.0001, p=0.0001 e p=0.001), ureia (35.92 mg/dL; p=0.002, p=0.002 e p=0.006) e proteína-C-reativa (129.61 mg/L; p=0.0001, p=0.0001 e p=0.0001), e baixos níveis de linfócitos totais (0.93 103/μL; p=0.0001, p=0.0001 e p=0.0001) e albumina (3.66 g/dL; p=0.0001, p=0.001 e p=0.0001), relativamente a indivíduos negativos, assintomáticos e com sintomas ligeiros, respetivamente. Observamos um decréscimo na contagem de eosinófilos (0.24 103/μL, p=0.07) e níveis de colesterol (118.28 mmol/L; p=0.008) em pacientes com quadro severo em relação a aqueles assintomáticos. Não observamos alterações significativas em nenhum dos parâmetros da serie vermelha e plaquetária nos pacientes com COVID-19.

Conclusão: Nossos resultados corroboram com as alterações significativas observadas em vários parâmetros bioquímicos e da serie leucocitária em casos severos da COVID-19 reportados em outros contextos. A estabilidade nas series vermelha e plaquetária em indivíduos com sintomas severos, diferente do reportado em outros contextos, sugere que possa haver peculiaridades na manifestação da COVID-19 no contexto moçambicano.

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HIV em Pessoas Rastreadas Para COVID-19 e TB no Posto Comunitário do Distrito de Chókwè, Província de Gaza

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Background: O HIV continua um problema de saúde pública a nível global. Em 2021 o mundo registou 1.5 milhões de novas infecções e 650.000 mortes por causas relacionadas ao HIV. No mesmo período,

quase 25 milhões de pessoas viviam com HIV na África Subsaariana e Moçambique reportou que cerca de 2 milhões de habitantes são Pessoas Vivendo com HIV. Em meio a um esforço global e local para controlar a epidemia do HIV, surgiu a pandemia da COVID-19. O mundo já registou mais de 750 milhões de casos e 6 milhões de mortes pela doença. Em Moçambique, foram reportados 231.994 casos e 2233 mortes relacionadas à COVID-19. Várias estratégias foram implementadas para controlar a transmissão da COVID-19, e o rastreio comunitário foi uma delas.

Intervenção: Durante 10 meses implementamos o rastreio simultâneo de COVID-19 e TB em pessoas com sintomatologia respiratória num posto comunitário (PC) instalado no distrito de Chókwè, província de Gaza. Os casos presuntivos realizaram o AgRDT COVID-19 e forneceram amostra de expectoração para o teste GeneXpert de TB que eram transportadas diariamente para a Unidade Sanitária de referência. Os resultados eram capturados no instrumento de recolha de dados do sistema. Informações sobre co-morbilidades como HIV também foram colhidas. Pessoas com diagnóstico confirmado de COVID-19/TB foram ligadas aos cuidados e tratamentos.

Resultados: O PC rastreou cerca de 1080 pessoas. Destas, 94% realizaram AgRDT COVID-19, 21% colheram amostra para TB. Dos testados, 65 utentes foram positivos para COVID-19 e 9 para TB. O sero-estado positivo para o HIV foi reportado por 73% das pessoas diagnosticadas com COVID-19.

Conclusão: O PC permite a testagem de COVID-19/TB nas comunidades e possibilita a ligação a cuidados e tratamento centrados no utente. As pessoas rastreadas podem receber serviços preventivos como TPT. Igualmente, os contactos de casos positivo podem aceder ao PC para receber serviços de diagnóstico. A adição da testagem de TB e HIV pode permitir que mais utentes tenham acesso ao tratamento preventivo ou a cuidados para TB e HIV. Além disso, essa estratégia de diagnóstico precoce ajuda a quebrar a cadeia de transmissão das doenças respiratórias, evitando a disseminação nas populações-alvo.

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From Partner to Government-Led Programming in Zimbabwe: Increasing Sustainable Subnational Ownership of Vmmc Through Integrating Input and Output Financing With Existing Health Financing Systems for Sustainability

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Background: Zimbabwe's INTEGRATE program seeks to strengthen the Ministry of Health and Child Care (MoHCC) managerial, financial, and operational capacity, and to transition from vertical partner-led VMMC programming to sustainable, horizontal, and integrated HIV biomedical prevention. VMMC input and output financing have been partner-led, compromising MoHCC ownership of program management and coordination, and leaving partners the capacity for efficient translation of service and demand inputs to quality outputs. INTEGRATE channels input and output financing through existing health financing systems to increase subnational ownership, management, and coordination.

Material and Methods: Milestone-based fixed-price sub-agreements channel VMMC service and demand input financing through MoHCC to 27 districts. Sub-agreements defined input milestones with prices based on historical costs. Milestone definitions tied to outputs align demand and service planning. Districts were paid for milestone delivery over six months. Integrating VMMC output financing with Zimbabwe's results-based financing (RBF) in four pilot districts harmonized VMMC and RBF verification, invoicing, and payment systems and capacitated communities, facilities, and districts to integrate VMMC with RBF

implementation. VMMC RBF shifts from individualized (80:20) to structural (25:75) incentives in the service delivery: structural split.

Results: Transition to sub-granting did not result in substantially reduced VMMC delivery. Partner handholding reduced at different paces as provinces and districts overcame challenges in fund management, translating inputs to outputs. Sites reporting VMMC outputs increased under RBF, with quality scores and data improving at some sites, districts, and provinces leading quality support and supervision. Integrating input and output financing gives signs of eliminating the "blank check" risk of spending decisions that do not translate to outputs. Outreach team size and per diem efficiencies were realized.

Conclusion: Integrating VMMC input and output financing with health financing systems is feasible and shows potential for increasing subnational ownership, management and coordination, improving quality and accountability, and supporting institutional RBF by expanding purchased indicators. Tying sub grant milestones to outputs can promote the translation of input spending to quality outputs. Integrated input and output financing can expand to other RBF indicators.

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Predictors of Frailty Transitions in Persons Aging With HIV (PAH) in Uganda: The HASA Prospective Cohort

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Background: The scale up of ART in sub-Saharan Africa (SSA) has resulted into increased life expectancy. Frailty is an aging-related syndrome, heightened by HIV infection, marked by diminished physiologic reserve and vulnerability to stress and is predictive of hospitalization or death. Older persons can easily transition from one state of frailty to another. We aimed to describe the frailty transitions and the risk factors of transition in

patients aged ≥ 60 years in Kampala, Uganda during 1 year follow up.

Material and Methods: We used the Markov multi-state model to estimate frailty transition probabilities in adults ≥ 60 years during 1 year of follow-up, the data that is so far collected. Four states of possible transition were considered: robust, pre-frail, frail, and death. Frailty was assessed using the physical frailty phenotype. Covariates were selected into the model based on their theoretical, clinical, and statistical relevance to a stable parsimonious model. We used the msm in R software to analyze the frailty transition intensities.

Results: We included 451 participants. At baseline, the median age was 64 years (IQR 60-68) 231 (51.2%) were males. The baseline CD4 count was 664 (IQR 461-795) cells/mm³. Majority 412 (91.8%) had viral load less than 50 copies/ml, and 130 (28.8%) had ≥ 2 non-communicable diseases (NCDs). Females were associated with a lower risk of transitioning from robust to pre-frail, pre-frail to robust compared to males (HR: 0.93 (0.42-2.08), HR: 0.60 (0.26-1.40) respectively. Females had an increased risk of transitioning from pre-frail to frail, pre-frail to death compared to males (HR: 1.78 (0.66-4.82), (HR: 1.17 (0.14-9.99) respectively. PAH with 2 or more NCDs were more at risk of transitioning from robust to pre-frail, pre-frail to frail (HR: 1.28 CI (0.54-3.01), (HR: 2.74 (1.05-7.15) respectively. Pre-frail PAH with 2 or more NCDs were at a higher risk of death compare to those with 1 NCD (HR: 1.59 (0.22-11.7).

Conclusion: Gender and number of NCDs are risk factors associated with frailty transitions. Understanding the predictors of frailty transitions will help design of interventions that support transition into better frailty states.

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Silent Transfer Determination using HIV Recency Testing in Zambia: Experience From the Catholic Relief Services Epidemic Control 90-90-90 (EpiC 3-90) Project

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Background: People living with HIV (PLHIV) who silently transfer from one health facility to another, present a challenge in the correct estimation of the burden of HIV in the population, as they may be classified as recently identified in the destination facility. An additional challenge, is the estimation of attrition, thus affecting HIV programming. The HIV recency testing programme has provided an opportunity to identify clients who have a suppressed VL result (<1,000 copies/ml) prior to ART initiation. We utilized HIV recency programme data to identify silent transfers and design interventions tailored to mitigate this challenge.

Material and Methods: Newly identified eligible PLHIV, (≥ 15 years old), were enrolled in the programme which identifies recent HIV-1 infections among newly diagnosed HIV-infected clients using an algorithm that combines rapid test for recent infection (RTRI) with HIV Viral Load (VL) testing. Clients who had a suppressed HIV VL result (<1000 copies/mL) before ART initiation were classified as silent transfers. We present findings from Lusaka Province health facilities for the period January 2020 to December 2022.

Results: During the period under review, we collected 33,855 samples and received 93% (n=31,503) VL results. Approximately 35% (n=10,891) of the 31,503 results received had a suppressed VL (<1000 copies/mL) and were categorised as silent transfers from 2020 to 2022. The silent transfers were 34% (663/1,938) in 2020; 34% (3,512/10,445) in 2021 and 35% (6,716/19,120) in 2022. Out of the 6 districts in the province,

Lusaka accounted for 82%(8,889/10,891) of all the silent transfers and therefore requires prioritization in addressing this problem.

Conclusion: Strategies to curb the “silent transfers” must be employed to optimize the continuity of care. These cause inaccuracies in the number of newly identified HIV-infected clients and in data-driven decision-making for HIV epidemic control in Zambia. Mitigation may include client education, effective use of HIV screening tools and introduction of biometric identification systems.

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PrEP Knowledge and Coverage: Results From the 2022 National Antenatal HIV Sentinel Survey

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Background: Strengthening coverage of HIV prevention strategies such as pre-exposure prophylaxis (PrEP) is essential to ending the epidemic in South Africa. We estimated knowledge and coverage of PrEP among pregnant women.

Material and Methods: Using the national cross-sectional antenatal HIV sentinel survey (conducted February - April 2022), we performed descriptive and logistic regression analyses. Women knew about PrEP if they had ever heard of PrEP and were eligible for PrEP if they were HIV negative and had: 1) an HIV positive/status unknown partner; 2) multiple sexual partners in past 12 months; 3) an STI in preceding 6 months; or 4) sex under the influence of alcohol or drugs in past 6 months. All analyses accounted for the survey design. Multivariate models were adjusted for age, education, gravidity and province.

Results: 43.86% (n=10053) HIV negative women were PrEP eligible. Among eligible women, 33.72%

(n=3193) knew about PrEP, 3.65% (n=355) took PrEP before pregnancy and 6.15% (n=641) were currently on PrEP. Knowledge of PrEP was more likely among those with a tertiary education (adjusted Odds Ratio (aOR)=1.63; 95% confidence interval (CI): 1.46-1.82) than those with a secondary education or less. First antenatal care (ANC) visit attendees were less likely to know about PrEP (aOR=0.67; 95% CI: 0.61-0.74) and to be currently using PrEP (aOR=0.69; 95% CI: 0.57-0.83) than follow-up visit attendees. Those who had never tested for HIV before pregnancy were less likely to know about PrEP (aOR=0.52; 95% CI: 0.46-0.58), use PrEP before pregnancy (aOR=0.38; 95% CI: 0.25-0.56) or currently use PrEP (aOR=0.70; 95% CI: 0.55-0.89) compared to those who have tested. Married/cohabiting women had lower PrEP knowledge (aOR=0.60; 95% CI: 0.54-0.66), and coverage (before pregnancy: aOR=0.60; 95% CI: 0.48-0.76); during pregnancy: aOR=0.62; 95% CI: 0.51-0.75) compared to non-cohabiting. Knowledge and coverage of PrEP was better in KwaZulu-Natal (aOR=3.00; 95% CI: 2.51-3.57, aOR=5.25; 95% CI: 3.49-7.91) and Mpumalanga (aOR=2.28; 95% CI: 1.79-2.91, aOR=3.99; 95% CI: 2.56-6.22) compared to Gauteng.

Conclusion: Overall PrEP knowledge and coverage was low among eligible women. Entry into ANC plays an important role, ensuring women are knowledgeable about and initiate PrEP. Efforts are needed to improve HIV prevention strategies.

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A Multi-Level Analysis of the Determinants and Cross-National Variations of HIV Testing Among Youth Engaging in Risky Sexual Behaviours in Sub-Saharan Africa: Evidence From the Demographic Health Surveys

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Background: HIV/AIDS remains a major public health problem, especially in sub-Saharan Africa (SSA). HIV testing is widely accepted as the cornerstone of HIV prevention programs because of its multiple benefits but uptake is still low, especially among young adults engaging in risky behaviors. The objective of this study was to assess the determinants and cross-national variations of HIV testing among youths (15-24 years) engaging in risky sexual behaviors in SSA.

Material and Methods: Descriptive statistics and multilevel logistic regression models were applied to Demographic and Health Survey data collected during 2015–2021 from 21 countries of SSA to examine the determinants and cross-national variations of HIV testing in the region. The models include individual-level and contextual region/country-level risk factors. Data were analyzed using STATA 16.

Results: Findings included 77,823 youths aged (15-24 years) engaging in risky sexual behaviors (any of multiple sexual partners (49%), inconsistent condom use (85%), and early sexual debut (18%)); the majority females (70.6%) and aged 20 to 24 years (84.2%). The majority had tested for HIV (87% (79% - 95%)). At the multi-level analysis, the estimates of country and region random effects show significant variations in HIV testing among both men and women across countries partly explained by demographic characteristics as well as HIV/AIDS knowledge and attitude factors. Estimates of intra-unit correlations suggest that about 63% of the total variation in HIV testing among both males and females is attributable to country-level differences. Particularly, males aged more than 19 years had increased odds [OR=1.74, 95% CI (1.57-1.92)] of testing for HIV compared to males aged less than 19. Contrary, females aged more than 19 years [OR=0.34, 95% CI (0.31-0.37)] and females aged less than 20 years [OR=0.84, 95% CI (0.76-0.94)] had reduced odds of testing for HIV compared to males aged less than 19.

Conclusion: The findings highlight the gender disparity in HIV testing disaggregated by age differences indicating the need for age and gender-sensitive HIV prevention interventions, especially in this key population of sexually active youth engaging in risky sexual behaviors.

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Scaling HIV/ Syphilis Dual Rapid Diagnostic Tests for Pregnant Women in Liberia: A Comprehensive Coverage Assessment of Health Facilities in Phase One of the National Roll-Out

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Background: The WHO recommends the use of Dual HIV/Syphilis rapid diagnostic tests for screening pregnant women during antenatal care (ANC). Furthermore, women with HIV-and-syphilis-co-infection are 2.5-times more likely to transmit HIV to their children. Despite over 95% of pregnant women attending at least one ANC visit - of which 80% are screened for HIV, only 8% of all pregnant women have been tested for syphilis. In September 2021, the National AIDS and STI Control Program (NACP) began to scale dual-tests in a phasic manner across Liberia to address this gap.

Material and Methods: Syphilis screening and treatment outcomes were estimated utilizing results from a survey administered across 48 facilities randomly sampled from 160 trained sites in 3 counties. Due to the absence of facility-level data tools in 21% (10/48) of the sampled facilities, we utilized a triangulation-approach to estimate screening coverage combining the rates of commodity availability, provider knowledge and adherence to clinical guidelines, and patient consent. Using data from January to August 2022 we estimate 71% (37,595/ 52,668) of pregnant women attending first ANC were screened for syphilis and that 2.3% (855/ 37,595) were positive of whom 36% (305/855) received treatment.

Results: Introduction of dual-tests increased syphilis screening by nearly ninefold (71%) almost mirroring that of HIV screening (80%). This demonstrates that dual-testing can be easily integrated in national HIV programs, thus

improving point-of-care services and health outcomes for pregnant women and their unborn children. The treatment rate of 36% is likely an underestimation due to poor documentation in patient charts as 96% of facilities reported that syphilis positive clients did not refuse treatment and 97% of providers knew that penicillin-G-benzathine should be administered as same-day treatment.

Conclusion: Dual-tests leverage existing HIV testing-and-treatment services to prevent mother-to-child-transmission of syphilis. As NACP continues to expand dual-testing across the country, considerations to improve routine health information reporting tools to include syphilis treatment should be prioritized to ensure accurate records of treatment coverage. This will also enable the NACP to effectively track accessibility of services even at the lowest levels of the healthcare system and Liberia's progress towards dual-elimination.

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Substance and Alcohol Use and Its Association With Sexual Behavior and Uptake of HIV Pre-exposure Prophylaxis and Testing In Youth in Zimbabwe

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Background: Alcohol and substance use is a growing public health problem in Southern Africa among youth. We investigated the prevalence of substance and alcohol use and its association with sexual behavior, uptake of HIV pre-exposure prophylaxis (PrEP), and HIV testing in youth in Zimbabwe.

Material and Methods: A population-based representative survey of youth aged 18-24 years in three provinces in Zimbabwe was conducted between October 2021 and June 2022. A questionnaire collected data on hazardous drinking

(HD) (AUDIT score ≥ 8), illicit substance use (SU), sexual behavior, HIV testing, and PrEP uptake. All participants underwent anonymized HIV testing. A randomly selected subset in 2 provinces (n=6361) underwent testing for sexually transmitted infections (STIs). Multilevel mixed-effects generalized linear modeling was used to determine associations between substance/alcohol use and outcomes.

Results: Of 17682 participants recruited, 60.8% were female, median age was 20 years, and HIV prevalence was 6.8%. Overall, 4.5% and 7.0% of participants reported HD and SU respectively. HD and SU were more common in males, those aged 21-24 years, those in the highest wealth quantile, and those who were informally employed (compared to formally employed/in education or unemployed individuals) After adjusting for socio-demographic factors, HD was associated with having >1 sexual partner (aOR=3.72, 95%CI=3.00-4.60), receiving transactional sex (aOR=3.30, 95%CI=2.19-4.97), providing transactional sex (aOR=3.42, 95%CI=2.50-4.68), and having an STI (aOR=1.43, 95%CI=1.12-1.84). Substance use was associated with having >1 sexual partner (aOR=3.05, 95%CI=2.64-3.53), inconsistent condom use (aOR=1.27, 95% CI=1.07-1.51) and receiving (aOR=2.76, 95%CI=1.99-3.82) and providing transactional sex (aOR=2.36, 95%CI=1.74-3.19), Notably, HD and SU were both significantly associated with having taken PrEP (aOR=2.07, 95%CI=1.20-3.55 and aOR=1.68, 95%CI=1.11-2.55 respectively) and ever having had an HIV test (aOR=1.85, 95%CI=1.44-2.39 and aOR=1.49, 95%CI=1.23-1.79 respectively).

Conclusion: Substance and hazardous alcohol use was significantly associated with sexual behaviors associated with HIV acquisition, albeit with some possible risk compensation. HIV prevention programs for youth should incorporate screening and testing for substance and hazardous alcohol use.

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HIV Diagnosis, Treatment, and Viral Load Suppression in adults in Mozambique: Results From the 2021 Population-based HIV Impact Assessment Survey (INSIDA 2021)

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Background: Ending HIV as a public health threat by 2030 relies on closing gaps in HIV diagnosis, treatment, and viral load suppression (VLS). The Mozambique Population-based HIV impact assessment (INSIDA 2021) measured the impact of the national HIV program, including estimating the UNAIDS 95-95-95 targets: awareness of HIV-positive status, coverage of antiretroviral (ARV) therapy (ART) among those aware of their status, and VLS among those on ART, as well as among all people living with HIV (PLHIV) aged 15 and above.

Material and Methods: INSIDA 2021, a nationally representative household survey was conducted from April 2021 to February 2022. Participants were interviewed and tested using the national rapid HIV testing algorithm, followed by laboratory-based confirmation using Geenius HIV 1/2 Confirmatory Assay (Bio-Rad). Individuals were defined as “aware” of their HIV-positive status by self-report or if they had an ARV (atazanavir, lopinavir, efavirenz, dolutegravir) detected in their blood. Individuals were categorized as “on ART” by self-report or if they had an ARV in their blood. VLS was defined as HIV RNA < 1000 copies/milliliter in the blood. Analyses were weighted to account for the complex survey design.

Results: In total, 14,488 participants were tested. Among those who tested HIV-positive, 71.6% were aware of their status: 73.3% of women and 68.5% of men; of those aware of their HIV-positive status, 96.4% were on ART: 97.5% of women and 94.3% of men; among those aware of their status and on ART, 89.4% had VLS: 90.4% of women and 87.6% of men. Among all PLHIV, 69.0% were on treatment and 64.1% had VLS (64.5% of women and 56.6% of men). VLS among all PLHIV varied considerably by age, from 44.5% among 15–24-year-olds to 75.2% among those aged 50+, and by provinces, from 42.5% in Cabo Delgado to 80.3% in Inhambane. Overall, women performed better in all analyzed indicators when compared to men.

Conclusion: Although Mozambique has reached the 95% treatment target among PLHIV who know their status, three in ten PLHIV are not yet on ART. Accelerating HIV case finding, linkage and VLS, and addressing the age and sex disparities along the cascade is essential.

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Use of Recent HIV Surveillance Data to Respond to Ongoing HIV Transmission in Malawi

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Background: Recent HIV infection surveillance helps determine whether newly diagnosed people living with HIV (PLHIV) were likely recently infected (<12 months) to identify potential geographic areas or subpopulations experiencing ongoing HIV transmission. We describe the process and outcomes of the identification, investigation, and response to HIV transmission in Malawi.

Material and Methods: Consenting newly diagnosed PLHIV in 251 health facilities underwent a recent infection testing algorithm (RITA) involving a rapid test for recent infection (RTRI) and viral load testing for all those RTRI-recent. Facilities with potential ongoing HIV transmission were identified based on: meeting or exceeding numeric thresholds of RITA-recent infections by facility category, significant increases in RITA-recent infections compared to the prior 3 months, and a Poisson-based spatiotemporal statistic with SaTScan. Facilities that met at least two of these thresholds were investigated. Interviews were conducted during hotspot investigations with health workers and stakeholders to identify possible drivers of ongoing HIV transmission. Interventions were designed and implemented to address HIV service gaps and potential contributors to HIV transmission.

Results: Out of the 251 facilities implementing recent infection surveillance, 15 (6.0%) met one of three hotspot definitions; four in Blantyre (1.6%) and five in Lilongwe (2.0%) were subsequently investigated. Potential barriers to HIV testing and prevention services identified by respondents included stigma faced by key populations seeking care and unavailability of pre-exposure prophylaxis, self-test kits, and condoms. Risky behavior occurring in bars and "shebeens" (illegal drinking establishments), at parties, and during other cultural practices were also mentioned as possible contributors to transmission. Since May 2022, interventions have been implemented to improve HIV testing and prevention, including the integration of targeted condom distribution with scaled-up index testing, and engagements with community and bar/shebeen owners to support moonlight testing and HIV services.

Conclusion: Tailored interventions may further reduce HIV incidence by identifying and targeting geographic areas and subpopulations experiencing ongoing transmission. Recent HIV surveillance and hotspot detection and response may provide opportunities to identify and address gaps in HIV services and socio-behavioral barriers for sustaining gains Malawi achieved in reaching epidemic control.

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Uptake of Device Methods of Voluntary Medical Male Circumcision (VMMC) in Blantyre and Mulanje Districts in Malawi - Lessons Learnt From Analysis of Project Routine Data

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Background: Studies show 80% Voluntary Medical Male Circumcision (VMMC) coverage among men 15-49 is needed to prevent new HIV infections. To achieve these goals, VMMC programs need effective innovations. Studies show that circumcision devices are safe and effective. We assessed the ShangRing (SR) uptake, in Blantyre and Mulanje districts, Malawi.

Material and Methods: Population Services International Malawi added SR to dorsal slit (DS) in 2020. Before using the technique, the program trained providers, demand creators, and mobilizers. During demand creation activities Mobilizers emphasized communication of the following SR messages: fewer clinic visits, immediate return to work, no stitches, and less bleeding than conventional surgery. We analyzed project data from October 2020 to June 2022 using Stata 17, to determine SR uptake by age, facility type, and district, Mulanje and Blantyre.

Results: A total of 68,801 clients accessed VMMC between October 2020 to June 2022. Of the total circumcised 30% (20,860) and 70% (47,940) accessed VMMC via device and dorsal slit methods, respectively. Clients circumcised via SR and DS were 24 and 21 years old, respectively. At the facility level, facilities near markets (trade hubs) saw higher uptake of SR than DS, 55% (11,473) vs 45% (9,387) respectively. Mulanje, a rural district with more men relying on casual labor in tea estates, has more SR compared to DS than Blantyre, by 54% (4,643) and 21% (6,401), respectively. Over the

assessment period, a comparison of within the VMMC methods showed more people 20 years and older are using VMMC devices than surgical methods at 13,650 (65%) vs 17,572 (37%) respectively. Feedback from providers indicates that SR is a faster and simpler method of circumcision.

Conclusion: Our findings indicate that SR speeds up the process and is a better tool for increasing VMMC uptake in people aged 20 years and older. SR implementation will be more effective in areas frequented by busy and mobile men, as its benefits resonate with them and solve barriers to uptake like fear of lost wages and shame from multiple clinic visits.

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Active Linkage to Care Outcomes in the Mozambique Population-Based HIV Impact Assessment (INSIDA 2021)

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Background: The Mozambique Population-based HIV Impact Assessment was conducted in 2021/2022 to measure the impact of the national response to HIV among adults 15 years and older. Participants who tested HIV-positive during the survey and reported not being on antiretroviral therapy (ART), were offered active linkage to care (ALTC).

Material and Methods: Contact information (phone number and address) of those consenting to ALTC was shared with provincial HIV managers within 7 days of completing data collection in the enumeration area. HIV managers coordinated linkage activities with health counselors from

Health Facilities (HF) and community-based organizations (CBOs). Survey staff contacted the HIV managers to confirm the linkage outcome of each participant. A spreadsheet was used to register the dates participants were tested, contacted and initiated on ART.

Results: Of the 14,488 individuals tested for HIV using the National Rapid Test algorithm, 2,038 positive participants were identified; of these, 744 participants were eligible for ALTC. Among the eligible participants, 709 (95.3%) provided consent to have their contact information shared for ALTC, and 660 (93.1%) were successfully contacted by health counselors. Participants that selected to be contacted only by visits were less likely to be successfully contacted (86.9%) when compared to those that chose to be contacted by either SMS or call (96.3%). Health counselors were unable to contact the remaining 49 (6.9%) participants due to imprecise address or outdated/inaccurate phone number collected during the survey. Of the participants that could be contacted, 618 (93.6%) were successfully initiated on ART and 42 (6.4%) did not visit the HF after contact. Overall, 618 (83.1%) of participants eligible for ALTC initiated ART. The mean duration from household testing to initiation of treatment was approximately 30 days.

Conclusion: Linking household-based survey participants to HIV care and treatment has always been a challenge. However, INSIDA 2021 demonstrates that ALTC is feasible when conducted in close collaboration with existing health system processes and local (or community) partnerships. Survey ALTC could be improved by ensuring accurate contact information is collected during the survey interview, sensitizing the participant of the importance of providing a phone number, and by reducing the linkage time.

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Inpatient Navigation Model to Improve Delivery of Advanced HIV Disease Package for Hospitalized Adults With HIV in Zambia: A Randomized Pilot Trial

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Background: People admitted to public hospitals in Africa often experience gaps in care because inpatient health systems are complex and clinical staff are too overwhelmed with other duties to provide required support. As a result, caregivers act as support providers; however, they are often ineffective advocates due to lack of familiarity with the health system and low health literacy. We piloted an inpatient navigator model to reduce gaps in providing the advanced HIV disease (AHD) package.

Material and Methods: Four experienced HIV community health workers (CHW) were trained as inpatient navigators at the referral hospital in Lusaka. We prospectively enrolled newly hospitalized adults living with HIV aged ≥ 18 years and randomized them 1:1 on whether or not they received navigators while hospitalised. Navigators counselled and oriented inpatients and caregivers to the hospital system, tracked inpatient activities, and linked patients to nearby outpatient HIV clinics for care after discharge. Outcomes were receipt of recommended AHD services including labs, prophylaxis, and treatments based on patient files reviews, and qualitative assessment of feasibility and acceptability of the model through interviews

with hospital staff, inpatients, caregivers, and navigators.

Results: From May-December 2022, 74 inpatients were enrolled; 36 were assigned navigators. Median age was 42 years, 55.4% were women, 81.9% were on ART, 53.7% had HIV-RNA < 40 copies/ml, and 59.5% had AHD, with these characteristics matched between those assigned and not assigned navigators (all $P > 0.05$). During hospitalization (median 8 days) navigators met caregivers 94.3% of the time and were present at discharge/death 50% of the time. The most common navigator activities were counseling (94.4%), lab sample delivery/results tracing (91.7%), and caregiver orientation (86.1%). At discharge patient navigation was associated with increased laboratory test results, including CD4 (100% versus 74.3%, $P = 0.001$), increased prescription of co-trimoxazole when CD4 was < 350 cells/mm³ (47.6% versus 0%; $P = 0.002$), and a trend towards increased prescription of ART (76.2% versus 50.0%; $P = 0.110$). Interviews with staff revealed high acceptability and feasibility of navigators.

Conclusion: The navigator model is feasible and highly acceptable. It has the potential to improve inpatient HIV care as it helped close gaps in implementing physician orders, and communication between hospital staff and inpatients/caregivers.

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Improving Access to Quality Primary Healthcare Through Integrated Clinical Mentorship for Providers in Binga District, Zimbabwe

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Background: The government of Zimbabwe is committed to ensuring access to quality primary health services in line with Alma Ata (1979), Astana (2018) declarations and UHC by 2030. Binga district is a vast rural district with 15 health facilities serving

a population of 159 982. The district has many challenges including attrition, long distances and being the poorest and hard to reach.

Material and Methods: Wild4Life health program introduced multidisciplinary comprehensive clinical mentorship for healthcare workers to provide capacity, strengthen existing skills and imparting new skills. In 2019, the 15 clinics in Binga were assessed and scored between 1 (lowest) and 5 (highest) using a Wild4Life clinic assessment and grading tool that covers 7 thematic areas namely HIV, TB, viral load monitoring, Antenatal, correct management of pneumonia and malnutrition and retention on ART. The clinical mentorship rounds were done quarterly with virtual contact in between by experienced and multidisciplinary team of mentors that is well trained and capacitated in mentorship, quality improvement and data analysis. The mentorship sessions include review of performance on key programme indicators, review of findings from patient satisfaction survey and exit interviews, observation of clinical consultations with practical demonstration and feedback, and data verification combined with self-assessment by the facility team. Progress against baseline performance is measured through self-assessment by the facility team and assessment by the mentors on core programme indicators.

Results: After quarterly rounds of integrated clinical mentorship, the median performance across the 15 supported health facilities increased from 60% to 80% with 13 clinics out of 15 scoring above 80%. Other marked improvements were recorded on correct diagnosis and appropriate management of pneumonia among children which increased from 63% to 94%, ART retention in care increased from 78% to 98% and the proportion of women managed correctly using a partograph increased from 35% to 82%. Median Data variance between reported, collected, and verified data for the district declined from 35% to 7% which is close to the minimal acceptable range of 5%.

Conclusion: An integrated and multidisciplinary approach to clinical mentorship fosters improvement in the quality of care and performance of the system.

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A Simple, Feasible Intervention for Systematic Tuberculosis Screening at Outpatient Departments (OPD) in Malawi Improves Tuberculosis Case Finding Effort

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Background: The National Tuberculosis and Leprosy Elimination Program (NTLEP) in Malawi set 5% as target for Outpatient Department (OPD) attendants who screen as presumptive TB. However, most health facilities, including the ones supported by Partners in Hope (PIH), fail to reach this target owing to ineffective TB screening systems. PIH is a Malawian, Christian, non-governmental organization that supports the Ministry of Health with HIV Care & Treatment and TB services in 9 districts with USAID funding. At the baseline of PIH's support, the percentage of OPD attendants screened as presumptive TB, also defined as "TB Case Finding Effort", was only 0.6% across project sites. PIH worked to close this gap by introducing systematic TB screening at the OPD.

Material and Methods: PIH initially introduced paper-based TB Screening Slips (denoting the standard WHO TB 4-symptom screen), as a means to increase screening at the OPD. However, the slips were prone to loss and were replaced by Systematic TB Screening Stamps in "Health Passports", which are universally used at health facilities in Malawi for individual medical documentation. Every OPD visitor has their Health Passport stamped by lay cadres including volunteers, upon which screening questions are ticked off. Those found with a positive screen receive presumptive TB status and are documented in presumptive TB cases register and undergo diagnostic-workup or further assessment. Statistical Clerks then indicate in OPD registers that screening episode. We collected and analyzed data

from both OPD and presumptive TB cases registers using Microsoft Excel.

Results: The percentage of TB presumptives found among OPD attendants increased from 0.6% in July-September of 2021 at baseline to 2 % in July-September of 2022. TB case notification also increased from 548 in July-September of 2021 to 829 of July-September 2022, suggesting the intervention contributed to improved TB case detection.

Conclusion: A feasible and affordable intervention for improving systematic TB screening at general OPDs provides opportunities for increasing TB Case Finding Effort and TB Case Notifications. We will continue to measure and optimize TB screening in OPD settings and integrate TB screening into other health services to increase overall TB screening coverage at health facilities.

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Utilizing the Model for Improvement Framework to Improve Index Testing Offer Rate in Nigeria

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Background: Index testing is one of the most efficient strategies to identify children living with HIV. Several guidelines recommend index testing (genealogy testing) be offered to all newly diagnosed individuals. Health system strengthening activity, using a standard quality improvement (QI) framework was implemented by the PEPFAR through USAID-funded Accelerating Control of the HIV Epidemic in Nigeria (ACE) Project to improve the offer rate of index testing. We assessed the outcome of this initiative.

Material and Methods: The model for improvement framework was used in the design of a 12-week quality improvement initiative at four health facilities in Akwa Ibom State, Nigeria. These facilities had <50% genealogy offer rate (i.e. the proportion of clients offered genealogy testing) as of beginning of August 2022. In the “Plan” phase, focused group discussions conducted for healthcare workers showed limited knowledge among services providers, unstructured clinic flow and documentation gaps as the top three barriers to index testing services delivery. During the “Do” phase, training was conducted for healthcare workers; service and documentation flow within the facility was established; and documentation on paper records were compared with electronic records to identify actual service gaps. Weekly genealogy offer rate was plotted on a run-chart during the “Study” phase.

Results: At the beginning of the implementation, the total gap for missed opportunities in genealogy was 14,476 clients in the participating sites. After 12 weeks of quality improvement, genealogy offer rate increased from 32.5% to 98.3%. A total of 22 HIV-positive children (males=8; females=14) were identified from the genealogy testing.

Conclusion: Health system strengthening approach improved genealogy offer rate and the facilities intends to spread this learning to other components of the index testing cascade.

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Health System Costs and Feasibility of Alternative Mechanisms for Expanding Domestic Resources Mobilization to Finance Malaria, HIV/AIDS and TB Services in Tanzania

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Background: Donor funding for Malaria, HIV/AIDS and TB has fluctuated drastically in recent years, which might limit the ability of Malaria, HIV/AIDS and TB programs in the country to achieve universal access and sustain the current progress. The aim of this study was to assess the health system costs associated with the provision of Malaria, HIV/AIDS and TB services as well as examining the feasibility of alternative mechanisms for expanding domestic resources mobilization to finance Malaria, HIV/AIDS and TB services in the country.

Material and Methods: A cross-sectional descriptive analytical study design was employed to collect both, quantitative and qualitative data in 8 regions, representing each zone of Tanzania Mainland, with rural and urban districts consideration. A Micro-costing approach was used to collect cost data from Provider perspective for a period of 1 year in 88 public health facilities.

Results: The unit cost of providing Malaria, HIV/AIDS and TB services were estimated to be USD 7, USD 30.42 and USD 45.21 respectively. The total financial gap was estimated to be USD 1.5 billion for HIV, USD 400 million for Malaria and USD 86 million for TB. The projected financial resources needed to support HIV/AIDS, Malaria and TB services for a period of 10 years was estimated to be USD 8.5 billion. Establishment of compulsory Universal Health Insurance, reducing service cost exemption to beneficiaries, imposing taxation in social services, food products, drinks and mobile phone bundles were suggested as the means of expanding domestic resources to mobilize domestic funds to finance HIV/AIDS, Malaria, and TB in the country.

Conclusion: As the findings indicate a broad consensus on decreasing donor funding, the Government and other Health stakeholders should ensure the efficient and appropriate use of few existing resources to offset the high cost needed for providing health care services. Moreover, the government should fast track the establishment of alternative financing mechanism to finance HIV, Malaria and TB services as suggested.

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Bien Vieillir Avec le VIH, Mise en Oeuvre au Cameroun et au Senegal

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Contexte : Les antirétroviraux ont transformé l'infection à VIH en maladie chronique, la population sous thérapie vieillit progressivement. Les personnes âgées de plus de 50 ans vivant avec le VIH (PAVVIH) représentent 25% des files actives en 2022 au Cameroun et au Sénégal. L'âge induit d'autres pathologies compliquant le parcours de soins, la qualité de vie. Le projet VIHeillir financé par Expertise France ambitionne d'intégrer la prise en charge de 5 comorbidités les plus fréquentes selon une approche santé publique dans 5 sites de prise en charge de ces deux pays avec un accompagnement communautaire.

Matériel et méthodes : Des protocoles et algorithmes de prise en charge simplifiés et standardisés ont été élaborés pour : l'HTA, le diabète, le cancer du col et les hépatites B et C. Ils préconisent un diagnostic simple et peu coûteux et la prescription de médicaments génériques à coût réduit. Le personnel des sites a été formé et équipé en matériel de dépistage. Chaque PAVVIH se présentant en consultation peut être inclus et suivi pendant deux ans. L'objectif est d'inclure 1814 patients.

Résultats : En janvier 2023, 1535 (84.6%) patients ont été inclus. Les algorithmes sont disponibles dans les sites, les comorbidités dépistées et traitées. Cependant la baisse de fréquentation en clinique et les barrières financières limitent la régularité des visites à l'hôpital, pourtant nécessaires pour dépister, traiter et contrôler les comorbidités. Les supervisions montrent que les protocoles ne sont pas toujours appliqués par le personnel entraînant un sous diagnostic des comorbidités. Les associations organisent des

activités de prévention et accompagnement communautaire.

Conclusion : VIHeilir a élaboré des protocoles et algorithmes simples et peu coûteux, qui ont permis d'intégrer la prise en charge des comorbidités au niveau des services VIH. Leur application nécessite un suivi afin de les intégrer dans les pratiques des soignants en routine. Un plaidoyer avec l'aide des associations pour l'appui aux dépenses de santé dans le cadre du Fonds Mondial est un impératif pour renforcer l'accès aux soins des PAVVIH.

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Using New TB Tools to Improve TB Diagnosis Among PLHIV in Kenya

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Background: Kenya, a high TB/HIV burden country, has made slow progress in Tuberculosis (TB) identification. Low diagnostic yields using conventional TB tools (smear microscopy, geneXpert) prompted adoption of highly sensitive Artificial Intelligence (AI) technology that included digital X-ray CAD and Truenat molecular technologies. We describe the effect and feasibility of introducing these technologies at a level three facility in Mombasa, Kenya on TB identification.

Material and Methods: Patient-level records of People living with HIV (PLHIV) aged >15 years were extracted from National TB registers for a period of 12 months (July 2021 - December 2021 and July 2022 - December 2022) at Jomvu Model Hospital in Mombasa, Kenya. A pre-post analysis of TB outcomes that compared TB outcomes prior and post introduction of new TB tools (iNTP) in June 2022 was conducted. Descriptive analyses were included to show the characteristics of the clients served and changes in diagnostic yield.

Results: A total of 2671 patients were screened using all the 3 methods of X-ray CAD-1444 (54%), Truenat machines-1172 (44%) and smear

microscopy- 55 (2%). 55 (2%) patients were screened pre iNTP (July - December 2021) and 2616 (98%) patients post iNTP (July - December 2022). (Post iNTP included outreach data). Bacteriologically confirmed (BC) TB was found in 8 (14.5%) patients pre iNTP compared with 135 (11.5%) patients post iNTP. Majority clients in both periods were male (81%) and median age 37 years (IQR 31-43).

Conclusion: Introduction of new tools has led to increased TB identification and initiation of TB preventive therapy for PLHIV who test negative for TB. The Portable X-CAD machine has improved access for accurate TB diagnosis. With rapid test results and relatively low skill set required, scalability of new TB tools could prove to be a gamechanger in the improved diagnosis and management of TB.

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Association Between HIV Status and Hypertension: A Prospective Cohort Study in Sub-Saharan Africa

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Background: Sub-Saharan Africa is disproportionately affected by the global HIV epidemic, and now faces a rapidly rising prevalence of cardiovascular disease and hypertension. Expansion in the HIV care continuum has improved life expectancy for people living with HIV, but resulted in a concomitant increased risk of age-related cardiovascular disease (CVD) multimorbidity. So far, studies examining the relationship between hypertension and HIV and

ART status are cross-sectional and lack longitudinal associations.

Material and Methods: A longitudinal analysis was performed on data from the Ndlovu Cohort Study, South Africa, comparing data from HIV-positive and HIV-negative individuals collected annually across a 3-year follow-up period. Linear mixed models were used to estimate trends in systolic and diastolic blood pressure by sex over time according to HIV and ART status.

Results: Data was analysed from 1364 participants with a median age of 39 years (SD \pm 12.8); 557 (40.8%) were HIV-positive and 764 (56%) were female. A total of 432 HIV-infected individuals were taking ART medication, of whom 78.8% measured an undetectable viral load of <50 cp/mL. The baseline hypertension prevalence ($\geq 140/\geq 90$ mmHg) was 20.4% in HIV-negative participants and 10.2% in HIV-positive participants on ART, which increased to 38.7% and 26.6% respectively after 36-months of follow-up. After multivariable adjustment, use of ART medication, but not HIV status, was associated with an 8.41 mmHg lower systolic blood pressure [$P \leq 0.001$]. Sex-stratified analysis showed behavioural risk factors such as alcohol consumption were a specific concern for HIV-positive males.

Conclusion: Our results show a significant increase in BP across all groups and suggest a high overall burden of uncontrolled hypertension in this rural African population. This study highlights the need for population-level prevention of factors associated with hypertension and CVD risk. Specific emphasis should also be placed on improving male engagement with healthcare services, and other health-seeking behaviours.

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Time to Event Analysis: Estimating Median Time of Antiretroviral Therapy Initiation to Occurrence of Clinically Diagnosed Hypertension and Its Associated Predictors Among

PLHIV in Two HIV Clinics in Northern and Southern Nigeria

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Background: Globally, there are controversies on the role of HIV virus and therapy on the risk of non-communicable diseases. There is dearth of literature on the time thresholds of antiretroviral drugs that could be considered detrimental or beneficial to PLHIV in the non-communicable disease causal pathways. This study aims to median time of ART use to occurrence of clinically diagnosed hypertension and its associated factors among PLHIV on ARV in Nigeria.

Material and Methods: Retrospective longitudinal study of 2540 normotensive adult PLHIV (≥ 18 years) enrolled in HIV care between 2004 – 2020 in two HIV clinics in Northern and Southern Nigeria, for occurrence of clinically diagnosed hypertension on or before November 2022. Exploratory variables assessed included respondent's demographic and HIV care history. Survival event was defined as occurrence of clinically diagnosed hypertension during follow-up period, which was observed for all patient except, they were right censored. Kaplan-Meier survival curve was used to estimate the survival probabilities of hypertension. Cox proportional hazard model was fitted to identify predictors of hypertension at p of 0.05.

Results: Most (74.6%) respondents were females and majority (62.3%) were aged 40-59years. The cumulative incidence of hypertension over the follow-up period was 15.0% (381/2540). The median duration of ART use to clinically diagnosed hypertension was 15.5 years (95% CI: 15.3 – 15.8 years). Male sex (AHR = 1.269, 95% CI = 1.021 - 1.577), middle age (AHR = 2.431, 95% CI = 1.766 - 3.347) and old age (AHR = 5.808, 95% CI = 3.952 - 8.536), HIV viral un-suppression (AHR = 1.387, 95% CI = 1.006 - 1.913), and use of co-trimoxazole therapy (AHR = 2.050, 95% CI = 1.625 - 2.586), were significant predictors for occurrence of hypertension.

Conclusion: The finding revealed that hypertension is a common problem among PLHIV with unsuppressed viral load, males and persons older

than 40years. Routine screening and prompt treatment of hypertension should be an integral part of follow-up in HIV patients.

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Co-infection of High-Risk Human Papillomavirus and Human T-Lymphotropic Virus-1 Among Women Living With HIV on Antiretroviral Therapy at a Tertiary Hospital in Kenya

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Background: Virus-associated cancers have emerged in recent years and account for 15% of cancers reported globally. Cancer-causing viruses include high-risk Human Papillomavirus (HR-HPV), the causative agent of cervical cancer, and Human T-cell Lymphotropic Virus type-1 (HTLV-1), the causative agent of adult T-cell leukemia (ATL). In Kenya, there is a paucity of data on the burden of HR-HPV/ HTLV-1 co-infection among women living with HIV (WLHIV). We determined the co-infection of HR-HPV and HTLV-1 among WLHIV on antiretroviral therapy (ART) at the Kenyatta National Hospital (KNH).

Material and Methods: We conducted a cross-sectional study among WLHIV attending KNH (Kenya's national referral hospital) ART clinic. Cervical cytology was performed by KNH medical providers per standard of care. Study nurses collected a cervical sample with a cytobrush for HPV genotyping using Gene Xpert[®] assays and HPV Genotypes 14 Real-TM Quant[™] V67-100 FRT kits. Peripheral blood mononuclear cells (PBMCs) were used for HTLV-1 DNA detection (Bioline Ltd., London, UK). The association of HR-HPV and HTLV-

1 co-infections was done using the Chi-square function for trends.

Results: A total of 647 WLHIV enrolled in this study and had a mean age of 42.8 years (SD 8.7). All of the study participants were on ART; 7% were initiated on ART in ≤ 12 months and about 8.8% were not virally suppressed (>1000 copies/mL). The HTLV-1 positivity rate among WLHIV was 3.1% and 7.6% among those with HR-HPV. Participants with HR-HPV/ HTLV-1 co-infections were significantly older (50+ years, 35.3%) than those having HPV mono-infection or did not have any infection ($p = <0.001$). A significantly higher proportion of women with HR-HPV/ HTLV-1 co-infections had their sex debut before the age of 18 years ($p = 0.015$). A higher proportion of participants (52.2%) with HPV mono-infection had previously been treated for STDs as compared to WLHIV without either HR-HPV or HTLV-1 infections ($p = 0.006$).

Conclusion: The study showed increasing trends of HR-HPV/ HTLV-1 co-infections among WLHIV on ART despite their CD4 cell count or HIV 1 RNA viral suppression at Kenya's national referral hospital.

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The Spectrum of Chronic Lung Disease Among People Living With HIV at Newlands Clinic in Zimbabwe: A Descriptive Study

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Background: People living with HIV (PLHIV) are prone to chronic lung disease (CLD). This may result from late HIV diagnosis, poorly controlled HIV and/or chronic inflammation. In resource limited settings, with scarce diagnostics or trained personnel, patients can be misdiagnosed with recurrent pneumonias or pulmonary tuberculosis (PTB), resulting in late diagnosis of CLD.

Material and Methods: We conducted a descriptive study at Newlands Clinic (NC), an HIV

referral center in Harare. We analyzed abstracted electronic medical records for all patients diagnosed with CLD from 2005-January 2023. We used descriptive statistics for analysis.

Results: We analyzed records for 116 patients diagnosed with CLD (50% female). HIV transmission was vertical for 97 (84%) and horizontal for 19 (16%). The median age at CLD diagnosis was 9 years (IQR 6-13) among the vertically transmitted (VT). CLD was diagnosed before ART initiation in 39 (33%) patients. Thirty-three (28%) patients died, 74 (64%) are in care, 9 (8%) transferred out or were lost to care. At CLD diagnosis, 77 (66%) were virologically unsuppressed. The median viral load was 13422 (IQR 20-77744) for VT and 20 (IQR 20-146942) for the horizontally transmitted (HT). Sixty-two (53%) had bronchiectasis, 32 (28%) had lymphocytic interstitial pneumonia (LIP), 15 (13%) had both LIP and bronchiectasis while 7 (6%) had other CLDs. Before CLD diagnosis, 38 (33%) and 28 (24%) patients had been treated for one episode and for ≥ 2 episodes of pneumonia respectively. PTB treatment had been administered once to 55 (47%) patients and ≥ 2 times for 19 (16%) before CLD diagnosis. Amongst 13 patients who subsequently developed cor pulmonale (CP), 9 died. 80% (4/5) of HT with CP died while 62.5% (5/8) of VT with CP died. 23% (22/97) of VT deceased while 58% (11/19) of HT died. Most deaths occurred within a year of CLD diagnosis.

Conclusion: CLD can affect both young and older PLHIV and should be considered in patients with recurrent pneumonia or TB. CLD in patients with vertical HIV transmission may occur in those with delayed HIV diagnosis and uncontrolled HIV. In horizontal HIV transmission poorer outcomes including CP and death can occur despite HIV viral suppression.

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Preliminary Results From Integrating Interpersonal Psychotherapy Groups in Dreams Initiatives for AGYW in Zambia

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Background: In Zambia, adolescent girls and young women (AGYW) face multiple economic and social challenges, including unequal gender norms, stigma, and lack of resources, which limit access to and engagement with health services. Additionally, low-income AGYW are more susceptible to living with depression than men. To address the dual risk of acquiring HIV and the burdens of depression among AGYW, we integrated mental health services into the comprehensive HIV prevention Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe (DREAMS) initiative in the Southern and Western Provinces.

Material and Methods: We implemented interpersonal psychotherapy groups (IPT-G) between October and December 2022 to help AGYW identify the underlying triggers of their depression. DREAMS mentors were trained as mental health facilitators to help guide AGYW through 8-10 weeks of structured sessions. AGYW enrolled into DREAMS were screened with the call-to-action (CTA) form. Anyone who scored >5 was further screened with the Patient Health Questionnaire (PHQ-9); if they scored >9 , they were counselled and enrolled in IPT-G. Scores of 9-14, 15-19, and 20-24 indicated moderate, moderately severe, and severe depression, respectively. A burden-rating tool was administered to track weekly symptoms. Midline and endline assessments were conducted at weeks 4 and 8 to

assess progress or deterioration of symptoms. AGYW with a score of >5 at endline were referred to health facilities for further mental health assessments and treatment.

Results: A total of 722 AGYW were screened using the CTA form; 73% (530/722) scored >5 and were further screened with the PHQ-9 tool. Of these, 99% (527/530) scored >10; 60% (317/527) had moderate depression, 38% (199/527) had moderately severe depression, and 2% (11/527) had severe depression. Four of the depressed AGYW were living with HIV and 5 were pregnant; additionally, 24 showed suicidal tendencies and were excluded from IPT-G sessions and referred for further care at the health facility.

Conclusion: Among DREAMS AGYW in Zambia, depression is highly common and mental health services are greatly needed. Integrating services such as IPT-G into the existing DREAMS initiative with already well-known mentors improves access and provides AGYW with a safe environment for addressing mental health needs and coping with depression.

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TB Notification in Children; The Experience of Targeted Community Demand Creation Amidst Insecurity in Imo State Nigeria

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Background: The 2022 Global TB report shows that Nigeria is one of the 30 high-burden countries that have significantly contributed to the global Childhood TB epidemic. Despite significant improvements being made by the country in TB case notifications, children are being left behind as the childhood proportion remained at 7% nationally. The current security challenges in some parts of the country including in Imo state worsen this challenge. This study aimed to determine how targeted community demand creation can

contribute to TB Notification in Children in security-challenged settings.

Material and Methods: The hotspot identification approach was used to identify and cluster community entities; such as hospitals, patent medicine vendors, and traditional birth attendants. These centers were engaged to refer children to TB diagnosis and treatment services, over a 21-month period, (January 2021 to October 2022). The inclusion criteria considered in identifying the hot spots included proximity to living areas, schools (targeting preschool and early school-aged children), Orphanages, and children's clinics. Targeted demand-creation activities were carried out in these clusters.

Results: On the whole, 1,104 centers were engaged, and 162 demand-creation activities were conducted leading to the referral of 579 children. A total of 115 pediatric TB cases were placed on treatment through this intervention. The Paediatric TB notification trend within this period showed a continuous increase in childhood TB cases started on treatment.

Conclusion: Targeted outreaches through hotspots or clusters help to reduce the security challenges posed by large crowds gathering in the communities and patients traveling long distances to access treatment. This approach is effective in ensuring pediatric TB cases are identified and started on treatment amidst the worsening security challenges in many parts of Nigeria like Imo State.

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Prevalence of Sexually Transmitted Infections Among HIV Negative and HIV Positive Young Women 18-24 Years Old in Mozambique

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Background: In Mozambique, 11.8% of women 20-24 years old are living with HIV, compared to 3.8% of men in the same age group. Sexually transmitted infections (STIs) can facilitate HIV transmission by increasing the infectivity of HIV-positive individuals and the susceptibility of HIV-negative individuals. Information about prevalence of STIs other than HIV and syphilis in Mozambique is limited. Low availability of laboratory tests for most STIs in the public health system has resulted in healthcare providers relying on syndromic evaluations for diagnosis and treatment. This study utilized diagnostic tests to evaluate the prevalence of STI among HIV-positive and HIV-negative young women who self-reported STI symptoms and/or sexual risk behaviors.

Material and Methods: A cross-sectional study was conducted with 1,472 women 18-24 years old between August 2021 and September 2022 in four provinces where one health facility (HF) was selected per province. Molecular testing (GeneXpert® or Panther®) was used to detect chlamydia and gonorrhea. Trichomoniasis was tested using a molecular (Panther®) or rapid test.

HIV and active or latent herpes simplex virus 2 (IgG/IgM) and syphilis were tested using rapid tests.

Results: Median age of study participants was 20 years and 10.7% (n=158) were HIV-positive. Approximately one-quarter of all participants tested positive for chlamydia, gonorrhea, and/or trichomoniasis. Gonorrhea, trichomoniasis, syphilis, and herpes 2 were significantly more prevalent ($p < .05$) among HIV-positive women than HIV-negative women (22.5% [15.0, 30.0] vs. 8.6% [6.9, 10.3]; 22.2% [15.4, 29.0] vs. 11.9% [10.1, 13.7]; 3.5% [0.5, 6.6] vs. 1.1% [0.6, 1.7]; 49.7% [41.6, 57.7] vs. 28.6% [26.0, 31.2] respectively). The difference in proportion of chlamydia among HIV-positive vs. HIV-negative women (12.5% [6.6, 18.4] vs. 13.8% [11.7, 15.9]) was not statistically significant ($p=0.70$).

Conclusion: This study constituted one of the first efforts to estimate STI prevalence among young women in Mozambique using molecular and rapid tests. Prevalence of gonorrhea, trichomoniasis, syphilis, and Herpes 2 was significantly higher among HIV-positive women compared to HIV-negative women. Expanding access to STI testing for young Mozambican women with STI symptoms and/or at high risk of contracting an STI may reduce the risk of HIV infection and transmission and improve STI diagnosis and treatment practices in the country.

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Undiagnosed Sexually Transmitted Infections (STI) In High HIV Burden Settings; Feasibility and Acceptability of Point of Care Testing

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Background: Introduction of point of care testing (POCT) for sexually transmitted infections (STIs) in health services in sub-Saharan Africa has lagged, leading to missed opportunities for STI diagnosis and treatment. We conducted a pilot study assessing feasibility of STI POCT in Eswatini, and to

determine its acceptability among clients and healthcare workers (HCW).

Material and Methods: STI POCT for *Neisseria gonorrhoea* (NG) and *Chlamydia Trachomatis* (CT) was introduced in two clinics with high burden of HIV clients. From August-October 2022, we enrolled sexually active clients 18-45 years who reported multiple sexual partners, a recent new partner or STI symptoms. All male clients provided urine, and female clients were randomized 1:1 to provide urine or a self-collected vaginal swab for STI POCT using Cepheid NG/CT cartridges on existing clinic GeneXpert platforms. We report descriptive data on STI POCT feasibility and acceptability measured by uptake of services, client and HCW satisfaction measured using 5-point Likert-scale questions, and STI prevalence.

Results: Nearly all clients offered STI POCT accepted it (248/250, 99%: 89/90, 99% males and 159/160, 99% females). Most clients (224/247, 91%) received their results within a day, the majority expressed satisfaction with POCT (217/241, 90%), and would accept such testing in the future (238/241, 99%). Of the 32 HCW who participated in the study, all (32/32, 100%) were satisfied with POC STI testing. STI prevalence by POCT was 22% (55/248): 21/89, 24% among males and 34/159, 21% among females. CT was identified among 7/89 (8%) males and 24/159 (15%) females. NG was identified among 13/89 (15%) males and 8/159 (5%) females. Most clients with a positive POC NG/CT reported STI symptoms (39/55, 71%), but 16/55, 29% with a positive POC NG/CT did not report STI symptoms. Most clients with a positive POC NG/CT were treated (51/55, 93%). All 55 clients received partner notification counselling at the time of return of results.

Conclusion: We demonstrated feasibility of introducing STI POCT in this high HIV disease burden setting, and near universal acceptance of the intervention. We identified STIs in over 1 in 5 clients. This study highlights the need to expand STI POCT in such settings.

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Paclitaxel Treatment for Kaposi Sarcoma Can Be Provided in Art Outpatient Clinics With Low Rates of Adverse Drug Events

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Background: Paclitaxel is used as first line chemotherapy for the management of HIV-associated Kaposi Sarcoma (KS) in Malawi. KS is common among PLHIV with low CD4 count. As such, treatment availability is important outside centralized oncology units. To our knowledge, feasibility and side effects of paclitaxel-based chemotherapy in ART clinics have not been described.

Material and Methods: At Lighthouse-KCH in Lilongwe, Malawi, six ART nurses and four clinical officers were trained on safe administration of paclitaxel; SOPs were developed. In 2021, we integrated paclitaxel into HIV clinic care. Routine client data and available routine lab results from January to December 2021 were summarized and frequency of adverse drug events estimated. Clients receiving only one dose and those with dose cycles interval > 6 weeks were excluded from the analysis.

Results: 119 client records were analysed; 87% male, median age 37 years (IQR 30-42). 97% were HIV positive. Tumor stage was T1 in 84/105 (80%) clients; S1 in 44/105 (42%). 595 paclitaxel doses were administered successfully in the observation period; direct infusion reactions and paravasation were not observed. Median interval between cycles was 15 days (IQR 14-21). Baseline absolute neutrophil count (ANC), hemoglobin (Hb), platelets and creatinine were available in 79/119 (66%) clients. At baseline, six clients (8%) had anemia <8 g/dL and two (3%) had platelets <50.000/uL. For 451 subsequent cycles, lab results were available in 374 (83%). ANC <1000/uL were seen in nine results

(2.4%). Most clients finished their treatment without further neutropenia; one client was lost to follow-up immediately after low ANC and a detrimental outcome is likely. Hb <8 g/dL was seen in 17 results (4.5%); all clients were able to continue their treatment uneventful (transfusion was possible) except one client who died after two cycles. Thrombocytopenia was not detected. Creatinine >3 mg/dl occurred in one client; ALT and bilirubin were only measured rarely (30 results), no abnormality detected.

Conclusion: KS treatment with paclitaxel is safe and feasible in ART clinics under routine conditions and severe side effects are few. Hematological monitoring detects few individuals requiring changes; kidney and liver function are only very rarely abnormal.

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Introducing HPV Vaccination in Adolescents Living With HIV in Eswatini: No Safety Concerns After First Dose

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Background: Human papilloma virus (HPV) vaccination is recommended by the World Health Organisation for prevention of HPV infections and related cancers. However, there are few real-world safety and immunogenicity data among children and adolescents living with HIV (CALHIV), where concurrent infections and immunosuppression may affect these outcomes. We examined adverse events (AEs) following the first dose of nonavalent HPV (9vHPV) vaccination in CALHIV in Eswatini, a

country with the highest HIV and cervical cancer disease burden worldwide.

Material and Methods: We analysed baseline data from an ongoing open-label non-inferiority trial comparing immunogenicity and safety of a 2-dose regimen of 9vHPV among 9–14-year-old male and female CALHIV to a 3-dose regimen among HIV-negative (HIV-) females, ages 15-26 years. AE data following receipt of the first 9vHPV dose among participants enrolled Mar-Sep 2022 were analyzed. AE data were collected via telephone calls within 14 days post-vaccination and graded using DAIDS tables. We compared the proportion of any grade 3+ events and serious AEs (SAEs) among male and female CALHIV vs HIV- women using bivariate analyses.

Results: Among 343 male CALHIV (mean age: 11.7 years, standard deviation, SD, 1.6), 349 female CALHIV (mean age: 11.8 years, SD 1.6) and 350 HIV-women (mean age 20.9 years, SD 2.9), two SAE occurred. Both SAEs were among CALHIV (2/692, 0.3%); 12-year female hospitalized with grade 3 tonsillitis; 12-year male hospitalized with chronic osteomyelitis. Neither SAE was deemed related to 9vHPV vaccination. No other SAEs or grade 3+ events were observed: odds ratio (OR) for CALHIV vs HIV- women 2.6 (95% confidence interval, 95% CI, 0.1-53.3). Grade 1-2 events were observed among 87/692 (13%) CALHIV, and 50/352, (14%) HIV- women (OR: 0.87, 95% CI 0.59-1.26). The most common grade 1-2 events were injection site pain/swelling: 32/87, 38% among CLHIV and 23/50, 52% among HIV- women; and headaches 15/87, 17% among CALHIV and 7/50, 14% among HIV-women.

Conclusion: There were minimal SAEs after the first dose of the 9vHPV vaccination among CALHIV in this interim analysis, flagging no safety concerns. This is a reassuring finding in this setting of high HIV disease burden.

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Early Results on Elimination of HIV/TB Co-morbidity in 108 Zambia Correctional Centres Shows Success

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Background: Zambia has over 25,000 incarcerated people in 108 correctional centres across the country with holding capacity of 10,680, overpopulation of 134%. Majority of the inmates come from less privileged homes with poor health seeking behaviour. On admission, most inmates are not aware of HIV and TB preventive measures. We aimed to reach inmates with HIV and TB preventive messages and TB Preventive Therapy (TPT).

Material and Methods: Correctional centres are over populated, as a result there is poor sanitation and ventilation. This puts inmates at an increased risk of HIV opportunistic diseases such as TB. Selected correctional peer educators were oriented on TB transmission, control and prevention including the use of TPT short regimen. Myths and misconceptions on TB preventive therapy among inmates were discussed and cleared. All correctional centres offered TB Preventive Therapy, though only a few centres were offering short term regimen. HIV/TB sensitisation and screening was conducted in all correctional centres. We reached 25,000 inmates in 2022 with HIV and TB preventive messages, 17,721 were screened for TB of which 14,436 were negative and 14,010 were eligible for TPT. From those eligible for TPT only 1833 were initiated on TPT, of which 1533 were HIV positive while 500 HIV negative. The short regimen was a pilot study, only 100 inmates were initiated on TPT and there was a 100% completion rate.

Results: Interventions such as the short term TPT regimen for three months was more acceptable by the inmates due to shortened treatment duration. This enhanced adherence, and those on ART had

100% TPT initiation and completion rate. With the 6 months regimen, only 4% (500/12,477) of those eligible and HIV negative were initiated.

Conclusion: The Zambia Correctional Service is making efforts to prevent TB especially among people living with HIV as seen in the reported 100% success rate in TPT initiation. Use of trained prison peers to address myths and misconceptions on TB prevention helped to increase the number of inmates initiated on TPT. There is need to intensify on the intervention for the HIV negative inmates to increase on the TPT uptake.

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Virological Outcome, Iron Metabolism and Inflammation Status Among People Living With HIV/Co-infections Initiating on Dolutegravir in Zimbabwe

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Background: Many people living with HIV (PLHIV) in research limited settings still present to care with advanced HIV disease and co-infections. Co-infections can lead to virological failure and may also cause severe inflammation, which affects the process of iron metabolism causing anaemia of inflammation (low iron level).

Material and Methods: A prospective cohort study carried out between November 2021 and October 2022 was conducted among adults (>18 years old) PLHIV/co-infections, initiating on dolutegravir. Participants were attending care at Parirenyatwa Hospital, one of the largest HIV clinics in Harare, Zimbabwe. Screening for co-infections (Syphilis, Hepatitis B virus (HBV) and Herpes simplex virus (HSV)) was assessed at baseline, prior to ART initiation. Viral load (VL), C-reactive protein (CRP), ferritin and iron (Fe2+) were assessed at baseline and 6 month follow up. The effect of co-infections on virological outcome, iron metabolism and

inflammatory status was assessed. All statistical analysis was performed using SPSS 22.0 software.

Results: A total of 100 participants were enrolled, of which 51% were females. The median (IQR) age of the participants was 39 (31-48) years. HIV/co-infection was found in 30% (14% co-infected with Syphilis, 10% with HBV and 5% with HSV). Prior to ART initiation, participants with co-infections had significantly high VL, high levels of CRP and ferritin and low Fe2+ compared to those without co-infection ($p < 0.001$). At 6 month follow up, there was a significant decrease in VL (from a median of 153500 copies/ml at baseline to 30 copies/ml at 6 months), CRP (from a median of 138 ng/ml at baseline to 3.85 ng/ml at 6 months) and ferritin (from a median of 187 ng/ml at baseline to 99 ng/ml at 6 months) and an increase in Fe2+ among all participants. However, CRP and ferritin were still found higher among participants with co-infections vs those without ($p < 0.05$).

Conclusion: Co-infections in PLHIV increase virological failure and cause severe inflammation and anaemia of inflammation. However, dolutegravir was highly potent in reducing VL and improving clinical outcomes among PLHIV even in the presence of co-infections. Early start on dolutegravir is recommended so as to reduce inflammation and improve clinical outcomes among PLHIV.

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Factors Associated With Depression and ART Adherence Among Young People Living With HIV/AIDS in Lilongwe, Malawi: A Mixed-Methods Analysis

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Background: Young people living with HIV and AIDS (YPLHIV) face various challenges that render them

vulnerable to mental health problems, including depression. Despite sundry efforts to improve mental health among YPLHIV, evidence shows that many suffer from depression. In Malawi there is limited literature on correlates of depression and how it affects ART adherence, among YPLHIV. We aim to establish the prevalence of depression and its correlates among YPLHIV in Lilongwe.

Material and Methods: This was a cross-sectional mixed methods study using survey, in-depth interviews and health records reviews conducted at Lighthouse Trust -Martin Preuss Centre ART clinic in Lilongwe, Malawi from April 2021 to October 2022. A total of 303 YPLHIV aged 15-24 who were on ART for more than 6 months and 7 key informants (clinicians, nurses, psychosocial counsellors) providing care to the YPLHIV participated in the study. Client data was obtained from Patient Health Questionnaire 9 depression scale and Electronic Medical Records. Bivariate analysis and multivariate logistic regression were conducted to determine the individual factors associated with depression and examine potential correlates of depression respectively. Thematic content analysis was used for qualitative data.

Results: Approximately 46% of the participants were male and 54% female. Majority (71%) were aged 20-24 and 29% were 15-19. About 23% of the YPLHIV had depression symptoms and most (79%) were ages 20-24 years. Approximately 22% had their viral load unsuppressed and thus considered non-adherent. Most (67%) were from 20-24 age group. Source of income ($p = 0.003$), alcohol consumption ($p = 0.010$) and sexual behavior ($P = 0.014$) were associated with depression. YPLHIV with depression symptoms were 3.5 times ($p = 0.003$) more likely to be non-adherent to ART than those without depression. Themes generated regarding associated factors with ART non-adherence were lack of basic needs, privacy, psychological trauma, incomplete disclosure, inadequate psychosocial support and knowledge deficit of ART providers.

Conclusion: Our study shows that depression is considerably high among YPLHIV in Malawi and linked to ART adherence. Strengthening provider mental health training and routinely screening YPLHIV for depression would help in early identification and management of depression thereby improving ART adherence.

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The Prevalence of Concurrent Pulmonary and Extrapulmonary Tuberculosis in Uganda: A Retrospective Study

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Background: Concurrent pulmonary tuberculosis (PTB) and extrapulmonary tuberculosis (EPTB) is associated with poor treatment outcomes yet its epidemiology in Uganda is unknown. The purpose of this study was to determine the prevalence, associated factors, and treatment outcomes of concurrent PTB and EPTB among patients at a national tuberculosis (TB) treatment center located at Mulago National Referral Hospital in Kampala, Uganda.

Material and Methods: We conducted a retrospective review of charts for people with TB who were enrolled in care between January 2015 and December 2019. Eligible charts were for people with pulmonary bacteriologically confirmed TB enrolled into care in the period under study. Concurrent PTB and EPTB was defined as PTB and bacteriological, histopathological, and/or radiological features of TB at another non-contiguous sites. Raw data were entered in EpiData 3.0. Normality was assessed using the Shapiro-Wilk test. Means were compared using the Student t test, whereas percentages for categorical data were compared using χ^2 test and Fisher's exact test. The statistical significance was determined using a p value of 0.05 and a 95% confidence interval (CI) is presented for point estimates. The data were analyzed using SAS Version 9.4.14 Data sets used in this analysis are available from the corresponding author upon reasonable request.

Results: Overall, 400 patient charts were eligible, of whom 240 (60.0%) were aged 15–34 years and 205 (51.3%) were female. The prevalence of concurrent

PTB and EPTB was 8.5% (34/400) [95% confidence interval (CI): 6.0–11.7%]. People with concurrent PTB and EPTB were more likely to have at least one comorbidity (82.4% versus 37.2%, $p < 0.001$), of which HIV was the most frequent. Furthermore, people with concurrent PTB and EPTB were more likely to have empyema (15% versus 2.6%, $p = 0.028$) but less likely to have bronchopneumonic opacification (0.0% versus 15.3%, $p = 0.043$) on chest x-ray imaging. People with concurrent PTB and EPTB had higher mortality (26.5% versus 6.37%) and a lower cure rate (41.2% versus 64.8%), $p = 0.002$.

Conclusion: Our findings highlight the need for early detection of TB before dissemination particularly among people living with HIV.

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Causes of Mortality Among People Living With HIV: Preliminary Results From a Cross-Sectional Study at 29 Health Facilities in Uganda

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Background: AIDS-related deaths in Uganda declined rapidly between 2010 and 2020 following the rapid scale-up of antiretroviral therapy (ART) but the rate of decline has slowed over time, with no change in the estimated deaths between 2019 and 2020. Globally, tuberculosis (TB) is the leading cause of death among people living with HIV (PLHIV). To gain a better understanding of causes of death among PLHIV in Uganda, we conducted an assessment to investigate factors associated with mortality.

Material and Methods: We purposefully selected 29 facilities from 13 regions to include regional referral hospitals and those with the highest number of deaths reported in DHIS2. We included

PLHIV who had at least one documented clinic visit in 2021. Electronic medical records were used to identify deceased or lost clients. Healthcare workers called lost clients to determine if they were in care elsewhere or had since passed. Chart reviews were then conducted on all known deceased clients, extracting information including cause of death. Quantitative data derived from the data collection tools were exported from SurveyCTO and analyzed using MS Excel and StataSE 15.

Results: In total, 899 health records were extracted, of which 846 were confirmed to be deceased and positive for HIV. Median age was 45, 52% were male, and mean weight was 55kgs. 619 had recorded CD4 tests, of which 41% were less than 200 copies/mL and 22% were above 500 copies/mL. 86% received cotrimoxazole at some point and 57% of eligible clients received TB preventive therapy (TPT). 32% had a cause of death recorded according to survey prepopulated categories; 35% listed 'other' cause and 33% 'unknown'. Among the selected causes, TB had the highest proportion (42%), followed by cancer (17%), non-communicable diseases (11%), and cryptococcal meningitis (8%).

Conclusion: As it is globally, TB continues to be a leading cause of death amongst PLHIV in Uganda and increasing efforts to provide TPT may help to reduce this burden. Further investigation of the high proportion of 'other' and 'unknown' causes of death will additionally clarify drivers of mortality. Routinizing mortality audits could inform and improve evidence-based programming to further reduce AIDS-related deaths.

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HIV Viral Load Suppression Among People With a Mental Disorder at Urban Referral HIV Clinics in Uganda: A Mixed Methods Study Using the Social Ecological Model

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Background: Uganda implemented the Universal Test and Treat (UTT) guidelines which require HIV clients to be initiated on ART regardless of their CD4+cell count and to be routinely monitored for viral load to assess their response to antiretroviral therapy (ART). However, there is paucity of data on viral load suppression (VLS) among people living with HIV (PWH) who have a mental disorder.

Material and Methods: We conducted a parallel convergent mixed methods study to determine HIV VLS among people with a mental disorder and explore the socio-cultural determinants of VLS at Butabika National Referral Mental Hospital and Mulago National Referral Hospital HIV Clinics in Uganda. Both clinics are supported by Makerere University Joint AIDS Program (MJAP). We conducted a retrospective medical records review; and seven key informant interviews (KII) and 12 in-depth interviews (IDI) among purposively selected healthcare providers and clinically stable PWH with a mental disorder respectively. Data was collected on demographics, mental disorder, ART, viral load, social support, stigma, and disclosure. Quantitative data was analysed using descriptive statistics and modified poisson regression while inductive thematic analysis was used for the qualitative data.

Results: For 240 PWH with a mental disorder enrolled, mean age was 38.9 years. Of these, 161 (67.1%) were female. Overall, 88.8% (95% CI: 84.0% – 92.2%) achieved VLS. Being a Muslim (aPR=1.15, 95%CI=1.01-1.31), divorced (aPR=0.84, 95%CI=0.71-0.99), baseline CD4 count <200 (aPR=0.83, 95%CI=0.70-0.98), and fair (85-94%) ART adherence level (aPR=0.68, (95%CI=0.48-0.95) were associated with HIV VLS. Disclosure of HIV-sero status improved VLS because of social support. Stigma and discrimination towards both HIV and mental disorders hindered suppression.

Conclusion: HIV VLS among PWH who have a mental disorder is still below the UNAIDS 95% target. There's a need to integrate mental

healthcare into routine HIV care so as to enable healthcare providers to timely screen for and address mental disorders; and to enable patients to receive care at a one-stop facility. Lastly, harnessing family involvement and addressing stigma against PWH with mental disorders are critical to optimising VLS. Prospective studies are needed to determine the interplay between mental disorders and VLS over time.

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Improving TB Case Identification at Community Hotspots Through Partnerships With Private Clinics. The Experience of TASO Rukungiri

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Background: The World Health Organization (WHO) developed the End Tuberculosis Strategy to reduce the number of people suffering from Tuberculosis (TB) by 90%, reduce TB attributed death by 95% and protecting families from the negative impact of the disease. TASO Rukungiri, had an annual TB target of 63 cases for the period October to September 2022 however, only 9 TB cases had been identified between October and December 2021, giving a quarterly achievement of 50% (9/18). The shortfall was attributed to TASO Rukungiri majorly concentrating on diagnosing TB cases among the registered HIV clients only. TASO sought to improve TB case identification in the community through partnering with private clinics in TB hotspots.

Material and Methods: We conducted a retrospective data review of all TB clients that had been managed at the TASO Rukungiri. The findings enabled us map communities with high TB prevalence and selected three nearby private clinics. Private clinic staff were trained on presuming TB cases, collecting and submitting Gene-expert samples to TASO. Monthly review meetings were held with the private clinics to discuss progress, challenges and solutions.

Results: By 30th September 2022, we posted a 130% (82/63) achievement of the target. The community contributed 15% (12/82) HIV negative cases and 39% (11/29) PBC-Cases.

Discussions: There are missed opportunities for TB identification at community level which never feed into the existing health systems. These can be tapped through the private sector engagement and addressing the factors hindering the initial visits of the TB cases to the designated TB treatment units.

Conclusion: There are many unreached TB cases in the communities and mainly among HIV negative individuals. TB screening at hotspots and private clinics, greatly increases opportunities to identify and treat TB cases. Lessons Learnt: Private clinic around designated TB hotspots tend to receive and treat clients that have TB without knowing they are infected. Agreeing on clear roles and responsibilities in screen and managing suspected TB cases yields better outcomes for the clients and private clinic practitioners.

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Tuberculosis Preventive Treatment: Comparison of Isoniazid and 3HP at Carmelo Hospital, Gaza Province, Mozambique

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Background: Monitoring of preventive treatment for tuberculosis (TPT) with isoniazid has been a challenge for the NTP. Up to now, the program reports Isoniazid Preventive Treatment (IPT) starts but not completions. PEPFAR implementing partners reported a 65% IPT completion rate in 2020. The introduction of a shorter regimen of isoniazid and rifapentine given once weekly for three months (3HP) may improve TPT completion rates, as this regimen is shorter and has less side effects and better tolerance. We assessed the feasibility of implementing 3HP as TPT in PLHIV.

After the start of 3HP roll out in Mozambique, we conducted a comparison of completion rates for 3HP and isoniazid preventive treatment in PLHIV on ART in Carmelo Hospital, a reference site for TB treatment in Chokwe district, Gaza Province, in Southern Mozambique.

Material and Methods: In order to understand TPT completion rates with the 3HP regimen as a preventive therapy for TB in PLHIV, we collected data from patients initiated on TPT between April to December 2021, who should have finished their treatment by the end of June 2022. Patients newly initiating ART were started on 3HP and those stable on ART were started with IPT.

Results: Out of the 262 PLHIV initiating TPT in the period, 65 (31%) received 3HP and 209 (69%) IPT. 97% 3HP treatment completion rate, versus 67% of those initiated on IPT. No severe adverse events were reported for either treatment regime during this period.

Conclusion: The introduction of 3HP seems to be a viable alternative to IPT for TPT at Carmelo Hospital. 3HP showed better patient adherence and treatment completion rates.

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Lessons Learned From the Introduction of Advanced HIV Disease Package of Care in Nigeria

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Background: In Nigeria, 32% of PLHIV who received CD4 tests in 2018 had Advanced HIV Disease (AHD), this population had the highest mortality. Despite this, a package of care for AHD (AHD PoC) was not clearly defined in-country. This abstract outlines

the process and lessons learned from introducing the AHD PoC in Nigeria.

Material and Methods: The Nigeria MOH constituted a working group in 2019 to develop and oversee the implementation of the AHD PoC in-country. The first phase of implementation involved 28 facilities across 4 high-burden states that account for 31% of the national HIV burden (Lagos, Akwa-Ibom, Rivers, Anambra). In 2020, National guidelines, training materials, and reporting tools were reviewed to include the AHD PoC. Healthcare-worker (HCW) capacity was built to implement AHD PoC. Commodities were distributed, and facility implementation commenced in February 2021. Newly identified PLHIV were screened for AHD. Those with AHD were screened for Tuberculosis and Cryptococcal-Meningitis (CM), followed by rapid ART initiation and intensive adherence support.

Results: By September 2022, 13,795 new PLHIV were identified; 85.4% (11,781) received CD4 tests, of which 46.6% (5,487) had CD4 <200cell/mm³. Of the 5,487 patients, 77.9% (4,277) were screened for TB using TB LF-LAM, 34.1% (1,458) were positive, of which 67.8% (989) started TB treatment. The screening coverage for blood cryptococcal antigen (CrAg) using CrAg LFA was 83.4% (4,576), and 2.3% (106) were positive. Only 35.8% (38) of blood CrAg-positive patients received a CSF CrAg test, 23.7% (9) were CSF positive, of which 66.7% (6) started CM treatment. Poor access to adjunct commodities contributed to observed gaps in TB LF-LAM and CSF CrAg testing.

Conclusion: Implementing the AHD PoC increased TB and CM case-finding among PLHIV and reduced HIV-associated mortality, however, more effort is required to implement AHD PoC using a public health approach effectively. Programming for CrAg and TB LF-LAM tests should consider adjunct commodities vital to close gaps observed across the cascade, particularly lumbar-puncture (LP) packs for CSF CrAg and urine cups for TB LF-LAM. Considering HCW capacity gaps for LP at some facilities, a hub-and-spoke model will be ideal for scale-up and a strengthened LP referral mechanism.

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The Hypertension Cascade of Care in People With and Without HIV in Urban South Africa – An Observational Study

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Background: Failure to address the burden of hypertension (HTN) threatens tackling the leading preventable risk factor for cardiovascular disease and all-cause mortality in general, and for people with HIV (PWH). HTN is the most frequent risk factor presenting in South Africans visiting primary healthcare (PHC) facilities. This study investigates HTN care provided across nine PHC facilities in Johannesburg in PWH and people without HIV (PWoH) by use of an HTN cascade of care (CoC).

Material and Methods: This cross-sectional study reports on observational baseline data of the integrating HIV and hEART health in South Africa (iHEART-SA) project. Data of eligible participants (n=18510; 68.3% female) with a mean age of 41.6 (SD: 11.6), were collected during routine visits to the PHC facilities, with measured blood pressure (BP) as the primary outcome. Data for the construction of the HTN CoC was based on a subset of 7158 participants for whom medical file review was completed, and to extract complementary data (e.g. BP medication, prior BP diagnoses). HTN was defined as a measured systolic BP over 140, or diastolic BP over 90 mmHg, or a previous record of HTN diagnosis. The cascade of care, stratified by HIV status, included recorded prevalence, initial screening, diagnosing participants who match hypertension definition, participants receiving anti-

hypertensive treatment, and participants reaching BP-control.

Results: The median BP was 133/80 (PWH 128/79; PWoH: 133/80). Approximately 99% of all participants (n=18510) were screened. Out of 7158 participants with reviewed files (mean age = 44.1; SD:11.4) and 4864 being female (68.0%), 3810 participants met the HTN definition (53.4%; PWH: 38.5%; PWoH: 79.2%). Among individuals with HTN, 67,9% of all participants were adequately diagnosed (PWH: 44,1%; PWoH: 86,8%), and 62.6% on treatment (PWH: 40.5%; PWoH: 81.1%). Finally, 25.2% (n=961) achieved BP control (PWH: 15.4%, PWoH: 33.5%).

Conclusion: The burden of HTN in general and among PWH was very high. Hypertensive PWoH were more frequently on treatment and more often achieving BP control compared to hypertensive PWH. Looking at all HTN CoC stages, PWoH were outperforming PWH. Especially diagnosing HTN among PWH was limited, whilst hypertensive PWoH were more frequently diagnosed with BP.

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Hypertension Among People Living with HIV After Starting or Switching to DTG, EFV, or ATV/r-based ART at Newlands Clinic, Zimbabwe

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Background: Dolutegravir (DTG)-based ART has been shown to be associated with weight gain. We previously confirmed this for people living with HIV (PLWH) attending Newlands Clinic in Harare, Zimbabwe. Since overweight and obesity are risk factors for hypertension, we aimed to compare

blood pressure (bp) trends of PLWH starting or switching to DTG-, efavirenz-(EFV), or ritonavir-boosted atazanavir-(ATV/r) based ART.

Material and Methods: We included adult PLWH who started or switched to DTG-, EFV-, or ATV/r-based ART at Newlands Clinic between 2008 and 2022. We extracted all bp measurements in the first two years after ART start/switch. Using Bayesian binomial additive mixed models, we examined trends in the proportion of people with high bp (systolic pressure >140 mmHg or diastolic pressure >90 mmHg) and hypertension (two consecutive high bp measurements) after ART start/switch. We included ART regimen, sex and their interaction as fixed effects, a random intercept by person, and smoothed monthly trends by sex and ART regimen. We fitted models (A) overall and stratified by (B) BMI group and (C) age group.

Results: We analysed 35449 bp records from 4348 PLWH of whom 3181, 787 and 380 were starting/switching to DTG, EFV- and ATV/r, respectively. We found a substantial increase in the proportion of patients with high bp over 24 months for DTG, from 6.4% (90%-credible interval 4.4-9.6%) to 22.1% (17.1-27.0%) in females, and from 4.9% (3.3-7.6%) to 25.7% (20.0-31.2%) in males. This increase was observed in all BMI and age groups, but more pronounced in the elderly (≥ 40 years) and overweight or obese PLWH (BMI $\geq 25\text{kg/m}^2$). Prevalence of hypertension was generally lower than prevalence of high bp (approximately 15% of PLWH with hypertension at 2 years after starting/switching to DTG), but time trends were similar. For EFV and ATV/r there was no evidence for an increase in the proportion with high bp or hypertension after ART start/switch.

Conclusion: Contrary to EFV and ATV/r, DTG was associated with an increase in prevalence of high bp and hypertension. Routine monitoring of bp in PLWH on DTG-based ART is recommended. Early interventions to lower bp could benefit PLWH on DTG-based ART.

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Incidence Rate and Predictors of Hypertension Among Adult PLHIV: A Five-Year Cohort Review

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Background: According to the World Health Organization in 2021, an estimated 1.28 billion adults aged 30-79 years worldwide have hypertension. The scale with up of antiretroviral therapy (ART) in sub-Saharan Africa has led to increasing life expectancy and thus increased risk of hypertension and age-related chronic diseases. This study seeks to review the incidence rate and predictors of hypertension amongst adult PLHIV accessing ART treatment services in ECEWS USAID-funded ACE 5 project states.

Material and Methods: A retrospective cohort study of 46254 APLHIV aged 18 years and older, being treated with antiretroviral medications from 2018-2022. We abstracted data from medical records of adult patients who initiated ART and analyzed them using Statistical Package for Social Sciences 23. Descriptive statistics were used to characterize participants' social, demographic, and clinical characteristics as appropriate. Chi-square was employed to identify potential predictors and multiple logistic regression was used to identify predictors of hypertension at $p < 0.05$ using Statistical Package for Social Sciences 23. The normality of continuous variables was assessed using histograms, Q-Q plots, and the Kolmogorov-Smirnov test at $p\text{-value} = 5\%$. We defined hypertension as at least two consecutive clinical visits, with SBP of at least 140 mmHg and/or SBP of at least 90 mmHg, or a prescription for antihypertensive medication.

Results: The overall median (IQR) age of APLHIV was 37(13) years with 29308(64.3%) of APLHIV being females. After adjusting for age, sex, and other potential predictors, age (years) < 24 vs > 64 (Adjusted Relative Risk ARR=2.03, 95% Confidence

Interval (CI): 1.16- 3.55) none vs senior secondary (ARR=1.44, 95%CI: 1.00-2.06), Junior Secondary vs senior secondary (ARR=0.57, 95%CI: 0.37-0.87) and post-secondary vs senior secondary education (ARR=0.67, 95%CI: 0.62-0.88), being actively retained in treatment vs being inactively retained in treatment (ARR=0.48, 95%CI: 0.30-0.61), community point of entry vs facility (ARR=1.42, 95%CI: 1.13-1.78) were predictors of hypertension among adult PLHIV within this follow up period.

Conclusion: Unchecked hypertension amongst PLHIV has the capacity to alter the gains of the PEPFAR treatment program, hence the need for an integrated one-health program to address comorbidity is essential for the future of HIV programming.

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Intensified Clinical Services Improved Childhood Tuberculosis (TB) Case Notification in Supported Health Facilities in Southern and Western Tanzania

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Background: Globally, studies show that Tuberculosis is among top-ten deadly diseases in populations <15-years. Tanzania is among countries in Sub-Saharan Africa with high childhood-TB burden accounting for 15–20% of all TB notifications. Majority of cases remain undiagnosed due-to low-capacity of healthcare-workers (HCWs). WHO recommends using score-charts, sputum induction, and gastric aspiration for childhood-TB diagnosis.

Material and Methods: Baylor-Tanzania implements USAID-funded project, Uhuru TB/FP in southern and western regions of Tanzania, conducts training to HCWs on using score-charts, sputum induction, and gastric lavage to maximize

childhood-TB detection in Katavi, Kigoma, Songwe, and Rukwa regions. On-job training, mentorships, and clinical attachment of HCWs at Baylor Centers-of-Excellence in Mbeya and Mwanza complement it. Program implementation review carried-out from October-2020 to June-2022, compared with baseline-period from October-2019 to September-2020. Data extracted from national electronic Tuberculosis and Leprosy database.

Results: At-baseline, 4-regions notified 410 childhood-TB cases of 2733 total TB-cases. Median-age was 4-years-old. 213(52%) <5-years, 208(51%) males. 277(68%) Pulmonary-TB (PTB), 133(32%) Extra-pulmonary-TB(EPTB). 50(12%) had TB/HIV, 50(100%) started/were on Antiretroviral-Therapy (ART), 46(96%) started cotrimoxazole-Preventive-Therapy(CPT). 172(42%) self-referrals,129(31%) facilities-referral, 109(27%) community-referral. 44(11%) bacteriologically confirmed, 218(53%) diagnosed by Pediatric-TB-Score-Chart (PTSC), 148(36%) by Chest-X-ray(CXR). 402(98%) Home-based Direct-Observed-Therapies (HBD). 386(94%) Treat success rate, 21(5%) deaths-rate, 3(1%) lost-to-follow-ups (LTFU). After 21-months of project implementation, 1485 childhood-TB cases notified. Cases increased from 84 to 389 in Katavi, 204 to 418 in Kigoma, 52 to 308 in Songwe, 70 to 370 in Rukwa. 987(66%) <5-years, 786(53%) males. Median-age was 4-years-old 1133(76%) PTB, 352(24%) EPTB. 128(9%) had TB/HIV, 128(100%) were/started ART, 109(85%) started CPT. 560(38%) self-referral cases, 479(32%) Facilities-referrals, 446(30%) community referrals. 922(62%) diagnosed by PTSC, 316(21%) by CXR, 247(17%) bacteriological confirmed. 1477(99%) HBD. 1080(73%) Treatment success rate, 364(25%) on-care, 35(2%) death-rate, 6(0.4%) LTFU.

Conclusion: Capacity-building for HCWs is a crucial indicator of improved childhood-TB services and notification trends and should be prioritized. Scaling-up this practice in all supported health facilities is paramount.

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Oro-Facial Lesions in Newly Diagnosed Adults with HIV: A Clinically Diagnostic Disease Severity Predictor in Resource-Limited Settings

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Background: Oro- facial lesions associated with HIV infection have been documented as clinical indicators for retroviral screening. This study aimed to assess the prevalence of HIV- related oral lesions among newly diagnosed people with HIV and to determine their relationship with immune suppression.

Material and Methods: Antiretroviral clinics at two leading tertiary hospitals in Ibadan (Southwest Nigeria) participated in this cross-sectional study. Institutional approval was granted by the ethics committee at the University of Ibadan/University College Hospital. Data pertaining to demographics, presence of oro-facial lesions, and CD4+ T cell counts was documented for all participants who were categorized into those with (GI) and without (GII) HIV associated oro-facial lesions. Chi square was used (5% significance level) to determine if any association existed between the level of immune suppression caused by HIV and oro-facial lesions. Mann Whitney test was used to compare the median CD4+ T cell counts between the GI and GII categories. Data analysis was performed using SPSS (v25).

Results: A total of 193 adults newly diagnosed with HIV were recruited (57 males - 29.5%; 136 females - 70.5%) (age range: 16 - 75 years; mean: 39.8 +/- 11.5 years). Two- thirds of the participants had oro-facial lesions including candidiasis (62.5%), melanotic hyperpigmentation (16.7%), herpes zoster (1%), aphthous ulcer (1%), necrotizing ulcerative gingivitis (1%), pruritic papular eruptions (1%) and a combination of oral lesions (16.7%). Severe immunosuppression (CD4 count \leq 200

cells/mm³) was noted in less than half (44%) of the study participants, significantly more for the GI (75.3%) category compared to the GII (24.7%) ($p=0.010$). The median CD4+ T cell count was lower in GI [168 cells/mm³ (IQR 53.50-347)] category compared to GII [299cells/mm³ (IQR 157-505.50)]. There was also a statistically significant association between mean rank value of CD4+T cell count and presence of oro-facial lesions ($p=0.000$).

Conclusion: This study revealed a statistically significant association between severe immunosuppression and HIV-related oro-facial lesions, particularly among those with melanotic hyperpigmentation. Thus, oro-facial lesions could serve as valuable predictive indicators for both clinical diagnosis and disease severity among people with HIV, particularly in resource- limited settings.

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The Effects of Stunting and HIV on Cognitive Development: A Structural Equation Modelling Analysis

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Background: Over 149.2 million children worldwide are stunted [1] and at risk of not performing well in school, school dropout, and earning poor wages due to cognitive impairment. Nutrition intervention programmes target reversal of stunting effects through food supplements, but these do little to address the effects of stunting on executive functions among other cognitive indicators, and so interventions to protect against impaired cognitive functions are needed. This study aimed at gauging the direct effect of stunting on cognitive outcomes and the extent to which stunting (partially) mediates the effects of HIV, age and gender on cognitive outcomes.

Material and Methods: We used structural equation modelling in a cross-sectional design to

test the mediating effect of stunting and predictive effects of HIV, age, and gender on cognitive latent variables flexibility, fluency, reasoning, and verbal memory, among 328 children living with HIV and 260 children living without HIV aged 6 – 14 years from Nairobi, Kenya.

Results: The model predicting the cognitive outcomes fitted well (RMSEA = .041, CFI = 0.966, $\chi^2 = 154.29$, DF=77, $p < .001$). Height-for-age predicted fluency ($\beta = .14$) and reasoning ($\beta = .16$). HIV predicted height-for-age ($\beta = -.24$) and showed direct effects on reasoning ($\beta = -.66$), fluency ($\beta = -.34$), flexibility ($\beta = .26$) and verbal memory ($\beta = -.22$), highlighting that the effect of HIV on cognitive variables was not fully mediated by height-for-age. There were no gender differences in height-for-age though males outperformed females on fluency ($\beta = .13$).

Conclusion: In this cross-sectional study, we found evidence that stunting plays a role in the effects of HIV on cognitive outcomes. The model highlights the importance of targeted stunting reversal interventions in ameliorating the effects of stunting on cognitive outcomes among lower school students infected with HIV, though poor performance may still persist due to strong direct effect of HIV infection on cognitive outcomes.

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Cardiovascular Risk and Disease Among Patients Living With HIV Attending the Emergency Departments in First Hospitals in Three Regions of Mozambique

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Background: Mozambique HIV prevalence among adults is 12.5%, corresponding to over 2 million people living with HIV (PLHIV). Occurrence of cardiovascular risk factors and cardiac disease was found in previous studies of PLHIV on antiretroviral

therapy (ART) across the lifespan in Mozambique. We aimed at describing the cardiovascular risk profile of PLHIV attending Emergency Departments (ED) at first referral hospitals in Mozambique.

Material and Methods: This prospective, multi-site, observational study was conducted in EDs in southern (Maputo), central (Beira) and northern (Nampula) of Mozambique. We randomly selected 7,809 cases (age ≥ 1 years) during the seasonally distinct months of April/2016-2017 and October/2017 (Beira Central Hospital-BCH 2295; Nampula Central Hospital-NCH 2559; Mavalane Geral Hospital-MGH 2955). Data on patients' demographics, HIV status, cardiovascular risk and clinical outcomes was collected.

Results: We found 873 PLHIV (481 females; 69.9% adults) representing 11.2% of all patients. The proportion of PLHIV among the overall patients at ED was 381 cases (12.8%) in MGH, 340 (14.8%) in BCH, and 152 (4.8%) in NCH, matching the differences in prevalence between the three provinces. Out of 610 adults (368 females; 60.3%) over one quarter had hypertension (169;27.7%); 39 (6.4%) was severe and/or complicated hypertension. Diabetes was found in 10 (1.6%) PLHIV. There were 120 (19.7%) smokers (74 corresponding to almost 2/3 in BCH against only 3.3% in NCH). Daily exposure to biomass fuel was self-reported in 103 (16.9%). Overweight was found in 101 (16.6%) PLHIV, 52 (8.5%) were obese and 44 (7.2%) had hypercholesterolemia. Thirty-five patients (5.7%) had previous diagnosis of cardiovascular diseases: 20 heart failure and 15 stroke. Other comorbidities included previous diagnosis of tuberculosis (180;29.5%) and severe anemia (132;21.6%). At the time of admission 148 (24.3%) were taking traditional medicines. 22 (3.6%) were admitted to hospital and 6 died within the ED.

Conclusion: The commonest cardiovascular risk factor in PLHIV admitted at Eds is hypertension followed by overweight/obesity, tobacco use and hypercholesterolemia. The proportion of PLHIV among patients attending the ED in three hospitals of Mozambique approximately matched the known prevalence the respective regions. Our results suggest the need for active screening and management of cardiometabolic risk/disease in PLHIV.

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Comparing Treatment Outcomes and Associated Factors in Baseline Culture Positive and Culture Negative Drug-Resistant Tuberculosis Patients in Uganda

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Background: Drug-Resistant Tuberculosis (DR-TB) remains a significant public health burden and a threat to the progress made in tuberculosis (TB) control and prevention in sub-Saharan Africa. In this study, we compared the clinical outcomes of culture-negative and culture-positive drug-resistant tuberculosis (DR-TB) patients to gain insight into the prevalence and characteristics of DR-TB across these patient populations and identify potential risk factors associated with poor outcomes.

Material and Methods: This was a retrospective review of medical records of adult Ugandans who had been treated for DR-TB at Mbarara Regional Referral Hospital (MRRH) in Uganda. Sociodemographic characteristics, baseline clinical variables, and treatment outcomes were extracted from the patient files and compared in culture-positive and culture-negative patients. Bivariate and multivariate logistic regression was done to compare treatment outcomes in these patients. All analysis was based on the two-sided p-value and a 5% error margin.

Results: Of the 385 files reviewed, 323 (83.4%) met the study inclusion criteria. Of these, 178 (55.1%) were PLHIV. A total of 70 participants (22.7%) had unfavorable treatment outcomes (treatment failure, loss to follow-up, or death), with the majority of these having had culture-positive sputum at baseline (74.2%). History of cigarette smoking [aOR = 3.45, p=0.014; aOR = 13.12,

p=0.009] was a predictor of poor outcomes in culture-positive and culture-negative patients respectively. Among culture-positive patients, age greater than 60 years [aOR = 6.09, p=0.045] and mid-upper arm circumference (MUAC) < 23 [aOR = 2.70, p=0.038] were predictors of poor outcomes, whereas among culture-negative patients, neutrophil to lymphocyte ratio > 2.53 [aOR = 5.71, p=0.042] and the total lymphocyte count [aOR = 0.23, p=0.007] were the identified predictors.

Conclusion: There is a higher prevalence of unfavorable treatment outcomes among patients with culture-positive DR-TB compared to culture negative. History of cigarette smoking was a predictor of treatment outcomes in both populations of patients. Age and MUAC < 23 were predictors of poor outcomes in culture-positive patients, whereas total lymphocyte count and neutrophil-to-lymphocyte ratio were the identified predictors in culture-negative patients. Smoking cessation programs and early correction of malnutrition and hematological abnormalities could be used to guide treatment and improve treatment outcomes.

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Prioritizing Nutrition in the Management of Advanced HIV Disease in Zimbabwe – Secondary Data Analysis From the Electronic Patient Management System (ePMS)

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Background: There is a bidirectional connection between HIV infection and inadequate nutrition, and this leads to increased impaired immune function and susceptibility to opportunistic infections (OIs) in people with advanced HIV disease (AHD). AHD clients are more susceptible to

HIV-related morbidity and mortality when experiencing inadequate nutrition. The objective of the study was to assess the nutritional status of clients with AHD using pre-existing patient data in the electronic Patient Management System (ePMS) from all OI/ART clinics in Zimbabwe to inform nutrition interventions.

Material and Methods: The secondary data analysis utilized pre-existing data from the Ministry of Health and Child Care ePMS dataset between the 3rd quarter of 2014 until mid 2022. Proxy WHO standard clinical indicators captured by a clinician for assessing nutrition status among AHD clients and all people living with HIV (PLHIV) were used. These included, “Wasting Syndrome (WS)”, “Weight loss >10% (WL),” and “Failure to Thrive (FT)”. Body mass index (BMI) was not calculated due to data availability. Descriptive statistics were performed, and a logistic regression assessed sociodemographic factors associated with HIV-related “WS,” “WL,” and “FT” among AHD clients. We also developed a Menu Modelling Tool (MMT) an e/online tool for nutrition education among AHD clients.

Results: A total of 91,004 client records were accessed from the ePMS dataset, including 33,996 (18,889 females and 14,904 males) AHD clients (WHO stage 3 and 4 only). Prevalence of poor nutrition status was higher among AHD clients compared to other PLHIV: WS: 16.91% (AHD) and 9.02% (PLHIV); WL: 7.67% (AHD) and 3.97 (PLHIV); FL: 3.13% (AHD) and 2.85% (PLHIV). The following categorical socioeconomic variables were significantly associated with the probability of having HIV-related WS, WL, or FL: level of care, province, marital status and education level.

Conclusion: This assessment provided critical data on the burden of malnutrition among PLHIV, and specifically, AHD clients in Zimbabwe. Routine nutrition analysis from client records can help inform the design of nutrition interventions. There is need to prioritize regular nutrition assessments such as BMI and nutrition interventions (e.g MMT) as part of the package of care for clients with AHD to improve morbidity and mortality outcomes.

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Apport du Test Urinaire TB-LAM Dans le Diagnostic Précoce de la Tuberculose Chez les PVVIH Admis au Service des Maladies Infectieuses et Tropicales du Centre Hospitalier Universitaire de Treichville

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Contexte : La tuberculose est une maladie infectieuse due à un bacille acido-alcool-résistant (BAAR). Elle demeure la première cause de mortalité chez les VIH-positifs et son diagnostic est problématique. l'objectif était de rapporter l'expérience de l'utilisation du test urinaire TB-LAM au Service des Maladies Infectieuses et Tropicales du CHU de Treichville et d'évaluer son apport dans le diagnostic précoce de la tuberculose chez les PVVIH.

Matériel et méthodes : il s'est agi d'une étude transversale, descriptive et analytique qui s'est déroulée de juin 2019 à février 2020 et qui a concerné les patients hospitalisés ou reçus en ambulatoire. Les données ont été saisies et analysées par le logiciel EPI info.

Résultats : Au total, 410 patients ont été inclus dans l'étude. L'âge moyen était de 41,5 ± 11,2 ans avec un sex-ratio égal à 0,51. Le test TB-LAM était positif chez 254/410 (62%). Le diagnostic de tuberculose avec la bascilloscopie ou le GeneXpert a été fait chez 53/410 (12,9%) patients. La bascilloscopie et le GeneXpert réalisés quelque soit le liquide biologique couplé au test urinaire TB-LAM ont permis de poser le diagnostic chez 258/410 (62,9%)

patients. Les facteurs associés à la positivité d'un TB-LAM étaient la fièvre et la toux chronique ≥ 2 semaines, l'anorexie, l'asthénie inexpliquée, les sueurs nocturnes, la dénutrition, la condensation, les douleurs abdominales, la présence d'adénopathie, le stade clinique CDC C, l'immunodépression sévère avec CD4 < 200 et l'anémie sévère.

Conclusion : Le test urinaire TB-LAM a un apport considérable dans la confirmation du diagnostic précoce de la tuberculose chez les PVVIH. Ce test couplé aux autres outils de diagnostic permet d'augmenter le rendement diagnostique.

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Trends of Coverage and Yield of HIV Testing Services Using a Lay Counselor-Led Intensified HIV Risk Screening Strategy in Zambézia Province, Mozambique: An Interrupted Time Series Analysis (2019-2020)

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Background: To improve and scale-up efficient HIV counseling and testing, HIV risk screening performed by lay counselors additional to clinician-led screening was introduced in Zambézia Province, Mozambique in 2019. The aim of this evaluation was to measure the impact on coverage and yield

of HIV testing services within emergency/triage wards and outpatient clinics.

Material and Methods: Programmatic data of 18 health facilities were analyzed from March 2019-April 2020. Interrupted times series analyses were performed, using generalized linear mixed effects models with random intercept and slopes, stratified by age groups (15-19, 20-49, >50 years of age), and health facilities set as clusters.

Results: Data from 101,487 HIV test results were analyzed, 55% of women, 79% among reproductive-aged adults (20-49 years of age). The intervention had a positive impact on testing volume and number of positive results among the reproductive-aged adults: a mean increase of 46 (95%CI: 21-71; $p < 0.001$) tests were performed when the intervention was implemented, with a sustained effect over time: on average, 17 (95%CI: 12-22; $p < 0.001$) additional HIV tests were performed per month. On average, an immediate increase of 5 (95%CI: 1-9; $p = 0.008$) additional positive tests results per month was observed, without sustained increase. The younger age group showed a mean immediate increase of 11 (95%CI: 3-18; $p = 0.007$) tests performed per month, sustained over time (4 [95%CI: 3-5]; $p < 0.001$), but no significant change in the number of new positive results. A non-significant increase on testing volume and positive results was seen among older individuals. Positivity rate only changed significantly for the older age group, with lower odds of having a positive result after intervention initiation (OR 0.65 [95%CI: 0.44-0.95]; $p = 0.026$), versus OR 1.2 [95%CI: 0.8-1.8]; $p = 0.47$ and 1.0 [95%CI: 0.8-1.2]; $p = 0.74$, among 15-19 years and 20-49 years groups, respectively.

Conclusion: The intervention implemented in selected health facilities contributed to an increase in the number of tests performed within emergency/triage wards and outpatient clinics. Although no increase in HIV test yield was seen, the intervention resulted in increases in HIV testing and counseling volumes in key groups, specifically younger adults and reproductive-aged adults, contributing towards the first UNAIDS 95-95-95 target.

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Index Testing Strategy Optimizes HIV Case Finding among Men in Five Nigerian States, Moving Country Closer to Epidemic Control

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Background: Nigeria accounts for 9% of the global HIV burden, with about 10% of new HIV cases occurring in the country. The National Agency for the Control of AIDS (NACA) states that only 60% of men 15 years and older living with HIV are currently on HIV treatment. Studies show that men and boys are less likely than their female counterparts to test for HIV, initiate antiretroviral therapy and remain engaged in care. Structural barriers, such as clinic operating hours or locations that are inconvenient for men who work, and the direct or indirect opportunity costs of obtaining services, such as time lost from work, prevent men from accessing HIV services. Due to these factors, identifying men with HIV is more difficult relative to women. The USAID-funded Reaching Impact, Saturation, and Epidemic Control (RISE) project implemented Index Testing (IT) as a strategy to increase HIV case identification among men through their sexual partners.

Material and Methods: A comparison of data on index testing from October 2019–March 2020 (before) to April–September 2020 after providers' training, routine data reviews, and remediation were used to intensify index testing. Registers were reviewed to assess the number of HIV tests and HIV-positive clients identified from both modalities to determine their yield and contribution for both periods.

Results: Before intensified index testing, 3,245 men aged 15-44 years were tested through the index modality and 480 tested positive (yield-15%, contribution-18%). Similarly, 68,562 men were

tested for HIV and 2,212 tested positive from other modalities (3% yield and 82% contribution). Following implementation of intensified index testing, 6,418 men were tested and 1,157 positives were identified (18% yield and 28% contribution) while other modalities tested 91,056 and identified 2,974 positives (3% yield and 72% contribution). Results from the two modalities showed 141% and 34% increase in case identification between the two periods for index and other modalities respectively.

Conclusion: Strengthening providers capacity on Index testing and routine data reviews and remediation has been found to be an effective strategy for HIV case finding among men which is critical in achieving epidemic control.

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Improving PrEP Initiation Among Pregnant and Lactating Women: Change Interventions and Results From a Quality Improvement Collaborative Project in Hhohho and Shiselweni, Eswatini

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Background: Between July and September 2020, only 34% (1093/3217) HIV-negative pregnant and lactating women (PLW) who were offered and accepted pre-exposure prophylaxis (PrEP) were initiated on PrEP at EGPAF-supported health care facilities in the Hhohho and Shiselweni regions of Eswatini. This highlighted a gap in PrEP initiation by health care providers.

Material and Methods: Between April 2021 and February 2022, 12 high-volume health care facilities in Hhohho and Shiselweni regions participated in a Quality Improvement Collaborative (QIC) Project to improve PrEP initiation among PLW who accepted PrEP when offered. Root cause analysis revealed that the main underlying factor associated with low PrEP initiation among PLW who had accepted PrEP

was lack of buy-in from health care providers. Interventions tested to improve PrEP initiation included sensitizing health facilities of their PrEP targets; mentoring health care providers to effectively deliver PrEP messaging tailored to PLW; standardizing PrEP as part of antenatal care (ANC) and postnatal care (PNC) packages of services; tracking PrEP targets on a monthly basis, discussing progress during monthly multi-disciplinary teams (MDTs); and conducting bi-annual experience sharing meeting by sites involved in the QIC.

Results: Interventions tested by the QIC contributed to improving PrEP initiation among women offered and accepted PrEP to 79.0% (1,688/2,137) by February 2022 when the QIC project ended. PrEP initiation among women visiting 1st ANC was 81.0% (1,334/1,646), and 72.1%(354/491) among women visiting PNC 6 weeks after delivery. While initiations improved, PrEP acceptance among HIV-negative PLW was low at 47.4% (2,137/4,513).

Conclusion: Standardizing PrEP during ANC and PNC was identified as a promising practice to improve PrEP initiation by healthcare providers among PLW who accept PrEP. However, there is a need to explore the reasons leading to low PrEP acceptance among PLW.

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Real-World Effectiveness of HIV Pre-exposure Prophylaxis Among Key and Priority Populations Receiving HIV Services From PNFP Health Facilities in Uganda: A Retrospective Cohort Study

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Background: Pre-exposure prophylaxis (PrEP) is an evidence-based HIV prevention intervention with reported efficacy from randomized clinical trials

ranging from 86% to 93%. We found few observational studies that have reported on research-based effectiveness of PrEP. The objective of this study was to describe the effectiveness of PrEP in a Uganda cohort of key and priority populations at increased risk of acquiring HIV, using program data from PNFP health facilities.

Material and Methods: We conducted a retrospective cohort study using data of clients who sought HIV services between October 2015 and September 2022 at private-not-for profit health facilities and organizations under the USAID Local Service Delivery for HIV/AIDS Activity. Data was obtained from the online key population tracker. We obtained data on age, sex at birth, population category, date of registration, date of last follow-up, baseline HIV test result, HIV result at last follow up date, PrEP screening at baseline and PrEP initiation at baseline. We only included clients with a negative baseline HIV test result. We determined the risk of acquiring HIV in relation with PrEP initiation using Cox proportional hazards regression adjusting for age category, sex at birth and population category. Data was analyzed using STATA v15.

Results: The analysis included 19,063 clients. Median time in care was 3.4 months (IQR 1.1 to 7.1). Over half of these (55%) were female at birth, over 80% were aged 15 to 34 years and 43% were sex workers. All were screened for PrEP at baseline, of whom 17,350 (91%) were eligible for PrEP. Of these, 15,811 (91%) initiated PrEP. Overall, 25 of the 19,063 clients (0.13%) seroconverted. Of these, 19 (76%) were female, 14 (56%) were aged between 25-34 years, 14 (56%) were sex workers and 14 (56%) were on PrEP. The risk of acquiring HIV among those ever initiated on PrEP was reduced by 98.6% compared to those who never initiated PrEP, adjusted hazards ratio 0.014 ($p < 0.001$, 95% CI 0.006 to 0.032).

Conclusion: PrEP is an effective HIV prevention intervention that should be scaled up if we are to end HIV as a public threat by 2030.

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Willingness to Access PrEP for Adolescent Girls and Young Women Seeking Emergency Contraception at Community Pharmacies in Uganda

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Background: Adolescent girls and young women (AGYW) account for 26% of new HIV diagnoses in Uganda, but only 4.6% of pre-exposure prophylaxis (PrEP) users. Differentiated delivery of PrEP services at private pharmacies, often frequented by this population, could increase prevention coverage.

Material and Methods: We recruited AGYW, aged 18-24 years, seeking emergency contraception (EC) from 13 randomly selected community-pharmacies in central Uganda between May and December 2022. We hypothesized that AGYW seeking EC at community-pharmacies would be willing to access and use PrEP. Following brief training, pharmacy providers delivered study information to interested AGYW and referred them to the research clinic for data collection. The primary outcome was willingness of AGYW to access PrEP, evaluated using an interviewer-administered cross-sectional survey. We used descriptive statistics and modified Poisson regression to analyze the data.

Results: We enrolled 130 AGYW, median age 22 years (interquartile range [IQR] 20-24). Of these, 104 (80%) were living alone or had no partner, and 64 (49%) had no child. Eighty-four (65%) were employed and median monthly income was \$54.4[40.8-81.6]. AGYW accessed EC a median of 3 times (IQR 2-6) in the prior 3 months. Most (81%) chose community-pharmacies as the most convenient place to receive PrEP services instead of public/private health facilities, or community outreach. Approximately half of AGYW (73; 56%) were willing to receive PrEP from community-

pharmacies. Willingness to access pharmacy-delivered PrEP was associated with PrEP awareness (adjusted prevalence ratio [APR] 1.90; 95% confidence interval [CI]:1.43-2.51; P<0.001), having a busy schedule (APR 1.60; 95%CI:1.20-2.13; P=0.001), experiencing symptoms of a sexually transmitted infection in the prior 3 months (APR 1.58; 95%CI:1.22-2.06; P=0.001), number of sexual partners in the prior 3 months (APR 1.15 per partner; 95%CI:1.02-1.31; P=0.03), and number of sex acts in the prior 3 months (APR 1.01 per act, 95%CI:1.00-1.02; P=0.006). By contrast, dysuria and condom use were associated with decreased willingness to access PrEP (APR 0.38, 95%CI: 0.20-0.71; P=0.003) and (APR 0.78, 95%CI:0.67-0.92; P=0.002), respectively.

Conclusion: More than half of AGYW in our survey were willing to access PrEP from community-pharmacies. If scaled, pharmacy-based PrEP delivery models could significantly improve PrEP access for this population.

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Implementation of Novel Tools to Improve Partners Identification Through Index Case Testing Strategy in Nampula, Mozambique

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Background: HIV case identification is still the main challenge for HIV epidemic control in Mozambique, with 71.6% of people living with HIV (PLHIV) knowing their HIV status. Targeted testing interventions are essential to address this gap. Index case testing is a high yield testing strategy and strengthening contact elicitation and testing is essential to improve case identification. ICAP, in coordination with the Provincial Health Directorate, developed and implemented a contact elicitation job aid and a longitudinal tool to improve identification of contacts, especially multiple sexual partnerships.

Material and methods: In August 2021, ICAP developed and implemented new index case testing tools across 59 health facilities (HFs). The contact elicitation job aid depicted multiple types of sexual partners, using local terminology, to help providers identify multiple sexual contacts, including non-regular partners. The longitudinal tool supports systematic screening of index clients at all visits, identifying all contacts and their preferred testing location (i.e. facility or community level), and tracking testing coverage longitudinally. Both tools were allocated at all testing and clinical consultation points at the supported HF. All clients newly identified as living with HIV or attending HIV treatment follow-up visits were screened, and contacts were updated in the longitudinal tool, including preferred location for testing. ICAP HF staff and provincial-level staff reviewed testing coverage monthly.

Results: Data from October 2020-September 2021 (pre-implementation) and October 2021-September 2022 (post-implementation) demonstrate an increase in the number of sexual contacts elicited through index case testing strategy by 28% (from 52,478 to 67,063), number tested increased by 12% (from 52,478 to 58,683), number testing positive by 15% (from 10,564 to 12,185), while yield of HIV-positive tests remained stable (19.8% and 20.8% in pre- and post-implementation periods, respectively).

Conclusion: Implementation of these tools resulted in an increase in contacts elicited and tested, improving case identification, especially among sexual partners. The design of the job aid supported clinicians to elicit a higher number of contacts, specifically sexual partners, from index clients. ICAP will continue to monitor and support HFs in the implementation of measures developed to increase the number of contacts reached for HIV testing using the index case strategy.

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Experiences With Pre-exposure Prophylaxis (PrEP) Service Delivery and Oral PrEP Use Among Adolescent Girls and Young Women (AGYW) in South Africa

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Background: Oral pre-exposure prophylaxis (PrEP) has become the standard for HIV prevention globally and is recommended as part of a combination HIV prevention package for adolescent girls and young women (AGYW) at risk. In South Africa, oral PrEP was included in national guidelines for AGYW in 2017. Understanding AGYW's experiences of accessing and using oral PrEP is necessary to evaluate and improve PrEP service delivery approaches. The objective of this descriptive study was to explore AGYW's experiences with PrEP service delivery and use in real world settings in South Africa.

Material and Methods: We conducted 44 in-depth interviews with female oral PrEP users (15-24 years) enrolled in Project PrEP – an implementation science study. The interviews explored participants' knowledge and understanding of oral PrEP, experiences with accessing health services, and experiences of PrEP use. All the interviews were audio recorded and transcribed for analysis. Data analysis followed thematic analysis procedures. The findings were interpreted using the socio-ecological model approach and reported in accordance with the COREQ checklist.

Results: Participants attributed knowledge and awareness of oral PrEP to provision of counselling and educational resources through Project PrEP. The majority reported positive experiences and overall satisfaction with accessing health services (i.e., youth-friendly clinic spaces, friendly and non-judgmental staff, privacy during consultations). Distance from the clinic, long queues, negative provider attitudes and occasional stock-outs were

noted as key health service barriers to accessing PrEP. Participants described individual motivating factors (e.g., creating daily pill-taking routines, reminders and the goal to remain HIV negative) and barriers to continued oral PrEP use (e.g., pill fatigue, forgetfulness, frequent clinic visits, side-effects). Positive relationships with partners and family facilitated disclosure of PrEP use while stigma and gender disparities were identified as community barriers to accessing PrEP services.

Conclusion: Our study highlights AGYW's experiences with oral PrEP access and use in a real-world setting. Facilitators and barriers identified in this study can be leveraged to strengthen efforts to support young women and ensure effective PrEP use. The findings will also contribute to the development of appropriate PrEP service delivery strategies for existing and new PrEP products in South Africa.

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PrEP Scheduling: Daily and On-Demand PrEP Preference Among MSM in Southeast Nigeria: A Cross-Sectional Study

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Background: Since the advent of Pre-Exposure Prophylaxis (PrEP), the risk for HIV acquisition has been significantly reduced especially among men who have sex with men. However, pill burden and forgetfulness have impacted adherence to PrEP medication. This study aims to assess the preference of dosing and the factors influencing preference among MSM in south-south Nigeria.

Material and Methods: We conducted a cross-sectional study from December 2021 to December 2022 among MSM at substantial risk for HIV across 10 facilities in southeast Nigeria. Participants were offered information on daily and on-demand PrEP, and data on knowledge and preference was collected using a self-administered questionnaire. Following the national algorithm, HIV tests and

screening for other STIs were done. Data from this study were analyzed using SPSS.

Results: A total of 1,546 MSM were sampled, with a median age of 20 years (IQR 16 - 26) during the period. Of these, 98% were aware of PrEP and daily dosing, however, PrEP prevalence stood at 57% among this group. 51% of prep-use respondents preferred on-demand PrEP, citing pill burden as a determining factor, while overall willingness to use on-demand PrEP among non-users was 87%. Respondents with a preference for daily dosing had a significantly higher number of casual partners and condomless anal intercourse, while the use of on-demand PrEP was associated with the ability to predict sexual encounters and HIV risk. Overall, STI prevalence was 12%.

Conclusion: PrEP use is vital in preventing the spread of HIV. Our study demonstrated the preferred choice of PrEP dosing of an at-risk population and the factors that determine their choice of dosing. Findings from this should significantly influence information, education, and communication of prevention options and the provision of flexible dosing for this population if epidemic control is to be achieved by 2030.

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No One Size Fits All!! Is Long Acting PrEP the Way to Go? Evaluating Preferences Among Kenyan Men Who Have Sex With Men and Transgender Women

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Background: Despite Kenya's integrated ART/PrEP supply chain and the implementation of the largest-scale PrEP programme in Africa, there are still significant barriers to uptake and especially to adherence for GBMSM. Low adherence is supported by the findings of several studies where only a few participants were found to have protective Tenofovir-diphosphate (TFV-DP) levels in their plasma at follow-up visits post-

implementation. HIV prevention method preferences were evaluated among Kenyan men who have sex with men (MSM) and transgender women (TW) via a multisite study.

Material and Methods: Possible PrEP formulations (daily pill, once a month pill, quarterly injection and annual implant) were presented in information sessions detailing the attributes, duration of protection, route of administration and probable visibility. Three focused group discussions (FGD); TW, MSM and healthcare providers; with 8-12 participants in each (total 9 FGD) were conducted at each site (up to 102 participants total).

Results: The daily oral pill was the least preferred. Those who chose the daily pill said that one pill every day was easy to remember, and the daily pill provides the ability to start and stop at will. For those who chose long acting PrEP, duration of protection was the common theme across the reasons given. A longer period of protection meant a longer period during which the participant did not have to be concerned about being exposed to HIV. Reasons mentioned for choosing the monthly pill included: no need to carry around noisy pills, no need to store pills, ease of transition from daily to a monthly regimen, fear of pain from an injection or implant, ability to stop after just one month. The injection was valued for its duration of protection, but also because it was quick and easy, and less likely to be detected by others. TW preferred the yearly implant over the quarterly injection.

Conclusion: While a variety of long-acting products should be developed and made accessible to appeal to a diversity of preferences, end-user input on early-stage design and testing of new HIV prevention approaches is critical to achieve uptake and adherence necessary for protecting vulnerable MSM and TW.

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An Evaluation of Oral PrEP Implementation in Zimbabwe, 2018-2022

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Background: Zimbabwe introduced oral Pre-Exposure Prophylaxis (PrEP) in 2018, targeting key populations. The World Health Organization recommended the provision of oral PrEP to all at-risk persons, early policies in Zimbabwe focused predominately on high-risk key population groups. Given the stigma and discrimination associated with these sub-populations, uptake was low. With support from implementing and funding partners, the Ministry of Health and Child Care (MoHCC) scaled up oral PrEP implementation to the general population and invested in demand generation, health care worker (HCW) capacity building, and improved service delivery. An evaluation was conducted to assess program performance from 2018-2021 and identify lessons to inform the roll-out of other HIV prevention interventions.

Material and Methods: CHAI supported the MoHCC to strengthen implementation through data-driven district support and supervision, integrated HIV prevention trainings including district pharmacists and HIV testing personnel, and revising the training curriculum for standardization across implementers. Revisions to the training manual included forward-thinking sensitization of HCWs on near-to-market PrEP interventions and tailored messaging for key and vulnerable populations. Additional support included the revision of monitoring indicators and population-specific data collection to improve program tracking, a longitudinal analysis of performance to inform the revision of targets, and alignment of quantification to forecast program growth, and the expansion of distribution channels to improve facility-based distribution.

Results: In 2018, Zimbabwe had estimated total oral PrEP initiations of 8,973 through the facility-based model. Additionally, an estimated 120,700 cumulative initiations were conducted, with female sex workers, adolescent girls and young women, and men who have sex with men contributing 85% of the initiations by 2022. Entry points were expanded from the Opportunistic Infection department in 2018 to include the Out Patient Department and Antenatal Care. Oral PrEP service coverage increased from 8 health facilities in 2018 to 1,069 by 2022.

Conclusion: Lessons learnt from oral PrEP implementation and scale-up can contribute to the introduction of new HIV prevention products through identifying at-risk individuals; behavior and client-centered demand generation and service delivery; and a phased approach to geographical coverage in resource constrained settings.

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Adolescent and Young Men and Women's Divergent Preferences for Integrated PrEP Delivery Services: A Discrete Choice Experiment in Cape Town, South Africa

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Background: Integrated sexual and reproductive health services have been promoted in the scale-up of PrEP delivery to adolescent and young people (AYP) in sub-Saharan Africa. Service delivery modes are drivers of choice for AYP seeking PrEP and implementers could minimize barriers to services and maximize effective PrEP use by understanding these modes and preferences.

Material and Methods: A discrete choice experiment (DCE) was conducted in Cape Town, South Africa, in February 2021 with male and female AYP aged 15 to 29 years. Participants were asked to choose between two hypothetical PrEP delivery models composed of six attributes: PrEP delivery location, adherence support, PrEP modality, contraception type (females only), partner STI testing and notification, and waiting time. Fixed effects logit models were run to estimate the preferences and trade-offs among PrEP delivery alternatives, using a 95% level of significance.

Results: Overall 343 AYP (196 female; 57%; median age=20yrs) were enrolled. While most participants (86%) were PrEP-naïve, 67% indicated that they were ready to start using PrEP. Overall, no significant preferences were found regarding type of PrEP, PrEP pick-up location, or waiting times. AYP indicated a preference for adherence support delivered via SMS (OR=1.33; 95%CI: 1.14–1.56), a health app (OR=1.25; 95%CI=1.08–1.46) or peer group support (OR=1.34; 95%CI=1.17–1.55) when compared to in-person counseling. While male AYP overall did not have many attributes at a significant level driving preference, female AYP indicated some preference for contraception delivered in combination with PrEP (OR=1.44; 95%CI: 1.18-1.76) and were significantly less likely to choose PrEP delivery models that included partner STI testing if the results were delivered in-person (OR=0.83; 95%CI: 0.69-1.00) or by non-anonymised courier (OR=0.49; 95%CI: 0.35–0.67) compared to models that included no partner STI notification.

Conclusion: Best-aligned PrEP delivery for AYP include digital or peer group adherence support, and for female AYP, models that provide multiple product therapies (contraception and PrEP). Female AYP preferences highlighted their concerns with service models that included non-anonymised STI partner testing notifications. To ensure that delivery models influence positive demand for PrEP, females more than their male peers may favour tailored, gender-responsive service delivery options.

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“Why Do You Need PrEP...”: A Qualitative Investigation of HIV Pre-exposure Prophylaxis Acceptability Among Gay, Bisexual and Men Who Have Sex With Men In Ghana

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Background: Ghanaian gay, bisexual, and other men who have sex with men (GBMSM) face significant HIV disparities. 18.1% of Ghanaian GBMSM live with HIV, compared to 1.6% of the general adult population. Pre-exposure prophylaxis (PrEP) is an effective biomedical approach to HIV prevention. However, few studies have evaluated the acceptability and uptake of PrEP among GBMSM in Ghana.

Material and Methods: This qualitative study was part of formative preparation for a randomized controlled trial (RCT) to evaluate the feasibility and acceptability, as well as estimate the effect size of, a multi-component, multi-level intersectional stigma-reduction intervention among GBMSM in Ghana. The aim of this secondary data analysis of the qualitative data was to explore the acceptability and factors that may impact PrEP use. We recruited GBMSM using convenience and snowball sampling in partnership with local community organizations. Qualitative data was collected from GBMSM in Accra and Kumasi, from October – December 2020. We conducted ten in-depth interviews (IDIs) and eight focus group discussions (FGDs) with six to ten participants each. FGDs and IDIs were recorded, transcribed, and analyzed using descriptive thematic analysis.

Results: Perspectives shared by participants clustered into four main categories related to PrEP acceptability and uptake: 1) awareness and

knowledge of PrEP, (2) acceptability of PrEP, (3) potential barriers to PrEP use, and (4) need for comprehensive PrEP information and education. Findings revealed an increased awareness of PrEP, though knowledge about the medication was quite low. There was low acceptability, with the primary reason being the limited benefit of PrEP in preventing only HIV and not other STIs. Stigma, potential for risk compensation, and concerns about PrEP dosing and side effects were highlighted as barriers to PrEP uptake. Comprehensive information about PrEP was highlighted as a critical need among GBMSM.

Conclusion: Noting the disconnect between PrEP knowledge and acceptability among GBMSM, HIV prevention programs could bridge this gap by responding to identified access barriers and incorporating community-derived strategies.

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Experience With the Introduction of Shangring Circumcision in North Eastern Uganda Voluntary Medical Male Circumcision Program

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Background: Male circumcision (MC) reduces the HIV transmission rate up to 60% by averting 1 new HIV infection per 19 MC done. However, uptake in Uganda is still low at 57.5% partly due to due time consumption and the high skill level required for conventional MC. To mitigate this, in 2019 a simplified, effective, safer, and easy-to-use approach of the No-flip ShangRing procedure was introduced in Uganda. To improve the uptake of MC, The Aids Support Organization (TASO) with support from the Centers for Disease control & prevention (CDC) rolled out shangRing MC in two facilities in North Eastern Uganda.

Material and Methods: A need assessment done at the two facilities showed lack of technical skills and

knowledge on using the no Flip ShangRing technique among health workers. TASO trained 30 Facility-certified Voluntary medical male circumcisions (VMMC) staff including VMMC circumcisers, assistants, and counselors. Conducted CMEs for VMMC mobilizers. Demand creation was done through Community dialogues and peer-to-peer health talks targeting volunteers of 14 years and above and their caretakers. volunteers that consented were scheduled for circumcision and transported to and from the facilities. Preoperative Health education and individual counseling were provided on both conventional and shangRing and volunteers made an informed choice. All volunteers were brought to the facility for follow-up after 7 days.

Results: From April 2021 to September 2022, A total of 2,795 ShangRing circumcisions were conducted, of these 91% (2555/2,795) were 15 and above year-old males and 9% (240/2,795) were 14-year-old males. Achievement of 117% (2,795/2375) was attained against the set shangRing MC target with a contribution of 4.6% (2,795/61,009) on the total circumcisions done in the region. An overall low moderate (MAEs) adverse event (AE) rate of 0.07% (2/2795) and no severe (SAEs) adverse event (AE) rate were reported. The low moderate AEs (2) were penile edema that was managed conservatively.

Conclusion: Shang Ring technique is an effective alternative to conventional surgical MC. It is safe, acceptable among volunteers, and an easy-to-use by health workers. Therefore, we recommend the scale-up of this device approach to other areas with limited MC service uptake and high HIV disease burden.

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The Prevention Index Testing Model: Exploring Sexual Networks of HIV-Negative Individuals at Substantial Risk of HIV Acquisition to Reach Undiagnosed PLHIV With

Treatment and Expand PrEP Uptake in Zambia

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Background: To end AIDS as a public threat by 2030, more innovative approaches are needed to identify undiagnosed people living with HIV (PLHIV) and expand access to HIV combination prevention for individuals at substantial risk of HIV acquisition. This study assessed the feasibility of using HIV-negative individuals at substantial risk of HIV acquisition as 'index-clients' to explore their sexual networks for HIV case-finding and scale up of PrEP uptake among HIV-negative, at-risk individuals in USAID DISCOVER-Health supported facilities in Zambia.

Material and Methods: The intervention was piloted in 32 project-supported sites in 2021 and 2022. HIV-negative PrEP clients were offered prevention index case testing to explore their sexual networks. All elicited individuals at substantial HIV acquisition risk were offered HIV index testing. Individuals testing positive for HIV were immediately offered antiretroviral therapy (ART); individuals testing negative were offered combination prevention services, including PrEP. Client-level data were recorded in registers from which key variables were derived for analysis using SPSS.

Results: A total of 7,831 HIV-negative individuals, including 5,687 males aged 20-40 years and 2,144 females aged 18-35 years were offered reverse index testing within the study period. From these, 5,653 sexual network contacts were elicited. Females constituted the smallest proportion of elicited contacts at 1,357 (24%). Females were two times more likely to accept HIV testing than males (OR=2.47; 95% CI 2.18-2.81, p<0.001) and were twice as likely to test positive for HIV than males (OR=2.08; 95% CI 1.46-2.96). Additionally, 128 (3.7%) HIV-positive contacts were identified, comprising 75 (59%) males and 53 (41%) females, all of whom were linked to ART. Over 3,300 HIV-negative sexual contacts (93%) were linked to PrEP. Females were more likely to initiate PrEP than males (89% vs. 83%) (OR=1.62; 95% CI 1.28-2.05).

Conclusion: Prevention index testing may increase the identification of HIV-negative individuals at substantial risk of HIV acquisition with spillover benefits of finding undiagnosed PLHIV for scaling up linkage to combination prevention services and ART, respectively. Further implementation and research is needed to assess the impact of this approach in high HIV risk populations.

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"I was Surprised and at The Same Time Amazed": High Demand for and Effective Use of Oral Pre-exposure Prophylaxis (PrEP) Among Heterosexual Men in South Africa

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Background: While most PrEP programs focus on MSM, high-risk heterosexual men have also demonstrated demand for PrEP at sites targeting other populations. However, little is currently known about this group. We piloted a project in South Africa to assess their demographic and behavioural characteristics, interest in PrEP, and experience of PrEP use.

Material and Methods: Data were collected from September 2021-July 2022, as part of a demonstration project in collaboration with 10 participating private practices based in Johannesburg, South Africa. Health promoters engaged men in public spaces to discuss PrEP and link them to no-cost services if interested. Routine intake and monitoring data were collected, supplemented by qualitative in-depth interviews with current and discontinued PrEP users.

Results: Our target sample of 564 men was recruited in less than three months. The average age of men was 34 years, almost half (47%) were employed. Only 14% reported consistent condom use. 72% reported more than one sexual partner in the past three months, with 45% reporting three

partners or more. Alcohol use was reported by 64% and drug use by 11%. We found patterns of effective use among men. 58% (n=325) men returned for one PrEP refill, 40% (n=224) men returned for a second refill and 16% (91) men returned for a third refill. Overall, 21% of men returned for a PrEP refill more than 30 days after their scheduled date, indicating that they were not using PrEP daily. Some men expressed specific interest in event-driven PrEP.

Conclusion: We found several indications that PrEP could be well-suited to a substantial segment of high-risk heterosexual men. Roughly three-quarters of participants reported multiple sexual partners and inconsistent or no condom use, against a background of high HIV prevalence. PrEP uptake and continuation rates were high, even with minimal follow-up support. Event-driven PrEP and other flexible use options could result in even greater uptake and continuation.

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Young Women's Perspectives for the Delivery of Long-Acting HIV Pre-exposure Prophylaxis in South Africa: Learning From Barriers to Uptake From Current Contraceptive Offerings

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Background: The prevalence of HIV among adolescent girls and young women [AGYW] (15-24 years) in South Africa is high (12%). The AGYW also have the highest HIV incidence in any subpopulation (1.5%). Pre-Exposure Prophylaxis (PrEP) is being rolled out as part of HIV prevention efforts among this population. New long-acting PrEP formulations are near to market. The high contraceptive prevalence rate in the country (60%), particularly for injectables (25%), provides opportunities to learn lessons to guide long-acting

PrEP service delivery. Therefore, the paper aims to identify barriers to accessing and sustaining current long-acting contraceptive offerings to inform the delivery of new long-acting PrEP formulations.

Material and Methods: This formative qualitative study was conducted in 2022 in the Tshwane District in the Gauteng province of South Africa. Two sites were purposively selected, a university and a Technical and Vocational Training (TVET) college. Participants were female students 18-24 years seeking sexual and reproductive health services through campus or mobile clinics. Trained research assistants conducted 22 in-depth interviews and five focus group discussions. Data were thematically analysed using NVivo software (QSR International).

Results: We found barriers to young women's use of contraceptive services at individual and health system levels. Individual factors included side effects and fear of judgement from healthcare providers. Health systems-related issues included stock-outs, poor quality of services such as lack of privacy, limited opening hours that did not fit with class attendance, inadequate counselling on side effects, long waiting times and lack of centralised information systems. Negative health provider attitudes were a key barrier.

Conclusion: Quality of services is essential for PrEP uptake, particularly ensuring privacy and availability of services after hours and on weekends. Testing approaches to shorten waiting times is vital. Also, developing centralised patient data systems will ensure that students transition smoothly between facilities during the term and semester breaks. Providers should spend time providing information and counselling on side effects to ensure the continued use of prevention methods. Training service providers to deliver youth-friendly services will be important in future long-acting PrEP rollout.

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Strategies for Using the Private Sector to Deliver Multipurpose Prevention Technologies: New Opportunities in a Changing Landscape

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Background: The Dual Prevention Pill (DPP) combines oral pre-exposure prophylaxis (PrEP) with oral contraception (OC) to prevent HIV and pregnancy. We undertook a scoping exercise in Kenya, South Africa, and Zimbabwe to explore opportunities for private sector DPP delivery.

Material and Methods: A mixed methods approach, comprising a desk review of available literature and 106 key informant interviews, was employed to explore a variety of private sector channels. Channels were analyzed based on the strength of policies, level of coordination with the public sector, data systems, supply chain, need for subsidy, scalability, sustainability and geographic coverage.

Results: Pharmacies exhibit the highest potential due to their wide geographic reach, ongoing pharmacy-administered PrEP pilots in Kenya and South Africa and ability to offer OC without a prescription in Zimbabwe. Private networked clinics providing Family Planning (FP) and HIV services are additional opportunities. In Kenya and South Africa, newer, technology-based channels such as e-pharmacies, telehealth and telemedicine are rapidly becoming key entry points for many PrEP users, suggesting potential for DPP delivery. Findings are limited by a lack of standardized reporting on newer channels and gaps in information on financing options and willingness to pay.

Conclusion: The private sector in Kenya, South Africa and Zimbabwe offers promising opportunities for DPP introduction. Delivering a range of access options that minimize stigma by supplying a wide variety of services in a single location, or provide discretion by limiting face-to-face contact, could increase uptake. The private sector provides a significant proportion of FP services in countries with high HIV burden. Preparing these channels to offer PrEP will facilitate the growth of integrated service delivery and eventual DPP rollout. These findings will be used to create a private sector introduction strategy for the DPP as a framework for future introduction of other multipurpose prevention technologies.

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Understanding the Process of Adolescent Assent for Voluntary Medical Male Circumcision in Zimbabwe: Findings From a Cross-Sectional Study

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Background: Voluntary medical male circumcision (VMMC) is a key HIV prevention option within combination prevention for adolescents >15 years in settings with generalized HIV epidemics. In Zimbabwe, policy currently allows the use of VMMC devices in adolescents >15 years, and there are considerations to lower the threshold to the age of 13 years. There is a need to understand young adolescents' ability to provide informed assent, current practices in assent/consent, and parents' requirements for assent/consent to inform policy recommendations for use of VMMC devices and the VMMC programme.

Material and Methods: Cross-sectional surveys were conducted among three groups in September 2022: uncircumcised adolescents/young men (AYM) aged 13-16 (n=881), circumcised AYM aged 13-20 (n=247), and parents (n=443) of uncircumcised adolescents aged 13-16. Surveys asked about VMMC knowledge, experiences with mobilisers, circumcised AYM's assent/consent experiences, and parents' preferences for assent/consent processes.

Results: Detailed knowledge of VMMC was similar among 13-14 and 15-16 uncircumcised AYM and parents. However, 64% (150/247) of older circumcised AYM retrospectively felt they would not have been mature enough to make the decision about VMMC at age 13-14. 57% (142/247) of circumcised AYM had a one-to-one discussion with their provider before VMMC; 32% (80/247) said they were not fully informed prior to the procedure, and 54% (134/247) wanted more information about procedure-related pain. 56% (42/75) of uncircumcised AYM whose parents had not provided consent in-person reported that actual consent giving had not been verified with parents.

Conclusion: There are gaps in the current assent/consent process for VMMC. All providers should be trained to provide balanced information on risks and benefits of the procedure, including potential for pain. One-on-one discussions between providers and adolescents prior to the procedure, age-appropriate counselling, and tools for providers to ascertain the adolescent's understanding and ability to provide assent are essential processes, especially for younger adolescents who may be less mature than adolescents 15+ that providers have more experience conducting VMMC counselling with. There is also a need to standardise confirmation of parental consent for minors when their parents do not accompany their child to the clinic (e.g., a follow-up phone call).

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Preferences for Multipurpose Prevention Technologies Attributes: A Latent Class Analysis Approach

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Background: While several studies have investigated uptake, efficacy and effectiveness of HIV prevention products, studies to provide a more comprehensive understanding of the reasons for prevention product choice are limited. The current study aimed to identify preference patterns of end-users for multi-purpose prevention technology products and the characteristics influencing them.

Material and Methods: We used survey data from men and women aged 18 to 40 years, recruited from facility and community-based sites in three provinces in South Africa (Gauteng, Eastern Cape, and Kwa-Zulu Natal). The parent study conducted formative research to estimate the potential uptake of an MPT implant and evaluate the potential effect of its introduction on PrEP uptake among priority and key populations. We used latent class analysis to distinguish 15 product characteristics considered when choosing a prevention product. The LCA was performed in SAS PROC LCA add-on to identify clinically meaningful and distinct subgroups based on patterns in observed variables. The optimal number of latent classes was determined using the adjusted Bayesian Information Criterion and plausibility.

Results: Of 845 participants, most were female (83%). The median age was 26 years (IQR: 22 to 31). The LCA procedure identified 4 optimal classes, namely: "Side effects" (N=180, 19%), "Long term protection" (N=113, 12%), "Dual protection" (N=156, 20%), and "Other reasons" (N=396, 49%). Class membership was associated with sex ($p<0.001$). Females were more likely to consider side effects and dual protection while males considered long term protection. In addition, older age ($p<0.001$), history of giving birth ($p<0.001$),

relationship status ($p=0.039$), contraceptive use ($p=0.013$) and perceived risk of pregnancy ($p=0.002$) were also associated with class membership. Participants aged 24 - 40 were more likely to consider side effects when choosing a prevention product; those with early sexual debut were more likely to consider long-term protection. Participants who were married or in a committed relationship, had given birth, and use any contraception were likely to weight 'other reasons' of prevention product to choose a product.

Conclusion: Understanding which product characteristics are most important to different sub-populations of end-users may help to develop preferred products, targeted to meet the needs of those most in need.

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Comparing Prep Initiation Rates by Service Delivery Models Among Adolescent Boys and Young Men in Kwazulu-Natal, South Africa: Preliminary Findings From a Population-Based Prospective Study

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Background: Adolescent boys and young men (ABYM) continue to experience disproportionately high rates of new HIV acquisition in South Africa, despite efforts to address their HIV prevention and care needs. However, there is a dearth of research on PrEP focusing on ABYM. To address this gap, we compared PrEP initiation rates by service delivery points (SDPs) among ABYM in KwaZulu-Natal, South Africa.

Material and Methods: We conducted a population-based prospective study in 22 SDPs from July 2021 to June 2022 in uMgungundlovu – a district with 24% HIV prevalence among males aged 15-49 years in KwaZulu-Natal province. Sexually active ABYM aged 15 – 35 years who tested HIV negative were recruited at purposively selected PrEP SDPs (i.e., healthcare facilities, secondary schools and Technical Vocational Education and Training (TVET) colleges, and community-based youth zones). We defined PrEP initiation according to national guidelines. We described baseline characteristics using summary statistics and reported PrEP initiation proportions overall and by SDPs. PrEP initiation for each participant was extracted against local medical records.

Results: The study included 1 078 ABYM were recruited from 22 SDPs, with more than half aged 15-24 years (n=590, 55%) and 45% (n=488) aged 25-35 years. Among 1 078 participants who were eligible for PrEP, 13% (n=141) were started on PrEP. Among the participants who were started on PrEP, more than half (52%, n=74) were from high schools and TVET colleges, compared with community-based youth zones (26%, n=37) and healthcare facilities (21%, n=30).

Conclusion: PrEP initiation rates were low among ABYM in KwaZulu-Natal, South Africa. Providing PrEP in high schools and TVET colleges, and community-based SDPs resulted in improved PrEP initiation rates when compared with traditional facility-based model. High schools and TVET colleges, and community-based SDPs could serve as important additional models to the traditional facility-based model for improving PrEP accessibility and initiation among ABYM.

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Adverse Drug Reactions and Its Impact on Pre-exposure Prophylaxis (PrEP) Uptake Among General Population Groups Using PrEP in Rivers State

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Background: The human immunodeficiency virus (HIV) is still a significant public health issue. The various HIV management options have been crucial in reducing the incidence of HIV, but reaching out to people who are significantly at risk due to lifestyle choices require newer, more focused preventive approaches. Pre-exposure prophylaxis (PrEP), which entails taking an antiretroviral (ARV) medication daily in addition to other preventative behavioural measures to avoid HIV infection, is an effective strategy for reducing the spread of the virus. When high adherence is kept among high-risk population, PrEP efficacy could reach as high as 99%. However, adverse drug reactions (ADRs) have been reported from time to time hence posing adherence difficulties. With the increasing use of antiretroviral drugs (ARVs) in HIV uninfected persons exposed to HIV infection there is an emerging need to understand how these ADRs affect adherence to uptake of PrEP.

Material and Methods: A mixed methods study was conducted between July and September 2022 among general population groups using PrEP in Rivers state. A multi-stage cluster sampling method was used to select 82 participants from five comprehensive ART sites that provides PrEP services. The survey was conducted using an interviewer-administered questionnaire. In addition, four focus group discussions (FGD) were conducted to generate qualitative data. Quantitative data was analysed using SPSS version 25 while content analysis was done on the qualitative data.

Results: Of the 82 PrEP users that took part in this study, 59.8% (n=49) reported at least one adverse effect from taking the medication. The most frequent first ADRs were gastrointestinal disorders (22%), followed by general symptoms (9%), hypersensitivity reactions (1.6%) and CNS symptoms (1.3%). Of this group, there was a higher incidence of poor adherence (27.3%) than in the participants that did not report any serious adverse effects. 22.7% of the participants who reported

adverse reactions also indicated that the ADRs were mild and subsided after about two weeks.

Conclusion: The majority of the adverse reactions related to PrEP occurred in the first two weeks and were frequently associated with patient poor adherence to taking the medication.

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Tendência no Uso e Acesso aos Serviços de Saúde para Prevenção HIV/SIDA em Mulheres Trabalhadoras de Sexo em Três Cidades de Moçambique (Maputo, Beira e Nampula), 2011 e 2019

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Antecedentes: Estudos mostram que as mulheres trabalhadoras de sexo (MTS) tem acesso inadequado aos serviços de prevenção e rastreio do HIV, que pode ser influenciado pela estigma e discriminação, o que pode aumentar o seu risco de contrair o HIV. Este estudo avaliou o uso e acesso dos serviços de saúde para prevenção do HIV/SIDA em MTS em Moçambique, 2011 e 2019.

Métodos: A partir de dois inquéritos transversais biológicos e comportamentais realizados entre MTS em Moçambique em 2011 e 2019, utilizando um questionário contendo variáveis socio-comportamentais e recolha de amostra de sangue para testagem do HIV, baseados em amostragem por cadeia de referência (RDS). Nosso estudo definiu variáveis de acesso aos serviços de prevenção o contacto com educador de pares para HIV/SIDA e receber gratuitamente preservativos, lubrificantes e panfletos e variáveis de uso dos serviços de prevenção a procura de profissional de saúde por causa de problemas de saúde, uso

consistente do preservativo e realização do teste de HIV. A regressão logística foi aplicada para estimar a tendência na variação e chances no uso e acesso dos serviços de prevenção do HIV/SIDA entre 2011 e 2019.

Resultados: Entre 2011 e 2019 verificou alteração no uso e acesso dos serviços de saúde para prevenção do HIV/SIDA. O contacto com algum educador de pares ou activista de HIV/SIDA alterou de (21.4% vs 42.4%), ORa=5.9, IC95% (4.4-8.0) quando comparado com 2011. A recepção gratuita de preservativos, lubrificantes e panfletos, baixou em (51.9% vs 45.8%), ORa=3.4, IC95%(1.6-6.0) em comparação com 2011. A procura de profissional de saúde por causa de problemas de saúde incrementou em (39.5% vs 49.6%), ORa=1.8, IC95% (1.3-2.5) comparado com 2011. Entretanto o consistente uso do preservativo reduziu em (74.1% vs 69.9%), ORa=1.5, IC95% (1.2-1.9) e a realização do teste de HIV aumentou (68.8% vs 83.1%), ORa=1.7, IC95%(1.4-2.9) comparativamente a 2011.

Conclusão: Os resultados mostram existir evidências indicando redução no uso dos serviços para prevenção do HIV/SIDA particularmente no uso consistente do preservativo, havendo necessidade de intervenções adequadas as necessidades que permitam uma visão não discriminatória na sensibilização para uso consistente do preservativo para prevenção do HIV/SIDA em MTS.

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Implementation of Differentiated Service Delivery (DSD) Models of HIV Treatment: Experience From Initial Scale-up in Liberia

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Background: In 2020, about 82% (15,927/22,000) of persons living with HIV (PLHIV) in Liberia were on routine 3-multimonth dispensing (MMD) of antiretroviral therapy (ART) in health facilities. Congestion at the clinics, missed clinic appointments, and poor viral suppression characterized the treatment program. The National AIDS Control Program (NACP), with support from the Meeting Targets and Maintaining Epidemic Control (EpiC) project in Liberia, introduced differentiated service delivery (DSD) models for HIV treatment services to address some of these concerns, especially within the context of the COVID-19 pandemic. We present lessons learned from initial scale up of DSD models in Liberia.

Material and Methods: Between March and September 2020, the NACP established the framework and a technical working group (TWG) for DSD. Meetings of critical stakeholders, including a network of PLHIVs, were held to discuss the DSD models and the criteria for each model. Standard operating procedures, job aids and guidelines were developed and validated for the respective models, and relevant staff and stakeholders were trained on their use. To promote enrollment on various DSD models, NACP and EpiC mentors provided periodic mentorship and feedback. The ICAP Coverage, Quality, and Impact Network (CQUIN) DSD maturity dashboard was adopted to facilitate the process and monitor scale up. Two time points, (June 2021 and June 2022) were used to measure proportion of PLHIVs on DSD models and the average viral suppression rates.

Results: The proportion of clients on the different models of DSDs increased rapidly between June 2021 and June 2022. For example, 6-MMD increased from 11% (2,050) of the treatment cohort in June 2021 to 32% (5,816) in June 2022. Appointment spacing and fast track increased from 2% to 18%. At the same time, the national average viral suppression rates among PLHIVs on treatment increased from 66% in June 2021 to 76% in June 2022. Clinic congestion improved and representatives of the network of PLHIVs hailed the impact of the intervention on treatment convenience.

Conclusion: Scale up of DSD models improved service delivery and patient outcomes in Liberia.

Provider and client sensitization must be continued to sustain increasing enrolment and viral suppression rates.

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Early Learnings from Implementation Research on Acceptability of the Shang Ring Device for Voluntary Medical Male Circumcision in Zimbabwe, 2022

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Background: In 2016 WHO advised a shift in the recommended age group for voluntary medical male circumcision (VMMC) to 15 years and above due to surgical safety concerns in younger males. Zimbabwe's Integrate project started recruitment in a large scale clinical observational study to evaluate the safety of the Shang Ring (SR) VMMC device among younger adolescents (13-16 years) to provide an alternative to surgical VMMC for these ages for scale up.

Material and Methods: Circumcisers in nine selected districts were trained and certified for Shang Ring proficiency over 3 months. Protocol and data collection training were conducted over six months while the program sensitized community gate keepers, trained community and school mobilizers on SR messaging. Safety data on adverse events was collected among all study participants. All participants received self-administered survey questionnaires to assess satisfaction post procedure at the end of the healing process.

Results: Residual demand for "the ring": After successful implementation of a PrePex "Ring" campaign between 2014 and 2016, qualitative feedback from stakeholders and male clients indicate a residual "Ring" demand for Shang Ring.

SR uptake exceeded 50% among clients 15 years and older across the nine pilot districts after introduction in September 2022. Client Satisfaction: Of the 1,600 responses, 1,560 (98%) reported being satisfied or very satisfied, while 1,537 (96%) indicated they would recommend Shang Ring to someone. Client Eligibility: Four of the 9 implementing districts collected data on reasons for device ineligibility among 870 clients, with 828 (95%) being eligible for the device procedure. Of the 42 who were ineligible, 16 had anatomical disorders (hypospadias and phimosis), 12 were outside the eligible age group, and 4 required device sizes that were not available. Reduced time to Provider Proficiency: Observation of device training participants showed that providers who received no prior VMMC training needed fewer clients (<5) and less time to proficiency compared to surgical proficiency (10-15 clients).

Conclusion: The combination of ease of device training, client selection, and very high client satisfaction confirms the known benefits of the device in VMMC, which may outweigh the logistical complexities of the Shang Ring device.

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Consistency of Multi-Month Antiretroviral Therapy Dispensing and Association With Viral Load Coverage and Suppression Among Pediatric Clients in Mozambique

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Background: Multi-month dispensing (MMD) of antiretroviral therapy (ART) has increased dramatically in recent years among children. However, little is known about consistency of MMD receipt over time and its association with virological outcomes.

Material and Methods: We conducted a secondary analysis of individual-level data from routine HIV services at 16 high-volume facilities in Gaza and Inhambane provinces. Children <15 years living with HIV with clinical visit September 2019-August 2020 were enrolled. Data were abstracted on clinical history, visits, ART pickups, and viral load (VL) monitoring from enrollment through August 2021. We analyzed the proportion of children ever receiving 3-month MMD, proportion receiving consistent MMD (3 month supply at all pickups the following year), and VL coverage and suppression (<1,000 copies/mL) after transition to MMD.

Results: In total, 4,383 children were included in analysis, 82% of whom ever received MMD during the study period. Older children were significantly more likely to have received MMD. Compared to ages 0-4 years, children 5-9 years had 3.8 times the odds of receiving MMD (95% CI: 3.2-4.6), and those ages 10-14 years had 7.6 times the odds of MMD (95% CI: 6.1-9.6). Among children ever receiving MMD, 40% received consistent MMD, primarily children ages 10-14 (48%). Of children with 12 months of follow-up on MMD (N=1851), 40% had a VL within that year. In a model adjusted for age and sex, consistent MMD was significantly associated with lower odds of having a VL (0.8, 95% CI: 0.6-0.9). Of children with VL, 185 (21%) had an unsuppressed VL result ≥6 months after first MMD; this was most common among children ages 0-4 (37%). Children with an unsuppressed VL were significantly less likely to receive consistent MMD (17% versus 33% of those virally suppressed).

Conclusion: While most children received MMD, fewer than half received MMD consistently. More information is needed on drivers of dispensing practices, including service implementation gaps (such as stockouts), client/provider preferences, and clinical contraindications for MMD. Those who received consistent MMD were significantly less likely to have a VL; attention is needed to ensure children with fewer visits still receive timely VL monitoring.

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HIV Care Cascade After Hospital Discharge in Zambia: Individual and System Factors Influencing Hospitalizations and High Mortality Among People Living With HIV

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Background: Despite nearing HIV epidemic control, Zambia continues to experience high mortality among people living with HIV during and after hospitalization, with six-month post-hospital mortality as high as 50%. One major gap in the care cascade occurs during the transition from hospital to outpatient management. We conducted a qualitative study to understand factors influencing engagement in care following hospitalization in Zambia.

Material and Methods: At two tertiary hospitals in Lusaka, we conducted in-depth interviews with recently discharged people living with HIV (n=16), caregivers (n=9), and clinicians (n=2). Focus group discussions were held with doctors responsible for inpatient HIV care (n=8) and lay counsellors working in hospitals and community clinics (n=16). All interviews were audio-recorded, transcribed verbatim, managed with Atlas.ti9, and thematically analyzed.

Results: At hospital level, admitted patients stated they were not given adequate information about their medical conditions and what was expected of them after discharge. Once discharged, information

flow was very limited, particularly from the discharging hospital to community clinics; this further complicated HIV care and re-engagement. Local clinics were said to be underequipped for meeting patients' treatment needs; meanwhile, patients faced significant structural challenges in returning to the discharging hospital. These were often exacerbated by the patient's or caregiver's loss of employment and income due to hospitalization, pushing the family into poverty while still incurring costs for transportation, medication, and food. Pre-existing psychosocial barriers such as HIV stigma, self-stigma, and lack of social support made the post-discharge transition even more difficult. Finally, several other health challenges were identified that made post-discharge recovery difficult, and contributed to poor outcomes, including death. These were often co-morbidities with non-communicable diseases, which were poorly understood, and resource-intensive; or longstanding mental health challenges such as depression and alcohol abuse.

Conclusion: Inpatient settings provide an opportunity to identify and re-engage people living with HIV in care and improve HIV viral suppression, screen and treat comorbidities, and ultimately prevent mortality. However, at present, system and individual challenges after discharge exacerbate pre-existing interpersonal, health, environmental, and system factors. For HIV programs focusing on the last mile to epidemic control, holistic community-based interventions to reach these patients should be a key component.

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Viral Load Re-Suppression After High Viral Load: Experience From an HIV Clinic in Malawi

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Background: Gaps in high viral load (HVL) documentation has made it challenging to ensure

clients with HVL eventually resuppress following Intensive Adherence Counseling (IAC) intervention. To address this, Lighthouse Trust (LH) Tisungane clinic in Zomba developed a case management system to ensure that all clients with HVL are adequately assessed and their treatment optimized.

Material and Methods: We developed a HVL register where all HVL results and IAC information are documented. The HVL case management involves receptionists, retention assistants (RA) and clinicians. The RA documents VL results on sample log, stamping each high VL client file with “HVL” sticker and ensures complete documentation by the clinician. The clinician documents VL and CD4 results, and IAC counseling. The receptionist flags all clients with HVL whose files have HVL sticker when they enter the clinic. The RA also traces clients via phone or physical visit once HVL results are received. Six months post-HVL visit, a point of care (POC) VL result determines whether the client will be discharged from HVL care, restart HVL care or receive HIV drug resistance testing.

Results: Between January and December 2021, there were 218 adult clients with HVL (>1,000 copies) of which 154(70%) had a final outcome. Those without a final outcome had either died, transferred out, still on IAC or defaulted. At the 6-month post HVL visit, 135(88%) clients had resuppressed VL. There were 241 clients with low level viremia (>50-1000 copies) of which 217(90%) had a final outcome. Of those 176 (81%) had resuppressed VL. Among adolescents ages 10-19 years 78 clients had HVL and 95% had final outcome. At the 6-month post HVL visit, 82% clients had resuppressed VL. In small children aged 5 and below, 20 had high VL and nearly all (90%) had >10,000 copies. Their re-suppression rate was only 50%. Overall the resuppression rate was 80% among all clients.

Conclusion: The flow for managing high VL clients was successful in monitoring all clients with high VL. Having RAs responsible for complete documentation after every visit reduced the tracking burden on clinicians. Providing POC VL ensures timely case management of clients with high VL.

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High HIV Prevalence Among Sexual Partners With Risk of Intimate Partner Violence: Results From Index Testing Implementation in Zambia

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Background: As Zambia nears HIV epidemic control case-finding approaches, such as safe and ethical index testing (SEIT), can identify people living with HIV, but may pose risk of intimate partner violence (IPV). We report on IPV risk and HIV status among sexual partners elicited via SEIT.

Material and Methods: Community-based HIV services for are supported in the Eastern, Southern, and Western Provinces. People living with HIV were offered SEIT, with elicitation of sexual contacts and screening for IPV risk. Contacts who posed IPV risk to index clients were not followed up immediately; instead, index clients received support and counselling on IPV. We used program data to analyze SEIT clients, their sexual partners, and IPV risk from October 2021 to November 2022. Differences between categorical variables were assessed using chi2. Logistic regression was used to identify risk factors for IPV.

Results: Between October 2021 and November 2022, 3,216 index clients were offered SEIT; 3,193 (99%) accepted with 5,625 sexual partners elicited. Among these, 5,191 (92%) were screened for IPV and 646 (12%) indicated risk of IPV, including 34% of females and 66% of males. Among screened sexual partners, 3,036 (58%) were tested for HIV. Of those, 394 (13%) had IPV risk while 2,642 (87%) did not; HIV-positivity rates were 42% and 33% in these groups (p<0.001), respectively. HIV-positivity was significantly higher in female sexual partners with IPV risk than without (50% vs. 36%, p=0.001). In male sexual partners, HIV-positivity rate was 37%

among those with IPV risk versus 32% among those without ($p=0.073$). Sexual partners with IPV risks were more likely to test positive for HIV (overall OR=1.44 $p=0.001$, female OR=1.76 $p=0.001$, male OR=1.29 $p=0.074$).

Conclusion: In Zambia, we found IPV risk was significantly associated with HIV infection overall and among females when stratified by gender. Further interventions to mitigate HIV and IPV are needed.

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Peer PrEP Referral + HIV Self-Testing Delivery for PrEP Initiation Among Adolescent Girls and Young Women in Kenya: A Mixed-Methods Pilot Study

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Background: Uptake of daily oral HIV pre-exposure prophylaxis (PrEP), a highly effective intervention, remains low among adolescent girls and young women (AGYW). Most AGYW initiate PrEP through informal peer referral, which may be enhanced with formalized referral and peer-delivered HIV self-testing (HIVST) kits.

Material and Methods: We pilot tested a peer PrEP referral + HIVST delivery model among AGYW in Kiambu County, Kenya (CT.gov: NCT04982250). We recruited AGYW using PrEP (i.e., “peer providers”) from public healthcare clinics, trained them (one-day) on HIV prevention interventions, including HIVST and PrEP use, and ways to support peer linkage to clinic-based HIV services. Eligible peer

providers were ≥ 16 -24 years, HIV-negative (self-reported), and using PrEP for ≥ 3 months. Following training, peer providers were encouraged to refer 4 peers (i.e., “peer clients”) to PrEP and received HIVST kits ($n=8$, 2/peer) to support referral. We completed questionnaires with peer providers and clients one month following training; our primary outcome was PrEP initiation among peer clients. We also conducted focus group discussions (2 with providers, 3 with clients) and identified participants’ perceived intervention facilitators and barriers.

Results: Between March- July 2022, we trained 16 peer providers (median age: 23 years, IQR 21-24). The providers reported delivering the intervention to 55 peer clients, 30 (55%) of whom contacted study staff for follow-up. Among the peer clients (median age: 21 years, IQR 19-22), most (93%, 28/30) reported at least one behavior associated with HIV risk (e.g., sexual partner of unknown HIV status). At follow-up, most peer clients had initiated PrEP (provider report: 80%, 44/55; client report: 87%, 26/30). Additionally, most peer clients used at least one HIVST kit (provider report: 96%, 53/55; client report: 97%, 29/30). Perceived intervention barriers included supporting peer client HIVST without demonstration kits and PrEP stigma. Facilitators included close peer networks and peer clients’ motivation to remain HIV-negative.

Conclusion: A formalized peer PrEP referral + HIVST delivery model supported PrEP initiation among AGYW in Kenya, demonstrating the potential for peer-delivered HIV prevention service delivery models. Future models should address PrEP stigma reduction in the peer provider training and provide HIVST demonstration kits to support peer client HIV testing.

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Assessment of the Performance of the Plasma Separation Card (PSC) For HIV Viral Load Monitoring in South Africa

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Background: Viral load (VL) monitoring is a critical component of clinical management of patients on antiretroviral therapy. Newer innovations are necessary in settings where logistics around plasma monitoring are challenging. We assessed the performance of a plasma separation card (PSC) during routine patient care for VL monitoring in clinical settings.

Material and Methods: We employed a multi-site, cross-sectional evaluation of a PSC on blood specimens collected from all consenting adult (>18 years) and assenting young (<18 years) patients living with HIV attending ten primary healthcare clinics in Ekurhuleni and Bojanala Districts, South Africa. Ethylenediaminetetraacetic acid (EDTA) anti-coagulated venous samples and PSCs made using capillary blood were collected on site. Plasma VLs were tested at three routine National Health Laboratory Services (NHLS) referral laboratories using standard of care assays. PSCs were tested at the NHLS, Johannesburg using the COBAS® AmpliPrep/COBAS® TaqMan®. We described sample characteristics and used McNemar tests to assess the differences in agreement between the EDTA- and PSC plasma-samples. Significance was determined at 5%. The usability of PSC associated tasks such as blood spotting, PSC preparation and analysis was assessed by collecting data on a six-point Likert-scale from healthcare and laboratory staff.

Results: We enrolled 538 patients, majority of whom were adults [n=515, 95.7% (95% CI:93.7%-97.1%)] and female [n=345, 64.4%(95%CI:60.0%-68.1%)]. Overall, 536 paired PSC- and EDTA-plasma samples were sent for viral load testing of which 503 pairs were tested. Overall, sample failure was

reported in 106 [21.1% (95%CI:17.7%-24.9%)] samples. Concordance between the paired PSC- and EDTA-plasma samples was reported for 436 (86.7% (95%CI:83.4%-89.4%)) samples. Analysis of 503-paired samples at 1,000 copies/ml threshold yielded an overall sensitivity of 87.5% (95%CI:73.2%-95.8%) and specificity of 99.3% (95%CI:97.9%-99.8%). On the Likert-scale, healthcare staff scored most tasks above 40% ("neutral") whereas laboratory staff rated all the tasks in the pre-analytic workflow assessment as above 80% (agree).

Conclusion: There was concordance of VL counts between PSC- and EDTA-plasma samples. PSC usability by healthcare workers was less favourable. For scale-up of PSC for VL monitoring in clinical settings, addressing the challenges related to its usability is necessary to achieve the UNAIDS third 95 target in South Africa.

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Reaching Adolescent Boys 10-19 Years Old in the Community Through the Adolescent and Youth Mobile Clinic for Sexual and Reproductive Health: The INGUSSA Project in Maputo Province

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Background: Utilization of Sexual and Reproductive Health (SRH) services by adolescents and youth is suboptimal in Mozambique, due to many barriers among which the scarcity of specific friendly services at the health facility, poor accessibility, limited skilled staff and attendance time.

Differentiated service delivery models are needed to address contextual barriers and engage this underserved priority population providing quality SRH in a friendly environment.

Material and Methods: Adolescent and Youth Mobile Clinics (AYMC) were implemented from May 2021 to December 2022 in Matola and Marracuene districts, to offer SRH services to adolescents and youth 10-24 years old, including HIV and sexual transmitted diseases (STD) counselling, screening and treatment services. The AYMCC covered 7 communities and 14 schools each month, while mobilization was done at the community level by trained community leaders and peer adolescents. We present a descriptive analysis for three indicators of 10-19 years old adolescents: services' uptake, STD screening and treatment, HIV counselling and testing. Jonckheere-Terpstra test was used to test the significance of trends over time.

Results: A median of 644 adolescents 10-19 years old were attended every month (IQR 442-1005), 252 males (IQR 156-383) and 391 girls (IQR 269-610); a median of 624 (IQR 420-1005) were screened for STD, a median of 66 (IQR 37-118) had a positive STD screening and received treatment, a median of 222 (IQR 131-415), 147 females (IQR 86-237), 83 males (IQR 46-161) were counselled and tested for HIV. The time trends showed a significant increase of AYMCC utilization by males (p trend= 0.003), of STD screening among males (p trend= 0.004), and of STD treatment among both males and females (p trend= 0.039). The utilization of Matola AYMCC showed an upward trend for males and females; STD treatment trend was significant among both males and females (p = 0.013) in Marracuene AYMCC.

Conclusion: The implementation of AYMCC reached a substantial number of adolescents in the community with a significant upward trend in the monthly utilization by males. The approach should be considered as a complementary service delivery model to reach and engage this priority population in SRH care, that includes HIV counselling and testing.

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Hypertension Care for People Living with HIV in Southern Mozambique: Uncovering High Caseload and Lack of Care Integration During the COVID-19 Pandemic

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Background: Integrated service delivery models support continuity of care for non-communicable diseases, including hypertension (HTN) care. Aim: To assess patterns of HTN care for people living with HIV (PLHIV) in Southern Mozambique.

Material and Methods: A service delivery assessment tool was built including direct observation, consultation of routine data collection tools and questionnaire to primary health centres (HC) leadership to assess infrastructure, human resources, equipment, consumables, laboratory/pharmacy services, availability of integrated services. Sixteen high-volume HC in the Maputo metropolitan area were assessed between January/2021 and December/2021.

Results: The HC assisted 112.913 PLHIV providing a mixed model of care for PLHIV and HTN led by either mid-level professionals (MLP) working alone (seven HC), MLP who refer to doctors in the same HC (four HC) or doctors and MLP working together (10 HC). Overcrowding was found with clinicians sharing the same room (10 HC). There was high caseload of PLHIV (mean 30/clinician/day) and low BP screening rates (12.5%). No HC had point-of-care testing for metabolic risk markers, hampering prompt assessment and adequate management; collected samples were transferred to referral hospitals. Twelve did both consultations in the

same room, and used a single patient file; however, only four allowed HIV and HTN management during the same visit/day. Regarding to the number of patient ID cards 8 HC used two cards (one for each condition), six used two ID numbers in the same card, and two only had a card for HIV follow-up. HC did not share HIV archiving with HTN files. While there was free availability of antiretroviral drugs in all HC, all HTN medicines need to be purchased.

Conclusion: Our study highlighted major health systems' inefficiencies in HIV and HTN care in Southern Mozambique during the COVID-19 pandemic. We found high caseload, insufficient infrastructure, shortage of health personnel, and parallel processes for patient flow through the health system, revealing lack of integration of HTN and HIV care. Evidence-based guidelines and clinical protocols for HTN management, health workers' responsibilities and referral pathways need to be incorporated in HIV care to ensure continuum of care and improve outcomes.

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Hypertension Care Cascade Among People Living With HIV at Two Primary Healthcare HIV Clinics in Uganda: Lessons From a Pilot Implementation Study

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Background: The World Health Organization recommends integrating hypertension (HTN) screening and treatment into routine HIV care; however, evidence for how to implement integrated care in different contexts is needed. In formative work to develop a care integration strategy for a planned implementation trial, we

conducted a pilot study at primary healthcare (PHC) HIV clinics in Wakiso district, Uganda.

Material and Methods: For this mixed methods study, we engaged one public clinic (clinic A) and one private not-for-profit (clinic B) and supplied blood pressure (BP) cuffs and anti-hypertensive medications free of charge to both. We also provided an evidence-based treatment algorithm, conducted one-on-one coaching and online case discussions, and established clear referral systems for complicated cases. After nine months of implementation, we compared BP screening rates and HTN treatment cascade metrics at the two clinics. We also interviewed adult PLHIV with HTN (n=10) and healthcare providers (HCP) (n=10) to understand their experiences of integrated care. These qualitative data were analyzed inductively to identify emerging themes.

Results: Between February and December, 2022, 3803 PLHIV received HIV care (1459-A and 2344-B private not for profit; 69% female). Mean (SD) age was 45(13) years at clinic A vs 48(10) years at clinic B, p=0.015. Rates of BP screening and HTN prevalence were lower in clinic A vs B (86% vs 96%, p<0.001; and 7% vs 9%, p0.063, respectively). Despite higher baseline BP among hypertensive patients at clinic A vs B [mean (SD) systolic BP 162(SD 27) vs 149 (SD 27), p<0.001], control rates were higher in clinic A vs B after 9 months (68% vs 42%, p<0.001). At both clinics, PLHIV with HTN appreciated receiving anti-hypertensive medicines at no cost and having a one-stop shop for care; however, frequent visits to the clinic for HTN medicines and associated travel costs were key barriers. HCP had challenges integrating HTN into HIV care, but these challenges varied across the two clinics and included increased workload resulting from screening, counseling, and education and the need to document these processes.

Conclusion: Integrated HIV-HTN care improves clinical outcomes in PHC HIV clinics but needs to be aligned with clinic workflows for sustainability.

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Managing Cryptococcal Meningitis among People with Advanced HIV Disease in Nigeria: A Cost Analysis

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Background: In 2019, Nigeria adapted the WHO standard package of care (PoC) for Advanced HIV Disease (AHD), which includes the management of Cryptococcal Meningitis (CM). However, CM management includes additional services not funded by the national HIV program. This study investigated the direct medical cost implications of managing CM among people with AHD in Nigeria.

Material and Methods: We reviewed cross-sectional data among AHD patients managed for CM at all 28 hospitals across four states in Nigeria where AHD care was first rolled out. Direct medical cost per CM episode was estimated from reported CM cases recorded by monitoring and evaluation (M&E) tools and cost elements obtained from local hospitals, pharmacies, and market intelligence reports. The obtained cost per CM episode was applied to 2021 national prevalence estimates, and the overall annual cost of managing AHD-related CM in Nigeria was determined. MS Excel was used for the analysis of data.

Results: The cost per CM patient is estimated at \$410.6 (\$19.6 for the diagnosis and \$391 for treatment costs). Our analysis shows that the treatment component accounts for over 90% of the cost for CM (with the induction phase accounting for 88%, the consolidation phase 5%, and the maintenance phase 7%). Of the total estimated cost, \$25.1 (\$12 for supplementary treatment and \$13.1 for lumbar puncture) is not provided by the HIV program. Using national data, 180,870 (48%) of the approximately 376,813 PLHIV enrolled in 2021 were estimated to have AHD and required serum CrAg testing. Of this, an estimated 5,426 required further CSF CrAg testing with an expected positivity rate of 50%, thus, 2,713 clients required CM treatment. In 2021, the estimated cost of diagnosis

and treatment of AHD-related CM across the entire cascade of care in Nigeria was \$1,583,519.

Conclusion: To our knowledge, this is the first study to quantify the direct medical costs of CM management in Nigeria. This will benefit market-shaping interventions to improve access to CM commodities and help inform the scale of donor investments needed to reduce the burden from CM morbidity and mortality in people with AHD.

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Health Worker Acceptability of Lynx, an HIV Testing Mobile Health Application, Within a Rural Zambian HIV Treatment Program

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Background: Sustaining HIV epidemic control in Zambia requires identifying new HIV-positive persons, which is increasingly difficult and requires innovative targeted testing. In response, Right to Care developed Lynx, a novel digital health surveillance application, which was implemented in three northern Zambia provinces by Right to Care-Zambia in 2018. Providing real-time HIV testing data with geospatial analysis, the innovation increased HIV testing yield. An evaluation of the acceptability of Lynx by the HIV testing healthcare workers was then completed through an adaptation of the verified Technology Acceptance Model (TAM) to ensure Lynx is being utilized to its fullest potential.

Material and Methods: The study was a cross-sectional mixed approach with a combination of quantitative and qualitative research methods completed November-December 2022 with facility and community HIV testing health workers. A quantitative Likert survey was used at nine intervention facilities to measure acceptability of the intervention through the factors of: perceived ease of use, perceived usefulness, and perceived compatibility to local context. Six qualitative key

person interviews and five focus group discussions were conducted and aimed at acquiring an in-depth understanding of the same factors, as well as identifying their barriers and facilitators.

Results: Health workers perceived Lynx as highly usable due to trainings, though local IT support and infrastructure can create periods of disuse. Lynx was perceived as highly useful in the HIV treatment context, with noted benefits of real-time data reporting, individual performance tracking, guidance during counselling, and HIV testing heat maps. The perceived compatibility was slightly lower, some health workers noted better compatibility in a facility with designated data entry spaces, others noted stronger compatibility in community settings for convenient mobile recording, but it was also noted the time to complete could be a barrier in busier settings.

Conclusion: The results indicate that Lynx is perceived as highly useable and useful by healthcare workers. Perceived compatibility was more dependent on its use in the facility versus community, but both are impacted by the time to complete the application. Findings indicate that enhancing IT support, local infrastructure, client perception, facility setup, and Lynx's length can further enhance the acceptance of the application for increased targeted testing.

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Knowledge of HIV Status Among Men Aged 20-35: Results of a Feasibility Time Location Sampling Survey in Lusaka, Zambia

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Background: Time location sampling (TLS) methods may prove an effective way to reach men with HIV testing services and to estimate the impact of interventions targeted at men. In Zambia, where

men are less likely to know their HIV status than women, we conducted a feasibility TLS survey. We aimed to assess acceptability and feasibility among men aged 20-35, the ages when HIV prevalence doubles amongst men, and estimate knowledge of HIV status among men reached.

Material and Methods: Two research assistants (RAs) mapped hotspots, defined as places where men congregate, in a densely populated community in Lusaka. Hotspots were grouped into five strata (betting shops; car parks/washes; bus stations/taxi ranks; churches; markets/shopping streets) and day/times when hotspots were frequented by men were listed. Within each stratum, approximately three hotspots were randomly selected. Subsequently, one day/time was randomly selected for each hotspot. RAs attended the hotspot and approached men aged 20-35 for participation in a short questionnaire. We describe consent to participate and knowledge of HIV status (self-reporting knowing one's HIV positive status or having tested for HIV in the previous 12-months). We present weighted estimates.

Results: 339 men were approached, among whom 304 (90%) were eligible and agreed to hearing information about the study. Among these men, 297 (98%) consented to participate: 23% were aged 30-35, over half were employed (65%) and 34% reported having completed secondary education. Among all men, 59% reported knowing their HIV status. Adjusting for recruitment strata, knowledge of HIV status was similar by age (25-29: 66%; 20-24: 55% and 30-35: 56%; $p=0.27$). Knowledge of HIV status was lowest among men recruited at churches (49%) and highest among men recruited at bus stations/taxi ranks (70%). Almost all men (96%) said they would access HIV testing from the recruitment location if services were available.

Conclusion: The TLS survey was feasible and acceptable among men, as evidenced by high participation. Overall, forty-percent of men did not know their HIV status. A hotspot driven approach to delivering HIV testing services may prove effective at reaching men. Furthermore, TLS surveys should be explored as a tool to evaluate interventions targeting men.

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Lessons Learned From Large Scale Shang Ring Device VMMC Implementation Research in Zimbabwe: Operational Considerations to Address Supply Chain Challenges

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Background: The INTEGRATE program assesses the safety, acceptability, efficiency and cost-effectiveness of the Shang Ring (SR) for VMMC among adolescent males aged 13-16 years Zimbabwe. Supply chain challenges due to the wide range of different device sizes have been reported as a major limiting factor for larger SR scale up.

Material and Methods: In the absence of SR sizing data, we used data from the SR active surveillance study conducted in Kenya for the procurement of the first batch of devices for implementation across six study districts, including 16 different device sizes. Two rounds of procurement secured 7,250 kits distributed across 65 implementation sites. In the initial phase of implementation clinicians gained proficiency during SR procedure training for circumcising males aged 15 year and older requiring the full range of device sizes with size distribution being widely scattered with variable patterns across geographies.

Results: The need to continuously stock all adult and adolescent device sizes poses procurement challenges as relative consumption rates of different devices sizes depends on daily service uptake by different age bands which is unpredictable. Device utilization variations forced movement of devices across sites and caused stock-outs which halted recruitment of participants into the study, especially among younger age groups.

This will have implications on unit costs and limit rapid scale up of SR VMMC implementation.

Conclusion: Complex sizing across age groups and regions and distribution challenges warrants a hub and spoke approach to service delivery, which could be applied in school-based mop up campaigns targeting younger age bands, as opposed to a permanently decentralized service offer across multiple sites.

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Managing Pain Along the Continuum of Care for Delivering Shang Ring Device Method for VMMC Services Among Younger Adolescents in Zimbabwe

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Background: Fear of pain remains a barrier for voluntary medical male circumcision (VMMC) uptake. Qualitative data suggests that mobilizer information and provider counseling around pain may be inadequate due to concerns about discouraging the client from taking up services. Zimbabwe conducted “The Ring” campaign to promote PrePex device male circumcision between 2014 and 2016, promising a rapid post-service return to work and school and less pain related to the procedure, with no injectable anesthesia being required, a much shorter procedure time, and no stitches. Zimbabwe’s INTEGRATE program is testing the safety, acceptability, cost and cost effectiveness of Shang Ring device method services among adolescents 13-16 years at 71 sites across nine districts.

Material and Methods: Between June 2022 and January 2023, 1,600 males aged 13-16 years were recruited into the study. Data on perceived pain

experienced by the study participants during application of the device and foreskin removal, while wearing the device for 7 days, during removal of the device and during the wound healing period was collected through interviewer-administered client satisfaction surveys. Participants measured their pain using a Likert scale.

Results: All 1,600 participants received topical anesthesia 30 minutes before the operation. None of the participants required additional injectable anesthesia. Of the 1,600 clients interviewed, 734 (46%) experienced pain while wearing the device, with 587 (80%) experiencing at most grade 4 pain, 557 (76%) experiencing pain in the first two days. Pain feedback prompted a shift in paracetamol dosing from 500mg three times daily to up to 1g four times daily. At device removal, 803 (50%) experienced some pain, with 699 (87%) experiencing at most grade 4 pain. 415 (26%) of clients wished they had received more information about pain prior to the procedure.

Conclusion: Topical anaesthetic cream provides sufficient anaesthesia for the SR procedure. Pain experienced post procedure is manageable with oral analgesia provided prophylactically. A shift to flexible higher dosing of paracetamol might be required for satisfactory pain control. Providers and counsellors need to be better prepared to counsel clients on how to manage post-procedure pain.

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Nurse-Led Community ART Distribution in Malawi: A Retrospective Cohort Study of Retention, Viral Load Suppression and Costs

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Background: Partners in Hope, a Malawian, Christian non-governmental organization, implements community ART distribution (CAD), in which nurse-led ART teams deliver HIV services at

health posts in communities. CAD outcomes and costs relative to facility-based care have not been reported from Malawi.

Material and Methods: We performed a retrospective cohort study comparing CAD with facility-based ART care. We selected an equal number of clients from CAD and facility care who were aged >13 years, had viral load suppression (VLS; <1,000 copies/mL) and were stable on first-line ART for ≥1 year at the beginning of medical chart review. We compared retention in care (alive and no period ≥60 days without ART) and maintenance of VLS over 14-months of follow-up, using logistic regression, Kaplan-Meier survival analysis and Cox regression. We also compared costs to the health system and to clients by model of care. In client costs, transport to the care point was not included. Data were collected in October and November 2020.

Results: 700 ART clients (350 CAD, 350 facility-based) were included; median age 43 years (IQR 36-51), median duration on ART 7 years (IQR 4-9) and 75% female. Retention in care was not significantly different between clients in CAD (89.4%) and facility-based care (89.3%); $p=0.95$. We also did not find differences in maintenance of VLS between CAD (97.2%) and facility-based care (96.3%); aOR: 1.24, 95% CI: 0.47-3.2, $p=0.7$. Health system costs in CAD care were higher than in facility-based care (\$115 per person accessing care per year vs. \$104 and \$123 per person retained in care per year vs. \$114 respectively). Cost to an individual client in CAD care was lower than in facility-based care (\$3.1 per year vs. \$11.0 respectively).

Conclusion: Nurse-led CAD care in Malawi had similar retention and VLS outcomes as facility-based care. While health systems costs were higher, CAD care reduced costs for clients. More research is needed to understand the impact of similar differentiated service delivery models on health system and client costs.

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Optimization of a Stepped Care Intervention for Adolescents and Youth Living With HIV in Kenya Using Continuous Quality Improvement

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Background: The Data-informed Stepped Care study is a cluster randomized controlled trial testing provision of a differentiated care program (Stepped Care) across 24 HIV care clinics in Kenya, aimed at improving retention in care for youth living with HIV (YLH). We describe adaptations to Stepped Care implementation made by health providers to optimize uptake and delivery.

Material and Methods: Between May and December 2022, we conducted continuous quality improvement (CQI) meetings with providers to adapt Stepped Care delivery at 12 intervention sites in 3 counties (Kisumu, Homabay, and Migori). Guided by plan-do-study-act (PDSA) processes, providers identified challenges and proposed targeted adaptations to improve intervention reach, adoption, acceptability, feasibility, and fidelity. Providers also completed surveys to quantify implementation perceptions. CQI meetings were audio recorded and analyzed using the Framework for Reporting Adaptations and Modifications-Expanded (FRAME) to categorize the level, context, and content of planned adaptations and determine if adaptations were fidelity consistent or inconsistent.

Results: Providers, including nurses (N=14) and clinical officers (N=35), participated in 72 CQI meetings. Providers were a median age of 34 years

(IQR: 30 – 38) and mostly female (53%). A total of 65 adaptations were made (23 unique). The majority of adaptations were context-specific, related to implementation, and consisted of improving documentation addressing scheduling challenges (election climate or reaching in-school YLH), or clinic workflow. Primary reasons for adaptation were to increase reach among YLH who did not attend clinic with caregivers, lacked updated contact numbers or phones, or were unreachable because they were in school. Adaptations to addressing challenges with reach included reminder calls to caregivers to attend visits with YLH, collaborating with schools to ensure in-school YLH attend their appointments, and addressing transportation challenges. Providers also adapted to mobile delivery to improve adoption and feasibility of counseling sessions, and improved fidelity by adapting processes for assessing levels of care and ensure YLH received correct services.

Conclusion: Adaptations identified by providers targeted availability of resources and aimed to reduce barriers to service access unique to YLH. Adaptations that optimize implementation and promote integration into routine practice can inform future scale-up and scale-out of Stepped Care to other settings.

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Effectiveness of an Intervention to Increase Uptake of Voluntary Medical Male Circumcision Among Men With Sexually Transmitted Infections in Malawi: A Pre- And Post-interventional Study

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Background: Despite good access to voluntary medical male circumcision (VMMC) in Malawi, uptake remains low. We implemented an intervention to increase VMMC uptake among men with sexually transmitted infections (STIs).

Material and Methods: We conducted a pragmatic pre- and post-interventional quasi-experimental study to evaluate the effectiveness of transport reimbursement (“R”), intensified health education (“I”) and SMS/telephonic tracing (“Te”), abbreviated (RITe) on uptake and time to uptake of VMMC and assessed predictors of VMMC uptake at Bwaila STI clinic in Lilongwe. The pre-intervention phase was conducted at baseline while RITe was rolled-out in the intervention phase in a sequential manner called implementation blocks: “I” only - block one; “I” plus “Te” - block two; and RITe - block three. We calculated the uptake and time to uptake of VMMC for the intervention and for each block and compared to the baseline using two-sample test of proportions, hazard ratios, and Kaplan-Meier methods. Multivariable binomial regression models were used to evaluate predictors to uptake of circumcision.

Results: A total of 2230 uncircumcised men presented to the STI clinic. The mean age was 29 years (SD ±9), 58% were married/cohabiting, HIV prevalence was 6.4% and 43% had urethral discharge. Compared to standard of care (8/514, 1.6%), uptake increased by 100% during the intervention period (55/1716, 3.2%) (P=0.048). “I” (25/731, 113%, P=0.044) and RITe (17/477, 125%, P=0.044) significantly increased VMMC uptake. Time to circumcision was shorter during the intervention period compared to standard of care (HR=2.22, 95% CI: 1.004, 4.934). Men with genital warts were 18 times more likely to receive circumcision (aRR=18.74, 95% CI: 2.041, 172.453).

Conclusion: Our intervention addressing barriers to VMMC improved the uptake and time to uptake of VMMC among uncircumcised men with STIs, an important sub-population for VMMC prioritization.

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Triangulating Orphans and Vulnerable Children Program and Health Facility Data to Improve HIV Treatment Outcomes for Children and Adolescents Living With HIV

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Background: COVida (2016–2023) is a PEPFAR/USAID-funded orphans and vulnerable children (OVC) project implemented in 30 districts in seven provinces in Mozambique by FHI 360 and local partners. A project priority is to help children and adolescents living with HIV (CALHIV) achieve viral load (VL) suppression, but lack of accurate data on their treatment status prevented COVida from providing appropriate support at the community level. To address this challenge, COVida introduced a data-triangulation approach in October 2019.

Material and Methods: The data-triangulation approach compares self-reported OVC program data with data in the health facility (HF) patient information system to identify data gaps and discrepancies and inform corrective actions. This approach was piloted during October–December 2019 in 14 HFs in five districts in Inhambane province in collaboration with the PEPFAR HIV clinical partner.

Results: Of the 1,555 CALHIV self-reported as on ART in OVC program data, HFs confirmed only 1,473 as on ART. Among those confirmed, only 767 (52%) had VL data, of whom only 462 (60%) were virally suppressed. These results led to improvement actions such as finding defaulters, referring CALHIV to VL testing, and providing enhanced adherence counseling to those with high VL loads. In September 2020, the number of CALHIV on ART had increased to 1,647, those with known VL to 1,183, and those virally suppressed to 552, a 12%, 54%, and 19% increase, respectively. Given these results, data triangulation was scaled up to all 203 HFs in COVida’s program sites during the remainder of 2020. Data triangulation has contributed to

improve treatment outcomes among CALHIV in all project sites. The project's overall VL coverage rate increased from 50% in 2020 to 92% in 2022, and VL suppression from 61% to 91%.

Conclusion: Data triangulation helps OVC and clinical partners work together to improve treatment outcomes for CALHIV. It also allows OVC programs to access real-time clinical data to meet the needs of CALHIV at the community level. This approach is critical to reduce the pediatric and adolescent HIV treatment gap and should be used by all OVC and HIV clinical partners working in the same geographic areas.

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Pre-exposure Prophylaxis-To-Need Ratio Among Key Populations in Eastern, Western, and Southern Provinces of Zambia

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Background: As Zambia nears HIV epidemic control, it needs targeted scale-up of pre-exposure prophylaxis (PrEP) among at-risk key populations (KPs). As disparities in PrEP coverage may occur, real-world data is required to compare PrEP use, need, and coverage to address gaps and barriers to access. We estimated PrEP-to-need ratio (PnR) among KPs in three provinces with high HIV prevalence.

Material and Methods: The Community Impact to Reach Key and Underserved Individuals for Treatment and Support (CIRKUIITS) project supports community-based HIV services in Eastern, Southern, and Western Provinces. We conducted a cross-sectional analysis of routinely collected de-identified data from October 2021 to September

2022 for KP clients that tested positive for HIV and were initiated on PrEP. The PnR was calculated by dividing new PrEP initiations by newly identified HIV-positive cases, which is considered a proxy measure for PrEP need. A higher ratio indicates greater PrEP coverage relative to its need.

Results: A total of 2,488 KPs were initiated on PrEP: 24% (600/2,488) Eastern, 66% (1,634/2,488) Southern, and 10% (254/2,488) Western. KPs included 56% (1,386/2,488) female sex workers (FSWs), 39% (963/2,488) men who have sex with men (MSM), 3% (74/2,488) transgender persons (TG), and 3% (65/2,488) people who inject drugs (PWID). PnR values varied across provinces, districts, and KP sub-types. Southern (PnR=1.3) and Western (PnR=1.2) had a lower coverage of PrEP relative to epidemic need as compared to Eastern (PnR=2.8). PnR varied across districts ranging from 4.9 in Lundazi to 0.9 in Mazabuka and Mongu. Across KP types, PnR was lowest among FSWs (PnR=1.2) and highest among TG and PWID (PnR=2.1).

Conclusion: In Zambia, PrEP need is highest in Southern and Western Provinces, and among FSWs. PnR provides unique insights into PrEP provision and coverage across geographies and populations; it can guide future implementation to address specific areas and sub-groups with greatest PrEP need.

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Implementation and Outputs of WhatsApp Chatbot Technology to Support Effective HIV Self-Testing in the Private Sector in Kenya

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Background: Technology continues to enable health service delivery in unique ways. Reports indicate that WhatsApp has 2B users making it the most popular application in over 100 countries including Kenya. We rolled out a WhatsApp chatbot to promote effective use of HIVST kits and linkage

to HIV prevention, confirmatory testing and antiretroviral therapy in Kenya. We explore how users became aware of the chatbot and registered to access various menu options including where to purchase, how to use and handle results.

Material and Methods: PS Kenya created awareness of the chatbot through its social media platforms and placement of IEC materials at retail pharmacies. Users registered on the chatbot to support user journeys. The team also partnered with other organizations and leveraged on planned social events to optimally reach the desired target segments on availability and services offered by the chatbot. 54 social media posts were shared on facebook, twitter, Instagram and LinkedIn. 3 joint events conducted.

Results: 395 unique (249 Males,139 Females and 7 others) landed on the platform. Users ranged between 18 - 46+ years, with 314 ranging between 18-25, 58 of the users being 26-35, 21 of the users 36-45, and 2 users were of age of 46+. On menu selection, of the 314 users of ages 18-25, 10% were interested in self-reporting their HIV status, 24% on HIV risk assessment, 25% on HIV screening, 7% on Help tab, 23% on the find a kit option and 7% FAQs. For users aged 26-35, 12% were interested in self-report,16% Risk assessment,21% HIV screening 10% Help and 34% Find a kit menu. For users aged 36-45 8% were interested in self-report,18% risk assessment,21% HIV screening,13% Help section and 37% find a kit while the remaining 2 users of ages 46+ were interested in risk assessment and find a kit option.

Conclusion: Digital platforms that support person-person messaging including the WhatsApp Chatbot are a competent and viable solution in promoting effective use of HIVST kits among young people hence a sustainable health solution. They not only provide promote access to a health professional for counselling support but also eliminates barriers to access.

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Social Media as a Health Promotion Tool: Promoting HIV Self-Testing Awareness and Uptake Among Sexually Active Individuals in Nigeria

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Background: HIV self-testing (HIVST) offers confidentiality, reduces stigma, and encourages frequent testing. To increase the awareness and uptake of HIVST among 18-34 year olds in Lagos and Abuja and grow the private sector market for HIVST in Nigeria, the Strengthening HIV Self Testing in the Private Sector (SHIPS) project is implementing a demand creation activity using social media. Through a qualitative market research, the project had identified lack of awareness as a key barrier limiting HIV self-testing growth in Nigeria.

Material and Methods: Using the findings from the qualitative market research, the project is using social media channels like Instagram, Twitter, Facebook and TikTok to disseminate information on HIV and promote HIV self-testing. The project employs content development and marketing of text-based posts, images, infographics and videos to raise awareness and encourage uptake of HIVST. The project team used a combination of post-campaign data analysis and real-time tracking using social media analytics and Pulsar – a social media listening tool, to measure the reach and engagement of the social media content.

Results: The project found that using creatives such as videos and infographics were successful in engaging and educating young people about HIV self-testing. Through social media, the project achieved a reach of 508,425 people and 2,437,291 impressions from May to October 2022. Social media strategies such as paid advertisements, content creation, and influencer marketing in promoting HIV self-testing has the potential to reach a wider audience thus making more people

informed about HIV causation and prevention, U=U, HIV self-testing and how to access HIV related resources. Social media listening was helpful in tracking HIV and HIVST related conversations that are relevant to improving programming interventions.

Conclusion: The use of social media channels for disseminating HIV/HIVST related information can significantly increase HIVST awareness and uptake among sexually active young people in Nigeria. Social media is an effective and powerful tool that can help in promoting HIV prevention, provide support and linkage to care and treatment.

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Improving Access to Viral Load Results by Supporting Interoperability Between a HIV Patient-Level Database and Laboratory Database (DISA-Link) in Nampula, Mozambique

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Background: Mozambique has a generalized HIV prevalence of 12.5%, with 64% of individuals living with HIV having a suppressed viral load (VL). This impacts the country's ability to reach epidemic control. Timely access to VL results is essential to ensure adequate clinical and laboratory follow-up. Estimated that 72% of VL samples collected have results available in the Electronic Patient Tracking System (EPTS). In March 2022, ICAP collaborated with Friends in Global Health (FGH), Association of Public Health Laboratories (APHL) and the US Centers for Disease Control and Prevention (CDC) in Mozambique to pilot establishing interoperability between EPTS and a laboratory electronic database for HIV patients (DISA-Link from APHL) at four health facilities (HF) in Nampula.

Material and Methods: The interoperability between EPTS and DISA allows electronic

transmission of DISA laboratory results into the VL requisition form created in EPTS, which avoids the need to manually enter this information. This facilitates data flow and access to laboratory results in EPTS and thereby also streamlines results reporting into the CDC Health Management Information System called Data for Accountability, Transparency, and Impact Monitoring (DATIM). ICAP supported allocation of material, training and mentoring for laboratory and data-entry staff, including routine interviews/observation sessions, data checks and quality assessments to monitor completeness of data.

Results: LAs as a result of this effort, there was an 89% (15,995/17,933) concordance between Laboratory forms in EPTS and DATIM in October 2022. Health facility employee interviews and ICAP staff observations revealed that the automatic data updates in EPTS reduced the volume of information to input manually into the system, reduced risks of human error, such as entering incorrect or missing information, and allowed EPTS data clerks to dedicate more time to other priority activities like data collection and triangulation.

Conclusion: The interoperability of databases in these four HFs improved accuracy of data transfer and increased availability of results in EPTS. Based on the pilot results, CDC, ICAP, and FGH plan to expand interoperability between EPTS and DISA to 15 HFs in 2023 to optimize data clerks' work and minimize data entry errors. This will improve the quality of data available for clinical and program decision making.

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Improving Documentation and Data Quality Through Data Cleaning and Use of Electronic Systems in Four High-Volume Facilities in Montserrado County, Liberia

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Background: About 48% of the estimated 20,950 people on antiretroviral therapy (ART) in Liberia receive treatment in four high-volume facilities in Montserrado County. Since the start of the HIV program in 1990s, data management has relied on a fragmented paper-based system characterized by critical documentation gaps. To overcome these challenges, we conducted a data cleaning exercise and introduced the use of a District Health Information Software 2 (DHIS2) tracker at facility level to manage patient level information and generate reports.

Material and Methods: We conducted pre- and post-Data Quality Assessment (DQA) exercises to measure the quality of data for PLHIV on ART reported in DATIM from four high-volume facilities (JFK, Redemption, TB Annex, and ELWA). The pre DQA covered Oct–Dec 2021 period when the fragmented paper-based system was used to collect and report data, and the post DQA covered April–June 2022 period after the data cleaning exercise and transitioning to an electronic system.

Results: The overall success of documentation and quality of data improved from 58% to 90% upon moving from a paper-based to an electronic system. The highest data quality improvement was observed at JFK Medical Center, which had the poorest quality paper-based system. Redemption hospital data quality improved from 51%-83%, TB

and Leprosy Hospital from 68%-97% and ELWA Hospital from 71%-91% as a result of data cleaning and transitioning from paper based to electronic system.

Conclusion: While many countries still rely on paper-based systems, it can be fragmented and become a threat to overall data quality in high-volume facilities where filing, storage, documentation, and manual reporting is difficult due to the volume of clients. Electronic systems can reduce reporting burden by easing data review and cleaning process and improve the overall data quality.

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Leveraging Digital Media to Increase Demand for and Access to HIV-Self Testing Through the Private Sector in Kampala, Uganda

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Background: Uganda embraced HIVST to close the 14% gap for the first 95 of the HIV targets. Aiming to grow the market for HIVST with a public health impact, PSIU through the human-centered design prototype used digital influencers to ease the discussion about HIV & SRH after participants indicated a preference for digital media over traditional media.

Material and Methods: PSIU launched a self-care digital campaign (June - November 2022) through Twitter, Facebook, Instagram) targeting women and men 18-34 and men 35+ years. It addressed barriers to access to correct information on HIVST, purchase points, usage, results interpretation and reporting, and linkage to prevention and confirmatory testing and treatment.

Results: Through Human-led creative content (videos and infographics), the campaigns reached 1,805,764 people, 80.2% males across all channels. The majority were aged 18-34 years, (74.5% and 25.2% men and women respectively). Males

engaged with the content more than women aged 25-34 (42.6% vs :10%), then 18-24 (25.7%: vs 5.8%), and 34-44 years (7.4% vs: 2%) respectively. Facebook reached 561,553, Twitter - 312,403, and Instagram - 258,045. Twitter registered the highest click-through rate at 21% compared to Facebook's 1%. Influential partners in the HIV space and digital influencers amplifying the campaign complemented the engagements and signposting to linkage tools for further support on HIVST, prevention, and care. Influencer content reached 825,265 people 230, 638 of whom engaged with the posts. Through Twitter polls that had 499 participants, 49.2% indicated that the messages had reduced the stigma for purchasing the HIVST kits. Through live sessions the audience received responses to questions about HIV self-testing for informed decisions and choices. 4,142 (53%) quality- assured HIVST kits were sold, and 30 were online sales (e-commerce).

Conclusion: Social media channels are a great opportunity to reach men compared to women with information on HIVST in the private sector because of men's low health-seeking behaviors through conventional channels and reliance on social media for most of their information. There is a need to improve tracking of linkage from digital tools to online and physical service delivery points while monitoring audience insights and demographics.

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Assessing the Impact of Project TeleECHO Conferencing Platform on Health Care Workers Providing HIV Treatment Services: A Survey of PEPFAR Supported Facilities in Plateau State Nigeria

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Background: The treatment of HIV constantly evolves with increasing demand to update knowledge of health care workers (HCWs). In low-and-medium income countries, physical training sessions with medical experts represents a huge investment. This birthed Project TeleECHO, an innovative teleconferencing platform used to effectively disseminate updated principles and best practices in HIV care and treatment to frontline practitioners who serve communities. Project ECHO (Extension for Community Health Outcomes) is a technology-driven approach for healthcare education to address inequalities in healthcare training. This study documents the significance of ECHO teleconferencing platform in improving HCWs treatment competencies, teamwork, and job/professional satisfaction.

Material and Methods: 13 facilities supported with ECHO equipment in Plateau State were selected for the study between the months of April–September 2022. A mixed method of evaluation was adopted to assess HCW awareness, treatment competencies, professional fulfilment, and teamwork as a result of project ECHO. Responses were collected from 130 HCW, with 10 selected from each facility. Other themes and significant reviews were collected from qualitative articles on healthcare workforce capacity building and transformative health care education from Biomed central (BMC Health Research), International Journal of Innovative Research and Development (IJIRD), and other internet sources published from 2017 to 2022 and analyzed.

Results: All 130 HCWs received the survey link with 111 responses elicited. Of the 111 respondents, 100% acknowledged awareness of Project ECHO, 86% (95) indicated improvement in treatment competencies, and 71% (79) agreed that project ECHO promotes teamwork among HCWs. 49% (54) responded that project ECHO has improved job satisfaction while 6% (7) were indifferent. Out of the 19 articles searched, 16 met the inclusion criteria with 56% (9) qualitative research and 44% (7) systematic reviews. All 16 (100%) articles agree that project ECHO is a cost-effective method of building HCWs capacity, responsive teams, and improving professional satisfaction through transformative health education.

Conclusion: Project ECHO is a viable solution to the challenge of transmitting skills and expertise from health care professionals to frontline clinicians

working in diverse populations. It also establishes that Nigeria's HIV Project ECHO has the ability to advance HCWs treatment competencies, job/professional satisfaction and build responsive teams.

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Assessing Reasons for ART Clinic Missed Appointments Reported Through a Free Mobile Health Service: A Call Center Service at Lighthouse Center of Excellence

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Background: Missed appointments can lead to treatment interruption by HIV recipients of care (RoC) that impacts ART adherence and viral load suppression. In efforts to enhance a person-centered health system, Lighthouse Trust, a WHO recognized center of excellence (CoE), established a call center in August 2020 to provide free mobile health services. We aimed to assess the reasons RoC who called the Lighthouse call center between September 2020 and December 2022 reported missed appointments.

Material and Methods: The call center uses a toll-free number, 169, which accesses both on-net and off-net calls and has dedicated call operators who provide a range of over-the-phone services which includes recording ROCs missed appointments. The service is operational during weekdays from 7:30 am to 4:00 pm. Call operators use registers to document RoC demographic and geographic data, service request information, as well as reasons for missed appointment and appointment reschedules. We employed a quantitative approach to identify most recurring reason for missed appointment using descriptive statistics.

Results: From September 2020 to December 2022, 3,997 calls were registered from 28 districts across Malawi, with the majority of the callers from Lilongwe (24.04%), Blantyre (15.12), Mzimba

(8.58), and Mangochi (6.14%) districts. Age and sex desegregated data also showed that most of the callers were those aged 25+ (68.60%) and male (0.64%). Of the 3,997 calls, 441(11%) were calls to communicate missed appointment. An assessment of the reasons for missed appointment showed that travel (43.76%, attending funerals (10.12%), taking an emergency refill elsewhere (9.65), illness of RoC or their immediate family (8.71%), lack of transport fare (8.47%), self-transfer (7.06%) relocation (3.06%) were key reasons.

Conclusion: The call center service has helped facilities support RoC who would have otherwise been documented as missed appointments requiring further retention engagement. Furthermore, having this person-centered service enhances retention, cross-communication and relations between facility and provider which enables RoC to communicate their failure to come on scheduled appointment dates, reschedule clinic appointments, communicate when they have relocated or transferred out of the facility, as well as request for support in identifying facilities that can provide them with emergency ART refills when they have travelled.

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Digital Programming: Exploring the Use of a Self-Paced Online Whatsapp Chatbot on HIV Self-Testing to Promote Information, Access, and Self-Report to Support HIV Testing in Nigeria

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Background: Opportunities to increase uptake of HIV self-test (HIVST) in community pharmacies, online outlets and E-commerce have increased due to the awareness and demand created by intervention programs in Nigeria. However, the modalities to increase access to services, information, and reporting of HIVST result is still

limited. In August 2022, a self-paced WhatsApp chatbot on HIVST was developed to assist new and frequent users on access channels for HIVST kits, instructions for use, and next-step guidance for HIVST. The WhatsApp chatbot was promoted through various channels including social media, inclusion of the chatbot links to community mobilization messages and Information Education Communication (IEC) materials.

Material and Methods: We retrieved and quantitatively analysed user data of the chatbot access between September 2022 – January 2023 to describe the following user profile including number of users who accessed the chatbot, gender, age, and how users learned about the chatbot. We also analysed the frequency of access of the user-information-menu. The user-menu include risk assessment, HIV Screening, where to obtain test kit, Self-report, user-Help, and terms and conditions menu.

Results: From September 2022 to January 2023, a total 393 users assessed the chatbot, and majority were aged 21-25 years (50.8%). Females made up 62% users. 49% users had never tested for HIV and 64% of users indicated higher interest on how to use the kit. Females reported higher risk (64%) of contracting HIV than males. Also, more females (71.2%) than males indicated higher interest in buying the HIVST kit from E-commerce, physical and online pharmacies. The least accessed menus were the terms and conditions (1.4%) and self-report menu (2.7%). Most users reported social media through social media influencer as the channel where they learned about the chat bot (65.1%).

Conclusion: Exposure to WhatsApp chatbot to client on HIV self-testing has the potential to deliver relevant information including instructions for use and access channels for HIV self-testing services; this can improve service delivery and uptake.

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Electronic Medical Records System Enables Clinicians to Effectively Manage ART Clients and Provide Services on time: Lessons from Key Populations Program in Zimbabwe

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Background: Electronic Medical Records (EMR) can improve the speed and accuracy of health data collection for Clinical Decision Support (CDS), better health outcomes and real-time reporting. Zimbabwe relies on paper-based client management and reporting through registers. PSI and Population Solutions for Health (PSH) serve key populations, adolescent girls and young women, and high-risk men and boys with a full package of HIV prevention, care and treatment and sexual and reproductive health services. To strengthen clinical management, PSI and PSH introduced open source Bahmni, an integrated EMR based in an OpenMRS architecture operating in 8 sites in 12 districts.

Material and Methods: Interoperable with other electronic systems such as DHIS2, Bahmni has static and outreach modules with online and offline functionality. 300,000 unique clients have been registered in Bahmni including over 11,000 ART clients, mostly key populations in five districts. The system has Clinical Decision Support (CDS) tools for clinical management, including automatic line list dashboards for actual and missed appointments, missed reviews, unsuppressed clients, and HIV cascades. CDS enables clinicians to identify and follow-up unsuppressed clients or clients due for ART or PrEP refills, viral load monitoring (VLM), cervical cancer screening (CCS), and modern contraceptives are complemented by deep-dive analytics for improved client understanding.

Results: Bahmni has enabled the treatment program to maintain a clean cohort of ART clients and strengthened client follow-ups for improved clinical management with assigned outcomes for

each client. Since January 2021, ART retention, VLC and VLS have remained consistently above 95% while CCS coverage has been consistently above 90%, despite the hidden and highly mobile nature of key populations networks and the persistent stigma, discrimination and criminalization they face, made worse during COVID.

Conclusion: Transitioning from paper-based systems to an integrated EMR with functional CDS tools contributes to effective, efficient clinical management. Optimal use of similar solutions can contribute to achieving and sustaining HIV epidemic control in low-income resource setting. Stable and reliable Bahmni does not require subscriptions or specialized expertise for maintenance. All development code is available to public, private and community partners.

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Scaling up Targeted Community-Based HIV-Self Testing Through Lay Cadres: Lessons From a Programming Perspective in Zimbabwe

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Background: Over the years, Zimbabwe expanded HIV-testing beyond facility-based testing to community HIV-testing modality in efforts to identify the missing PLHIV. This has been through recruitment of lay-cadres (community outreach agents, COAs) who work in partnership with community health nurses (CHNs) and have been trained to distribute HIV self-testing (HIVST) kits in communities for broader reach of hard-to-access populations. Despite the wide-reach of community HIV-testing, there is need to ensure there is increasing HIV-testing yields.

Material and Methods: The OPHID consortium collaborates with the Zimbabwe Ministry of Health in HIV programming across 15 districts (317 health facilities) with additional community support of 1,000 COAs. In the community, HIVST kits are

distributed using a HIV-risk screening decision-aid electronic ODK-based tool targeting index contacts, adolescent girls, and young women (AGYW), clients with poor health among others. These COAs deliver HIVST to individuals and provide front-line counselling. All clients with reactive HIVST, are linked with community health nurses for a rapid HIV confirmatory test prior to antiretroviral therapy (ART) initiation among those HIV-positive.

Results: Between June 2021-May 2022, 5,057 adolescents and young adults (15-24 years) were screened by COAs, of whom 3,169 (63%) were females and 1,741 (34%) were contacts of index clients and 1,384 (27%) were those with poor health from the community. Overall, 4,276 (96%) were screened and issued HIVST based on the ODK-based HIV-risk screening electronic decision-aid tool of whom 3,959 (92.6%) shared their results and 425 (10.7%) were reactive and referred for confirmatory HIV testing. High odds of reactive HIVST results included males [odds ratio (OR)=1.53; 95% confidence interval (CI): 1.23-1.91], those 20-24 years old versus those 15-19-year-old [OR=1.36; 95% CI (1.09-1.70)] and those with a higher number (three versus one) of identified HIV-risk characteristics [OR=1.99; 95% CI (1.45-2.71)].

Conclusion: Community HIVST approaches are vital in identifying the missing PLHIV otherwise missed in the health facility especially men who have poor health seeking behaviours. The use of HIVST coupled with an electronic decision-aid HIV-risk screening tool ensures standardized screening through lay cadres resulting in targeted linkage to rapid HIV testing and increased HIV testing yields from the community.

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Event Driven PrEP Is a Feasible and Effective HIV Prevention Option for Men Who Have Sex With Men (MSM) In Zimbabwe: Evidence From a Prospective Cohort Study

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Background: HIV prevalence remains high among MSM. Preventive options such as oral PrEP have low uptake, especially in Sub-Saharan Africa. Several studies (Zimbabwe, Kenya, and Zambia) have shown one-, two- and three-month continuation rates of below 50%. Population Solutions for Health, PSI, and the Ministry of Health and Child Care piloted event-driven PrEP (Prep 2-1-1) among men who have sex with men (MSM) using WHO guidelines. PrEP 2-1-1 involves taking two pills of Truvada two to 24 hours before unprotected sex, another one 24 hours after the initial dose then the last pill 24 hours after the subsequent dose. The pilot sought to measure continuation rates, adherence, and seroconversion to inform method scale-up.

Material and Methods: A prospective cohort design recruited 381 MSM from Harare and Bulawayo between January – September 2022. Participants were followed at one, two- and three months post-baseline. PrEP continuation point estimates and proportions of clients reporting correctly taking pills according to the WHO PrEP 2-1-1 guidelines were calculated including 95% confidence intervals (CIs). Qualitative insights from MSM on their experience on PrEP 2-1-1 was documented.

Results: Of 381 study participants, continuation rates were 82.9% (95% CIs: 80.5 – 83.2) at 1-month follow-up, 79.5% (95% CIs: 77.8 – 81.2) at 2-months follow-up, and at 3 months 73.8% (95% CIs: 70.8 – 76.4). Dosing adherence was high and improved significantly over time on PrEP 2-1-1. Two out of

381 clients tested positive at a 3-month follow-up. Study participants appreciated PrEP 2-1-1 convenience in minimizing pill burden and side effects. Service providers were confident in scaling up the intervention to other districts.

Conclusion: Eligible MSM demonstrated high PrEP 2-1-1 continuation rates and improved dosing adherence over time. PrEP 2-1-1 is effective as evidenced by few sero-conversions. In a resource-limited environment, event-driven PrEP should be scaled up as a feasible and effective HIV prevention option among eligible MSM.

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Applicability and Acceptability of Differentiated HIV Service Delivery Among Men Who Have Sex With Men in Kenya: A Qualitative Study

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Background: Men who have sex with men (MSM) are at heightened risk for acquiring HIV because of biological, behavioral and structural vulnerabilities. Despite several interventions targeting MSM populations, a huge gap remains in reaching them to test and linking them to prevention, treatment and adherence services. We conducted a cross-sectional qualitative study to explore perspectives on HIV differentiated service delivery (DSD) for MSM in Kenya.

Material and Methods: The study was conducted in three counties in Kenya: Kisumu, Nairobi and Mombasa from July 2021 to July 2022. A total of 49 in-depth interviews were conducted with: MSM registered for ART (n=15) or registered for PrEP (n=15) and receiving services through community-led organizations, healthcare providers (n=8), programmers (n=5) and county policy makers (n=6). The qualitative data were analyzed using Word and

Excel to perform question and preliminary thematic coding and content analysis.

Results: MSM reported receiving quality healthcare and HIV treatment/prevention services at MSM facilities. Most reported that they were comfortable seeking services within community-led facilities because they were confidential and safe. Compared to experiences at public facilities, almost all MSM currently had good relationships with the healthcare providers, who were trained on friendly, key populations service delivery. Healthcare provider attitudes affected MSM uptake of services. Policy makers, programmers and providers also reported that public facility providers are often not sensitized to the unique needs of key populations and expressed the urgent need for sensitization. Despite mostly positive experiences, some MSM reported shortages of commodities like test kits, condoms and lubricants. MSM were interested in multiple forms of DSD including multi-month dispensing, home delivery and community-based delivery. However, some MSM were not in favor of community-based service delivery due to stigma.

Conclusion: For effective DSD models there is a need to train healthcare providers on key populations friendly service delivery. Community-led drop-in centers need to be well supported with commodities. Stigma and fear of lack of privacy may be a barrier to uptake of community-based DSD models among MSM. Further exploration is warranted on how to provide services to MSM within the community in a way that is acceptable.

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Peer-Led HIV Self-Testing Improves HIV Testing Uptake Among Male Fisherfolk but Self-Testers Still Experience Challenges: Early Results From a Pilot HIV Self-Testing Intervention in Rural Uganda

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Background: Peer-led HIV self-testing (HIVST) has the potential to reach hard-to-reach populations, including men in the fishing communities. However, limited evidence exists on men's HIVST user experiences.

Material and Methods: This analysis uses preliminary data from the ongoing PEer-led HIV Self-Testing intervention for MEN (PEST4MEN) in two fishing communities in rural Uganda. The intervention is led by locally trained men ("peer-leaders") who are selected from existing social networks in the community. After the training, each peer-leader recommended up to 20 men from their social networks for study enrolment. Men were enrolled if they self-reported an HIV-negative or unknown HIV status and last tested for HIV 3+ months from the date of enrolment. Men were administered a baseline interview and requested to pick oral HIV self-test kits from their peer-leaders. Peer-leaders were requested to orient users on HIVST processes, including how to obtain the oral swab and conduct the self-test. Enrolled men were followed at 1-month post-baseline to assess user experiences. Data were analyzed using STATA version 16.0.

Results: Of 361 men interviewed at follow-up, 98.3% (355) obtained HIV self-test kits from their peer-leaders. Nearly all men (99.1%, n=352) used the kits to self-test for HIV. More than 80% of the users were educated on how to obtain the oral swab, how to self-test, and how to read and interpret their HIV self-test results. However, 12.2%

(43) found difficulties in understanding the user instructions; 10.8% (38) found it difficult to read the test results; 7.1% (25) forgot what to do; 6.8% (24) forgot to time the testing exercise, while 6.0% (21) read the results before 20 minutes. When asked if they needed any additional support before, during or after HIVST, 37.2% (131) reported that they needed pre-test counseling; 33.8% (119) needed post-test counseling; 29.8% (105) needed help to read the results, while 29.0% (102) needed help to interpret results.

Conclusion: Our study found that whereas the peer-led HIVST intervention achieved high rates of HIV testing uptake among male fisherfolk, challenges in the use of kits still abound. Additional interventions targeting men with training on proper use of the kits are warranted.

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Characterizing Shifts in Depressive Symptoms for People on HIV Treatment Returning From Incarceration in South Africa

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Background: People returning from incarceration face complex challenges that hamper the continuation of antiretroviral therapy (ART). In sub-Saharan Africa, little is understood about mental illnesses in this population, and how interventions can be developed to reduce attrition from ART. In this study, we compared self-reported depressive symptoms reported by incarcerated adults on ART: 7-60 days prior to release and within the first 30 days of release.

Material and Methods: This is a secondary data analysis of a trial conducted from March 2019 to December 2021, to assess the effectiveness of an intervention to improve the continuation of HIV treatment among 180 adults released from incarceration. We included 73 participants screened for depressive symptoms at baseline and had follow-up data 30 days after release.

Depression was assessed using a 4-point Likert scale from the 9-item PHQ-9 depression screening tool. We used the following interpretation for PHQ-9 scores: 0-4 (no symptoms), 5-9 (mild), 10-14 (moderate), and ≥ 15 (severe).

Results: Overall, the majority of participants (96%) were male; median age was 34 years (IQR: 30-37 years). At baseline 22 (30.1%) had depressive symptoms: mild = 13 (17.8%), moderate = 4 (5.5%), and severe = 5 (6.8%). In the first 30 days of release, 29 (39.7%) reported depressive symptoms – a 9.6 percentage point increase, compared with baseline. Thirty-four of the 73 participants (46.6%) reported shifts in depressive symptoms compared with baseline: 14/73 (19.2%) reported lower levels of depression, and 20/73 (27.4%) reported higher levels of depression (including 16 with no symptoms at baseline). Of the nine PHQ9 domains, there was strong evidence of increases in the proportion who reported experiencing: little interest or pleasure in doing things (24.6% vs. 38.4% $p=0.04$); feeling down, depressed or hopeless (30.1% vs. 45.3%, $p = 0.03$); feeling that they were a failure/let their family down (27.3% vs. 56.1%, $p < 0.001$); and thoughts of being better off dead or hurting themselves (8% vs. 20.5%, $p=0.02$).

Conclusion: Anticipating release is a time of hope and potentially exaggerated expectations that may be discordant with the post-release experiences. Understanding these potential discrepancies may help guide the development of post-release support interventions.

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Delivering Effective Primary Healthcare Services for the Transgender Community: A Multi-Disciplinary Team Approach

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Background: Transgender people are less likely to access healthcare services due to discrimination, marginalization, inadequate healthcare

practitioner knowledge and expertise, and structural barriers. A multi-disciplinary team approach with the necessary sensitisation and clinical competence is required to provide both routine primary health services and gender-affirming health care. We present data from the HIV care continuum from four transgender centres across South Africa.

Material and Methods: Wits RHI established four transgender health centres in 2019 in Buffalo City, Cape Town, Gqeberha, and Johannesburg, with funding from PEPFAR through USAID. These centres provide HIV prevention and treatment, sexual and reproductive health services, tuberculosis screening and referral, hormone therapy; psychosocial assistance, gender-based violence and intimate partner violence support, as well as referrals for legal aid. The multi-disciplinary teams include nurses, doctors, psychologists, social workers, peer educators and community health workers, all of whom are trained in providing gender-affirming healthcare. We analysed routine programme data between October 2019 and December 2022 from transgender people accessing the four centres.

Results: At the end of December 2022, the centres had provided services to over 15,952 transgender individuals and initiated 603 on hormone therapy. Social worker services reached over 1,623 service users, and just over 80 had transitioned to preferred names and gender identities. Over 10,000 individuals received an HIV test, of whom 13% (1360/10,311) tested positive, with 90% of those newly diagnosed initiating antiretroviral therapy. HIV viral load suppression was 88% (481/545). PrEP uptake was 30% (2700/8,651) amongst those who tested negative.

Conclusion: A multi-disciplinary team ensures effective delivery of comprehensive services for transgender people and promotes uptake of services. HIV programmes providing transgender healthcare should consider incorporating psychosocial and mental health support for beneficiaries. Lessons from our centres will inform scale up of accessible and acceptable services for transgender people in the public healthcare system.

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The Unmet Need for Pre-exposure Prophylaxis (PrEP) Among Mineworkers in Peri-Mining Communities in South Africa

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Background: South Africa implemented pre-exposure prophylaxis (PrEP) for HIV prevention in 2016 due to its high efficacy in HIV prevention. Despite this, PrEP uptake among mineworkers is sub-optimal. We aimed to explore PrEP knowledge and uptake among mineworkers in South Africa.

Material and Methods: We conducted a mixed-methods cross-sectional study consisting of a survey with mineworkers from three South African mines. Participants responded to questions on PrEP knowledge and uptake. We used frequencies and proportions to describe the knowledge on PrEP and uptake among mineworkers who participated in the survey. We also conducted qualitative in-depth interviews (IDIs) with mineworkers, health care workers (HCWs) and female sex workers (FSWs). Questions probed on general knowledge about HIV, HIV prevention methods and PrEP uptake. Qualitative data was analysed using the social ecological framework following an inductive and deductive thematic approach. Unmet need was defined as needing, but not receiving PrEP.

Results: We enrolled 551 mineworkers of median age (33 years; IQR:10), majority HIV negative (n=487; 88.4%), male (n=411; 74.6%), and had been employed for ≤ 5 years (n=457; 82.95%). Overall, knowledge on PrEP delivery and uptake among mineworkers was low with (n=66; 11.98%) knowing about PrEP services provided in the mines. Of those aware of PrEP services in the mines, (n=9; 13.6%) reported PrEP use history. From the IDIs, of the 36 participants, most were female (n=28), aged from 24-61 years old. Findings from the IDIs revealed a knowledge gap on PrEP and its use as an alternative to HIV prevention among mineworkers. Some

HCWs revealed that mineworkers requested for PEP over PrEP as an HIV prevention method. In addition, findings revealed lack of PrEP knowledge by some HCWs. In contrast, PrEP was available and accessible to FSWs through community-based organizations.

Conclusion: PrEP knowledge and uptake among mineworkers was low. However, there was accessibility to PrEP for FSWs. Mining companies and CBOs should adopt strategies that increase PrEP awareness which may increase PrEP knowledge and uptake among mineworkers, a key population at risk of HIV infection.

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“There Is No Need to Leave the Beach to Test”: A Qualitative Study of HIV Self-Testing Knowledge, Acceptability, and Willingness to Distribute HIVST Kits Among Fishermen in Western Kenya

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Background: HIV self-test kits (HIVST) can improve HIV testing uptake by offering added convenience and privacy. Yet HIVST uptake remains limited among high-priority populations, including men and mobile populations. We assessed HIVST knowledge and acceptability among highly mobile fishermen in communities along Lake Victoria, Kenya, participating in a social network study to promote HIVST (#NCT04772469).

Materials and Methods: Sixty-five in-depth interviews (IDIs) were conducted with fishermen, including 30 socially-connected men recruited as “promoters”, from 3 fishing communities in Siaya County. Fishermen were purposively sampled based on age (<&>35 years) and community for interviews exploring HIVST knowledge, perceived benefits, and concerns. IDIs were audio-recorded,

translated/transcribed into English, then inductively coded and analyzed by six researchers using a framework approach.

Results: Most participants were >35 years (56%) and married (83%). Nearly all (98%) participants had heard about HIVST and expressed willingness to use HIVST. About half (44%) learned about HIVST via a prior study. Perceived benefits of self-testing included privacy, convenience, and being able to learn one’s status with the freedom to choose when and where to test, which minimized stigma and work interruptions. Few (N=7) participants had used HIVSTs, all of whom reported ease of use; four had tested with their partner. Perceived barriers to HIVST use included fear of HIV-seropositive results, being unsure of use procedures, and fear of stigma if a kit was discovered. Nearly all socially-connected “promoters” indicated they would distribute HIVST to help their friends know their status. They also acknowledged that some men may not be receptive to receiving HIVST due to fear of being suspected of having HIV. Promoters stressed the importance of approaching HIVST discussions strategically and thoughtfully to garner trust and engagement, and felt they needed training to answer friends’ HIVST questions.

Conclusions: While few fishermen had ever used HIVST, this study found high awareness, positive perceptions, and substantial willingness to use and distribute HIVST to other men. There is a need to bolster awareness of the benefits of HIVST, along with thoughtful dissemination that includes promoter training on minimizing stigma and building trust among this high-risk population.

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Tendências de Prevalência do VIH e Comportamentos de Risco Entre Homens que Fazem Sexo Com Homens em Moçambique

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Introdução: Homens que fazem sexo com homens (HSH) são conhecidos por contribuir para o aumento da prevalência do VIH como parte integrante de populações-chave com alta vulnerabilidade ao VIH/SIDA devido a seus comportamentos sexuais e estilos de vida. Moçambique realizou duas rondas de inquéritos bio-comportamentais (BBS) nesta população para compreender a prevalência do VIH e factores de risco associados e este estudo tem como objectivo avaliar as suas tendências.

Metodos: Foi realizado um estudo analítico transversal a partir de dados secundários da primeira e segunda ronda de BBS em Moçambique realizadas em 2011 e 2020, respectivamente. Utilizou-se a amostragem orientada por respondentes. Para permitir a comparabilidade considerou-se as cidades de Maputo, Beira, e Nampula. A mostra foi de 1379 para BBS 2011 e 1580 para BBS 2020. As análises foram realizadas utilizando o software estatístico R. Para investigar se o risco de infecção pelo VIH entre HSH mudou ao longo dos anos utilizou-se um modelo de regressão logística multivariada. A significância estatística foi avaliada ao nível de 5% de significância.

Resultados: O resultados mostram que, em relação à idade dos entrevistados, a prevalência de VIH aumentou significativamente entre HSH de 18 a 19 anos, triplicando de 2011 (1%) a 2022 (3,5%). Combinando as três cidades o risco de VIH foi 40% maior em 2020. O VIH aumentou significativamente para os HSH que tiveram primeira relação sexual anal com a idade entre 15-17 anos. A prevalência de VIH entre indivíduos não circuncidados dobrou significativamente, variando de 11,7% em 2011 para 25,1% em 2020. HSH que afirmaram ter tido diagnóstico ou sintomas de ITS 12 meses antes do estudo têm 60% mais chances de contrair o VIH. Os HSH que testaram para o 12 meses antes do estudo têm 40% menos probabilidade de serem infectados pelo VIH do que aqueles que não fizeram o teste de VIH 12 meses antes do inquérito.

Conclusão: Os resultados apresentam uma oportunidade de melhorar o acesso aos cuidados e tratamento do VIH, apoiar intervenções relacionadas com a prevenção positiva, e reforçar as intervenções sociais e comportamentais para a prevenção da infecção do VIH entre HSH.

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Differentiated HIV Service Delivery for Fisherfolk in Sierra Leone: A Formative Assessment

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Background: In African fishing communities, landing sites are often the hub of fishing activities, social life, and sexual networks, serving as a nexus for HIV transmission. The Sierra Leone Ministry of Health and Sanitation (MOHS) considers fisherfolk a priority group for HIV services but has limited information about their HIV prevalence and risk behaviors. We conducted a formative assessment to examine knowledge, attitudes, practices, and preferences for HIV services amongst fisherfolk in Sierra Leone.

Material and Methods: In May 2022 we collected data from a convenience sample of 113 fisherfolk (fishermen, fishmongers, sex workers, fish processors) at two landing sites, through 12 focus group discussions and surveys. We also conducted 17 in-depth interviews with MOHS staff, fishery unions, and health providers. SPSS was used to generate descriptive statistics from quantitative data and qualitative data were analyzed using thematic coding and content analysis.

Results: Fisherfolk participants were mostly female (56%), married (71%), middle-aged (median 40 years); 64% had a primary education or less. Survey data showed that all had heard of HIV and most (69%) identified as being at no or low risk of HIV acquisition despite 42% ever being tested for HIV, 61% not knowing a regular partner's HIV status, 66% not using condoms in the past month and 48% reporting a prior sexually transmitted infection.

Only 8% had heard of PrEP. Thirteen (12%) reported being HIV positive, but only two were currently on treatment. FGD and KII data confirmed low HIV awareness and risk perception and participants noted that condom distribution and HIV education programs had not taken place in the fishing communities for years. Fisherfolk preferred to receive HIV prevention, testing, and treatment services from nurses and wanted these services to be located near landing sites. Key stakeholders supported increased attention to fisherfolk as a key population in Sierra Leone.

Conclusion: Fisherfolk at two landing sites in Sierra Leone had low HIV-risk perception, high HIV-risk behavior, high self-reported HIV prevalence, and low engagement in HIV care. It will be important to actively involve them in the design of differentiated service delivery strategies to ensure uptake, retention, and positive health outcomes.

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Pediatric Programme Implementation on the Frontline: What Matters Most

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Background: In November 2022, the Pediatric Adolescent Treatment Africa (PATA) annual 3-day summit "Ending AIDS in Children, Adolescents and Young People- a Roadmap to 2030" attracted 1580 participants from 32 countries, attending either in person at one of the 12 African country satellite hubs or virtually via PATA's Linking and Learning hub. This regional summit, aimed at frontline health care providers, provides a platform to hear and appreciate voices from the field, exchange work experiences and models, and facilitate dialogue among health care providers and policy representatives.

Material and Methods: At registration, frontline health care providers were asked to complete an online survey on their perceptions of pediatric program strengths, weaknesses, opportunities and threats.

Results: 419 health care providers (female 62%, male 38%), representing 17 African countries, completed the survey. Responders included mostly nurses (40%) and lay counsellors/peer supporters (25%), with the remainder comprising of doctors, community health workers, clinical officers, pharmacists, social workers. Health care worker capacity building (46%) and a respectful and appreciative work atmosphere (39%) were perceived as more critical to pediatric program success than physical resources (9%). Training in psychosocial skills (including counselling, disclosure, gender based violence and violence to children) to be able to deliver care in a non-judgmental, non-discriminatory, gender-sensitive manner outranked (54%) training needs in clinical competencies (34%). Implementation barriers to effective HIV service delivery for children and adolescents were diverse including scant commodities, equipment and human resources (24%), inadequate in-service training on new guidelines (18%), lack of task shifting (13%), inadequate linkage systems and poor governance (13%).

Conclusion: The results of this survey point to the need to harness the most valuable resource in our response to the HIV epidemic – frontline health care workers. Meeting the emotional, social, mental and spiritual needs of health care workers will in turn strengthen their ability to provide meaningful care and support.

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High-Risk Human Papillomavirus Genotype Distribution Among Women With Gynecology Complaints in Northwest Ethiopia

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Background: Human papillomavirus (HPV) genotypes differ by geographic location. With the advent of HPV vaccination and HPV-based cervical screening tests in Ethiopia, nationwide data set on the genotype distribution of HPV among women has paramount importance in the fight against cervical cancer. However, there is limited data in this regard in the northwest part of the country.

Material and Methods: A health facility-based cross-sectional study was conducted at Felege Hiwot Comprehensive Specialized Hospital (FHCSH), Bahir Dar - Ethiopia. Women aged >30 years who visited the hospital gynecology unit from 01 March 2019 to 30 October 2021 were included. A senior gynecologist collected cervical swabs for HR-HPV detection using the Abbott Alinity m system (Abbott Molecular, Des Plaines, IL, USA), and extended genotyping was carried out with the INNO-LiPA HPV Genotyping Extra II assay as per the manufacturer protocols at the Institute of Virology, Leipzig University Hospital, Germany.

Results: We included 355 women with a mean age of 46.4+11.4 years. The majority of the participants, 277(79.4%) were sexually active before the age of 18 years and 180(51.6%) had multiple sexual partners. Forty-eight (13.5%) of the participants were HIV positive. The proportion of HR-HPV was 53.0% (n=188; 95%CI: 47.8-58.1%). From these samples, 13 different HR-HPV types with a total of 258 sequences were identified. The detection of HR-HPV increased significantly with an increase in the age of the participants. The predominant identified HR-HPV was HPV16, 50.4% (130/258; 95%CI: 29.4-39.2%) followed by HPV31 (9.7%), HPV33 (8.5%), HPV39 and HPV68 each (5.8%) and HPV18 (4.7%). Of the total HR-HPV-positive women, 23.9% (45/188) were infected with two and more (up to five) multiple HR-HPV types. All HPV16, HPV18, HPV35, and HPV45 genotypes (as a single or in coinfections) were found to be associated with either high-grade lesions or cervical cancer.

Conclusion: HR-HPV infection was reportedly higher among women in the present study area. Based on our findings, we strongly recommend the nonavalent HPV vaccine for immunization and any HPV-based screening method to take into consideration the predominant genotypes circulating in the country. The role of multiple HPV infections in high-grade cervical lesions entails further study in Ethiopia.

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A Higher Rate of Non-viral Suppression Among Children, Adolescents and Young-Adults in Cameroon: A Snapshot From the Ten Regions of Cameroon

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Background: To achieve the global AIDS control targets, achieving and maintaining virological control is key, especially among the more vulnerable populations like children, adolescents and young adults. We have evaluated non-viral suppression (nVS) in a large and nationally representative sample of ART-experienced children, adolescents and young-adults in Cameroon.

Material and Methods: A cross-sectional study was conducted on viral-load (VL) performed between July-2021 and June-2022 among children (<10 years), adolescents (10-19 years) and young-adults (20-24 years). Children and adolescents were further divided in two categories each (<5 & 5-9 years; and 10-14 & 15-19 years; respectively). HIV RNA-load measurements were performed in the reference laboratories on samples from all the regions. Non-VS was defined as VL \geq 1000 copies/mL; and predictors of non-VS were investigated.

Results: Overall, 7558 individuals (children [11.9%], adolescents [31.7%], young-adults [56.4%]), mainly females (73.2%) were analysed. Regarding ART-regimen, 74.2% were on DTG-based ART (3.7%, 25.0%, 78.4%, 80.4% and 82.9%, respectively for <5, 5-9, 10-14, 15-19 and 20-24 years). Overall VS [95% CI] was 82.3% [81.5%-83.2%]. Non-VS significantly increased with decreasing age (39%, 29.1%, 20.8%, 18.6% and 13.5% respectively for <5, 5-9, 10-14, 15-19 and 20-24 years, $p < 0.001$). A higher rate of nVS was observed in males versus females (21.8% vs. 16.2%, $p < 0.001$). According to regimen, rate of non-VS was 14.5% for TDF+3TC+DTG, 17.2% for TDF/3TC+EFV/NVP and 36% for ABC+3TC+ATV/LPV, $p < 0.001$. According to treatment duration, a lower nVS (14.7%) was observed at 24 months, compared to 18.3% at 6 months and 19.5% at 36 months; $p < 0.009$. Generally, non-VS on DTG-based regimen was 14.9% versus 29.6% in non-DTG based-regimens. At univariate analysis, age, sex, regimen, ART-duration, NRTI-backbone and non-DTG based regimen were significant. At multivariable level, after adjusting for these variables, the only predictors of nVS were lower age (aOR [95% CI]: 1.217 [1.139-1.301], $p < 0.001$) and DTG-based versus non-DTG based-regimen (aOR [95% CI]: 0.752 [0.639-0.885], $p = 0.001$).

Conclusion: In Cameroon, about 2/10 children, adolescents & young-adults are not virologically suppressed. Non-VS was independently predicted by younger age and non-DTG containing regimens. This underscores the need to rapidly scale-up DTG-based regimen among these populations.

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Prevalence and Profile of Antiretroviral Genotypic Resistance Mutations Among HIV-1-Infected Patients With Virological Failure: Results From the DREAM Programme Monitoring Testing

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Background: Human Immunodeficiency Virus (HIV) is continued to be a major public health problem in low-income African countries, particularly in Mozambique. For the last decade, access to Antiretroviral Therapy (ART) and its impact in improving quality of life and reducing HIV-related morbidity and mortality has significantly been improved in Africa. Nevertheless, the emergency of HIV drug resistance (HIVDR) has posed challenges in achieving optimal ART treatment outcomes in countries where genotypic testing is not available and is alarmingly increasing both globally and in Africa in general. Data and studies on the prevalence and diversity of HIVDR mutations are, however, still limited in Mozambique.

Material and Methods: Results from the routine HIVDR testing were obtained from 67 ART HIV-1 infected patients with virological failure (VL > 1000 copies/mL) enrolled in a free ART protocol at the DREAM health centers. HIV-1 RNA viral load levels were measured with the Abbott Real-Time HIV-1 assay. HIVDR genotyping, was performed with RT-PCR, using an In-house nested PCR technique. Viral nucleic acids were extracted from plasma specimens with QIAamp[®]Viral RNA kit (Hidden, Germany) according to manufacturer's instructions. Sanger Sequencing was performed externally at Ingaba Biotechnical Industries (Pretoria, South Africa). DNASTar Lasergene software was used for sequence analysis and interpretation, and antiretroviral resistance mutations were analysed in the Stanford HIVDR Database. Data variables were descriptively summarized with number and percentage of each category.

Results: The mean age and HIV viral load of the tested patients was 32 ± 16 and HIV 115631.26 copies/mL. 44 (65.7%) out of 67 tested patients had one or more major HIVDR-associated mutations. Nucleoside analogue reverse transcriptase inhibitor (NRTI) and non-NRTI resistance mutations were observed in 18 (26.9%) and 37 (55.2%) patients, respectively. Protease inhibitors resistance

mutations was found in 15 (22.4%) patients. There were 14 (20.9%) with combined NRTI and/or non-NRTI, and PI mutations.

Conclusion: Our results show high rates of resistance in the HIV-1 infected patients with virological failing ARV treatment, and confirms the epidemiological findings of high prevalence of non-NRTI resistance among HIV-1 infected patients. HIVDR testing and surveillance capacity in Malawi should be prioritized as scale-up.

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Introduction of Near Point of Care Testing Platform for Early Infant HIV Diagnosis in Nigeria

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Background: In Nigeria, only 27% of HIV-exposed infants (HEI) received early infant diagnosis (EID) by 2 months of age in 2021. The median turnaround time (TAT) of laboratory results ranged from 28 - 60 days. Multi-disease testing using a polyvalent near point-of-care (POC) testing platform provides new opportunities for reducing the TAT for EID. This analysis describes the use of GeneXpert platform to improve the efficiency of EID in Akwa Ibom and Taraba States, Nigeria.

Material and Methods: The USAID-funded Reaching Impact Saturation and Epidemic Control (RISE) project used GeneXpert machines (previously only used for TB diagnosis) for EID. In collaboration with relevant stakeholders, we selected 8 GeneXpert sites across Akwa Ibom (2), and Taraba (6) States, and networked 83 other facilities using the hub and spoke approach. RISE trained and mentored laboratory personnel to test dried blood spot (DBS) specimens using GeneXpert at sites, and monitored TAT and return of results weekly. We analyzed data from 83 spokes health facilities and 8 GeneXpert hub sites before (July to September

2022) and after (October to December 2022) the intervention.

Results: Before the intervention 165 DBS samples [(51%(84/165) (<2 months), 49%(81/165) (2-12 months)] were received at 2 molecular laboratories with 64% results returned, and a median TAT of 40 days. Post-intervention, 506 DBS samples [(60% (305/506) (<2 months), 40%(201/506) (2-12 months)] were received at 8 GeneXpert sites with 88%(446/506) results returned; median TAT of 2 days. There was a 24% increase in the proportion of results returned and a 95.2% reduction in TAT. EID uptake increased by 21.9% at < 2 months (67.9% (57/84) before and 89.8%(274/305) post-intervention). All results were returned to the caregivers (100%); the positivity was 5.3% (3/57) for <2 months and 2.1% (1/48) for 2-12 months before the intervention and 2.9% (8/274) for <2 months and 5.8% (10/172) for 2-12 months after the intervention. The linkage to treatment was 100% before (n=4) and after the intervention (n=18).

Conclusion: The implementation of near POC EID using the GeneXpert increased access to EID, improved early case identification, and reduced TAT.

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Genetic Diversity of HIV-1 and Its Effect on the Residual Risk of Infection in the Gabonese Transfusional Setting

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Background: The transmission of viruses during blood transfusion is a major public health problem that threatens transfusion safety, nearly 5 to 10% of HIV infections in Africa are transmitted by blood transfusion. In Gabon, the current donation screening strategy does not allow better discrimination of HIV-1. The objectives were to: 1) Estimate the residual risk at the National Blood Transfusion Center of Gabon, 2) Characterize the

viral genotypes in manifest and residual infection and 3) Determine the threshold for the transmission of major resistance mutations in naive donors.

Material and Methods: An analytical cross-sectional study was conducted from June 2020 to September 2021 among 381 donors from the NBTC in Gabon. Sampling was convenient and the plasma was obtained in EDTA tubes. ELISA (4th generation) and chemiluminescence techniques were performed at the NBTC for the detection of anti-HIV1/2 antibodies and p24 antigen. Molecular techniques (Real-time PCR, sequencing, and molecular phylogeny) were carried out at CBIRC. The data was analyzed by SPSS and EPI info. Graphs were drawn using Microsoft Excel 2016.

Results: Of 381 donors included in the study, 359 donors were seronegative, of which 5 samples were found to be positive by Real-time PCR. That is a residual risk of 648 per 1,000,000 donations, which was high compared to that obtained in 2014 (64.7 per 1,000,000 donations) at the NBTC. The prevalence of residual infection was also high at 1.4%. The strains identified in naive donors were CRF02_AG (50%), A1 (18.8%), G (12.5%), CRF45_cpx (12.5%) and F2 (6.2%). The transmission threshold for drug resistance mutations was high at 25% (K103N, E138G, L210W and M46L) compared to the critical threshold (10%) set by the WHO. HIV-1 strains had no significant effect on the residual risk ($P = 0.30$) despite a significant circulation of HIV-1 strains in the Gabonese transfusional setting.

Conclusion: The residual risk remains a concern, requiring a strengthening of the screening strategy for donors at risk. In addition, this transmission is accompanied by a considerable risk of transmitting HIV-1 drug resistance mutations to the recipient. The implementation of nucleic acid testing would improve blood safety in transfusional setting.

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Viral Load Monitoring Optimization Amongst People Living With HIV in Benue State, Nigeria: Strategies, Successes, and Challenges

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Background: In furtherance of Nigeria's national goal of ending the AIDS epidemic by 2030 and the country's adoption of the UNAIDS goals 95–95–95, the third goal requires that 95 percent of all people on antiretroviral therapy (ART) achieve and maintain virologic suppression, it's critical to improve adherence for all patients and monitor viral load to achieve and maintain this level of virologic suppression.

Material and Methods: We retrospectively assessed the impact of APIN viral load monitoring surge processes, strategies, successes, and challenges in Benue over 5 years (2018 - 2022) using a desk review. We triangulated data from the DHIS, Nigeria Medical Record System, and National Data Repository. We combined both brainstorming and fishbone analysis to x-ray the challenges faced by the HIV program before viral load monitoring optimization. The root causes were categorized into demand-related, health facility factors, client-related factors, clinical use of results, and reference laboratory factors which guided the development of strategic interventions. We outlined the processes during the implementation and enumerated the implementation strategies and innovations deployed to optimize viral (VL) load in Benue State. We also aggregated data using the standard APIN monitoring and Evaluation data flow and presented our findings in charts and tables.

Results: The interventions resulted in a 61% increase in viral load coverage from 36% in 2018 to 97% in 2022, with a corresponding, sustained increase in viral load suppression amongst PLHIV on treatment from 88% to 96% within the same period. During the period, the number of PLHIV

eligible for VL increased from 140,201 to 228,462. There was a percentage increase in clients with undetectable viral load from 51% to 92 with a corresponding decrease in clients with low-level viremia from 48.82% to 6.9% over the same period. The viral load coverage improved from 47% to 98% with an increase in viral load suppression rates from 55% to 91% in the pediatrics and adolescents population at the end of 2022.

Conclusion: The APIN program has made significant progress in viral load optimization in Benue State using strategies such as capacity building, health systems strengthening, and data quality management.

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Changes in Weight Gain, Body Mass Index and Lipid Profile Among People Living With HIV Initiating on Dolutegravir in Zimbabwe

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Background: Despite the high efficacy of dolutegravir reported so far, concerns about subsequent weight gain, dyslipidemia and related metabolic complications are emerging. We evaluated changes in weight, body mass index (BMI) and lipid profile among people living with HIV (PLHIV).

Material and Methods: A prospective cohort study was conducted among ART naïve and ART defaulted PLHIV adults (>18 years old) initiating on dolutegravir, between November 2021 and October 2022. Participants were attending care at Parirenyatwa outpatient Hospital, one of the largest HIV clinics in Harare, Zimbabwe. Social demographics, weight gain, BMI and lipid profile were measured at baseline, prior to ART initiation and at 6 month follow up. Paired t-test was used to determine changes in lipid profile (Total cholesterol (TC), high and low density lipoproteins (HDL and

LDL) and triglycerides (TG)) at ART initiation and at 6 months follow up. Linear regression models were used to determine associations between lipid outcomes and their potential predictors. All statistical analysis was performed using SPSS 22.0 software.

Results: A total of 131 participants were enrolled, of which 74(56%) were females and 106 (81%) were ART naïve. The median (IQR) age of the participants was 39 (31-48) years. Among all participants, there was a significant increase ($p<0.001$) in mean weight (from 61.8 kgs at baseline to 67.5 kgs at 6 month follow up), BMI (from 22.8 to 25.1 kg/m² at 6 months), with women showing the greater weight gain, TC (from 2.90 to 3.30mmol/l) and HDL (from 0.75 to 1.10 mmol/l) whilst a significant decrease in TG was observed (from 1.30 to 0.99 mmol/l). Overall, there was a significant increase in TG among older participants (>40 years, $p<0.001$) and a significant decrease in LDL among male participants ($p<0.001$). Furthermore, there was a significant increase in TC and LDL and a decrease in TG in the overweight group (BMI >25), $p<0.001$.

Conclusion: Elevated weight gain, BMI and dyslipidemia among PLHIV on dolutegravir are concerning safety signals. Implications for the development of metabolic comorbidities should be monitored, particularly if bi-annual weight gain persists during continued follow-up on dolutegravir. This calls for pro-active pharmacovigilance in Africa.

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Performance of Cobas 6800 Platform for Early Infant Diagnosis of HIV in Babies Born From HIV-Positive Mothers

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Background: Early infant diagnosis (EID) of HIV is a key recommendation of the WHO to identify HIV-infected children and link them early to

antiretroviral therapy (ART). Dried blood spots (DBS) allow the collection, stabilization, and transportation of whole nucleic acid without needing a cold chain. DBS has been used as the conventional sample in many low-income settings and allowed a rapid expansion of HIV-EID in many African countries, with consequent good clinical outcomes. This study aimed to evaluate the performance of DBS on the C6800 platform for HIV-EID in Maputo province-Mozambique.

Material and Methods: A prospective cross-sectional study was conducted between January–December 2022 in six health facilities with high demand for HIV-EID testing in Maputo city and province. HIV-exposed children between 1–18 months of age were included in the study. A minimum of three circles of DBS were collected from each participant and sent to Instituto Nacional de Saúde for routine HIV-EID testing using CAP/CTM96. For the study, remnant specimen was used for HIV-EID testing using Cobas 6800 platform. Demographic and clinical information were collected through structured forms. Sensitivity, specificity, predictive positive and negative values (PPV and NPV) were measured to estimate the accuracy of results.

Results: A total of 591 children (mean age of 2.41 months, 49.91% female) on Nevirapine-based prophylaxis were considered in this evaluation. Concordant results were observed in 588/591 (99.41%) samples (74 positives, 514 negatives) tested in the CAP/CTM96 and C6800 platforms. One positive sample in the CAP/CTM96 (limit of detection (LoD) ≥ 300 copies/ml) had a negative result in the C6800, and 2 positive samples in the C6800 (LoD ≥ 225 copies/ml) had negative results using CAP/CTM96. The sensitivity and specificity between the results of both platforms were 98.67 (92.79 – 99.97)% and 99.61 (98.61 – 99.95)%, respectively. The PPV and NPV were 97.0% and 100%, respectively.

Conclusion: There was high concordance between DBS results using CAP/CTM96 and C6800. This suggests that DBS can remain as conventional sample for HIV-EID in low-income settings even using the C6800. The discordances identified are likely associated with low viremia in samples and LoD. An extended evaluation of the impact of lower LoD is needed.

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Assisted HIV Self-Testing Effectively Reaches Key Populations in Western, Southern, and Eastern Provinces of Zambia

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Background: HIV case identification in Zambia remains a challenge, particularly among high-risk groups such as key populations (KPs) due to stigma and fears of criminalization. HIV self-testing (HIVST) was introduced in 2017 to improve access for these high-risk groups. We describe the use of HIVST among KPs in Zambia, as well as subsequent linkage to HIV care and treatment.

Material and Methods: From October 2021 to September 2022 the Community Impact to Reach Key and Underserved Individuals for Treatment and Support (CIRKUIITS) project conducted community distribution of HIVST kits via 13 KP safe spaces in Eastern, Southern, and Western Provinces of Zambia. CIRKUIITS implemented community health worker (CHW) assisted HIVST among KPs, including female sex workers (FSWs), men who have sex with men (MSM), transgender people (TG), and people who inject drugs (PWID). All positive test results were confirmed, per the national algorithm, and linked to antiretroviral therapy (ART). We conducted a retrospective cohort analysis of routinely collected KP-subpopulation disaggregated HIVST data using secondary analysis to examine uptake of assisted HIVST among KPs and linkage to ART and pre-exposure prophylaxis (PrEP).

Results: From October 2021 to September 2022, 1,747 KP clients were tested using CHW-assisted HIVST with 97% (1,689/1,747) results returned overall; 97% were returned among FSW, 95% among MSM, 97% among PWID, and 98% among

TG (Figure 1). HIVST identified 7.2% (122/1,689) of the results as positive, and all clients were linked to ART after confirmation of their HIVST results (100% linkage). Of the 1,567 clients testing HIV-negative, 10% (162/1567) were initiated on PrEP.

Conclusion: Assisted HIVST improves uptake and return of results among KPs in Zambia, with notably high linkage to ART and moderate linkage to PrEP. Assisted HIVST may be instrumental in reaching KPs with HIV testing services and enhancing both results return and linkage to treatment and prevention services.

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Can HIV Low Level Viremia Predict Future Raised HIV Viral Load? A Retrospective Cohort Analysis From Lusaka

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Background: HIV RNA viral load (VL) remains the most reliable marker to assess HIV treatment success to date. The Zambia 2018 HIV guideline define viral load suppression as any VL test result of below 1000 copies/ml. The guideline also recommends that all HIV patients on Antiretroviral Treatment for at least 6 months with VL above 1000 copies/ml should be enrolled on enhanced adherence counselling (EAC). We hypothesized that patients who develop unsuppressed VL above 1000 copies/ml could have had a progressive increase in their VLs from previous tests.

Material and Methods: We extracted data from electronic medical records of patients who had at least one VL result documented between 1st April 2018 and 31st January 2022 in Lusaka. We conducted retrospective cohort analysis to determine the proportion of patients with latest VL above 1000 copies who had recorded LLV - defined as VL copies/ml between 60 and 999 - on their previous VL lab tests. Secondly we extracted demographic characteristics of patients with LLV and describe associated factors.

Results: 220,010 VL records were extracted of which 8610 (3.9%) had an unsuppressed VL result from their last VL test. There were 4836 (3.4%) female and 3774 (4.7%) unsuppressed males. LLV accounted for 29 % of all previous VL. LLV among pediatric and adolescents varied from 31% in those aged 15 – 19 years to 50% among the 1 – 4 years. Rufunsa District reported higher proportion of LLV at 37.6%. Patients on ART for 6 to 12 months had LLV at 35% VS 22% among those on treatment for 13 to 18 months.

Conclusion: Our analysis revealed that 29% of patients in Lusaka province develop low level viremia prior to have an unsuppressed viral load. Residing in Rufunsa, aged below 19 years and being on ART for 6 to 12 months were found to be associated with LLV prior to develop an unsuppressed VL. While further studies are required to establish other predictors of LLV, it would be justifiable to provide adherence counseling to patients with VL between 60 and 999 copies to prevent occurrence of viral mutation.

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Adverse Birth Outcomes Associated With HIV Infection in Pregnancy Despite Successful ART

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Background: Antiretroviral therapy (ART) use during pregnancy decreases the risk of HIV infection in the infants. However, even controlled HIV infection may impact pregnancy outcomes depending on timing of ART initiation and HIV viral load (VL). We studied the relationship between ART exposure in pregnancy and birth outcomes in women carefully characterized by their VL levels during pregnancy.

Material and Methods: In a longitudinal cohort study in Malawi, we enrolled and followed up pregnant women who presented for their first antenatal care (ANC) visit between 20 and 36 weeks of gestation and met the following criteria: HIV uninfected (HU); pregnant women with HIV infection, on ART \geq six months before conception, undetectable VL at enrollment and delivery (HIV-lo); and pregnant women with HIV infection, initiated ART at enrollment, VL \geq 10,000 copies/ml at ANC (HIV-hi). At delivery, we evaluated low birth weight (LBW, $<$ 2500g), preterm birth (PTB, $<$ 37 weeks gestation), small for gestational age (SGA, $<$ 10th percentile for gestation), fetal death (pregnancy loss $>$ 28 weeks gestation) and early neonatal death (NND, $<$ 7 days of life) individually and as a composite outcome. We used multivariate regression analysis to evaluate the impact of HIV infection during pregnancy and timing of ART initiation on adverse outcomes. Reported relative risks (RR) were adjusted for parity.

Results: Among 517 pregnant women (141 HU, 293 HIV-lo, 83 HIV-hi), prevalence of adverse birth outcomes was 30.5%. The risk was higher among HIV-lo (prevalence 28%, RR 1.4, 95% CI 1.0-1.9) and HIV-hi (31.4%, RR 1.4, 95% CI 0.9-2.1) women compared to HU women (26.2%). Specifically, the risk of SGA and either fetal death or early NND was two-fold higher in HIV-lo (RR 2.0, 95% CI 1.2-3.4, and RR 1.8, 95% CI 0.6-4.9) and HIV-hi (RR 2.0, 95% CI 1.1-3.7 and RR 2.4, 95% CI 0.7-7.5) arms than HU arm, respectively. PTB risk was not associated with HIV exposure status.

Conclusion: Pregnant women with HIV infection have a higher risk of adverse pregnancy outcomes than pregnant women without HIV infection. Birth outcomes were similar among women who had suppressed viral load throughout pregnancy and those that initiated ART during pregnancy.

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Improving Access to Testing for Pregnant Women Using the Hub and Spoke Clustering Approach in Anambra State, Nigeria

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Background: The elimination of HIV transmission from mother to baby requires that 95% of pregnant women (PW) access antenatal care (ANC), testing, and antiretroviral coverage. With a HIV prevalence of 2.2%, Anambra is among the 13 states contributing 70% of the HIV burden among PW in Nigeria. This paper examines the efforts of the Global Fund (GF) through FHI 360 to increase access to HIV Testing Services (HTS) for PW in the state.

Material and Methods: The study is a cross-sectional design that examines the effect of the cluster approach used to group unsupported health facilities (HFs) and traditional birth attendant (TBA) centers into clusters (spokes), and linkage to larger GF-supported HFs in Anambra (hub). The clustering involves the use of mentor mothers, who collaborate with the TBAs and unsupported HFs in providing HTS for PW in the clusters, identification, and linkage of distant primary HFs to hubs. We utilized a before-and-after approach to assess the effect of this intervention. Data was analyzed using the interrupted time series and Chi square statistic.

Results: Prior to January–March, 2021, only 9,265 PW (2.9% of the total expected number of 316,178 PW in the state in 2021) were tested for HIV, with 63 positives identified. With the implementation of the cluster model in April 2021, this increased to 201,322 (64%) by December 2021, with the positives increasing to 413 (0.2%). The testing improved in 2022, with almost all the PW expected in the state reached with HIV testing, resulting in a significant increase in PW reached with HTS ($X^2 = 164.4$, $p < 0.05$). The interrupted time coefficient indicates no difference in PW reached with HIV testing before the intervention due to a decrease in testing by 0.005 points on the index. The trend changed for the treatment coefficient post-intervention, leading to a significant positive effect and increasing the number of PW tested for HIV by 0.54 points on the index.

Conclusion: Access to HTS can be enhanced by ensuring that more PW receiving care in the

community are reached using a cluster approach. This is a recommended strategy for scaling up PMTCT.

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HIV Drug Resistance Profiles at Early Infant Diagnosis, Pretoria

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Background: Prevention of mother-to-child transmission (PMTCT) of HIV is a global priority. However, there is an increase in HIV drug resistance (HIVDR) against non-nucleoside reverse transcriptase inhibitor (NNRTI)-based PMTCT among infants who acquire HIV. A greater understanding on HIVDR in infants could lead to optimal regimen choice and the use of non-NNRTI-based regimens. The study aimed to characterize HIVDR mutations in infants younger than 4 months old.

Material and Methods: This is an on-going, laboratory-based, cross-sectional study on the HIVDR profiles of infants in the Tshwane region and surrounding metropolises. Nucleic acid was extracted, amplified and Sanger sequenced. Analyses of sequences was done with the online Stanford HIVDR database. Resistance profiles were then compiled to determine the most common HIVDR mutations within the population.

Results: A total of 116 dried blood spot samples from infants were characterized for HIVDR associated mutations, and 47% (68/116) had HIVDR mutations. The most common major mutations detected were NNRTI mutations (K103N [28%], Y181C [6%] and V106M [5%]). A major nucleoside reverse transcriptase inhibitor mutation, M184V (4%), was also detected. Also, major protease inhibitor (PI) mutations (V82A [2%], M46L [1%], I47IV [1%] and M46MI [1%]) were detected. The most common accessory mutations detected were NNRTI E138A (9%), PI K20R (15%) and T74S (9%).

Conclusion: The detection of major NNRTI and PI mutations emphasizes the need for constant surveillance of HIVDR, and a shift towards

antiretrovirals with a high genetic barrier to resistance, such as integrase strand transfer inhibitors.

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Differentiated Service Delivery Model Utilization Among Children and Adolescents Living With HIV in Uganda, 2020–2022

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Background: HIV programs continue to struggle with providing care to children and adolescents living with HIV (CALHIV). Differentiated service delivery models (DSDM) are client-centered approaches to make it as convenient as possible for clients to stay in HIV care. Although DSD for HIV treatment was focused on clinically stable PLHIV, there is a need to expand DSD for all PLHIV including CALHIV. Little is known about DSDM utilization by CALHIV in Uganda. We assessed trends in DSDM utilization from January 2020 to December 2022.

Material and Methods: DSDM in Uganda comprise two community-based models [community-client-led ART distribution and community drug distribution points] and three facility-based models [facility-based individual management (FBIM), facility-based group management (FBGM), and fast-track drug refill (FTDR)]. They are also classified by the level of follow-up and support provided as 'intensive' (FBGM and FBIM) or 'less intensive' (community-based models and FTDR). We extracted data from the District Health Information System for the DSDM used during the study period to calculate the proportion using each DSDM by quarter. We assessed trends using the chi-square test for trends.

Results: Among 89,409 CALHIV active on ART with data in the last quarter of 2022, 69% were aged <15 years and 53% were female. Over 12 quarters, the proportion of CALHIV records with DSDM data

ranged from 74-99%. Of those with data, almost all (96-100%) enrolled in facility-based models. The less intensive facility-based model (FTDR) utilization ranged from 14-27%; utilization of intense models ranged from 69-86%. The utilization of FTDR increased from: 0% to 12% among children <10 years old, 14% to 29% among adolescents 10 to 14 years old, and 19% to 32% among adolescents aged 15 to 19 years old ($p < 0.001$). The utilization of FTDR decreased from 63% to 40% in privately-owned facilities.

Conclusion: The increase in FTDR enrolments shows that CALHIV clients were open to taking up other client-centered models apart from the FBIM. Enrolments in community DSDM were low because children were considered unstable and ineligible for community DSDM. Inclusion of eligibility of CALHIV into other DSD models may improve client-centredness and ultimately continuity of HIV care and treatment services.

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Improved Virologic Suppression in Children Living With HIV Under the Age of 5 in Tanzania After the Initiation of a Viremia Clinic and Pediatric Dolutegravir

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Background: Children living with HIV (CLHIV) below the age of 5 years (<5) often have worse treatment outcomes and lower rates of virologic suppression (VS) than older children. Some pediatric centers have utilized resources to address possible barriers to VS including socioeconomic factors, stigma, poor peer or parental support, medication tolerability, etc.

Material and Methods: Data was extracted from December 2021 to November 2022 to investigate the outcomes of an interdepartmental Viremia

Clinic started in February 2022 to improve clinic VS. The study included active clients at the Baylor College of Medicine Children's Foundation - Tanzania clinic in Mbeya who had their viral load (VL) measured within the previous 12 months and had been on antiretroviral therapy (ART) for ≥ 6 months. Per national guidelines, the first-line ART regimen for children <20kg was abacavir-lamivudine-lopinavir/ritonavir (ABC-3TC-LPV/r) and dolutegravir (DTG) 50mg could be used if ≥ 20 kg. Due to drug stock-outs, only LPV/r granules were available for most of the study period. Widespread use of pediatric DTG (dispersible tabs) began around August 2022.

Results: VS in <5 was 80.9% (18/94) in December 2021 while the overall clinic suppression rate was 92.4% (1296/1402). Compared to ages ≥ 5 years, <5 VS was significantly lower ($p < 0.0001$). <5 VS reached a nadir of 76.8% (76/99) before rising to 92.2% (94/102) by November 2022, surpassing the overall clinic VS of 91.7% (1239/1351). In April 2022, the percentage of those failing who were <5 reached a maximum of 20.8% (21/101) but then fell to 7.1% (8/112) by November 2022.

Conclusion: Despite historical challenges in <5, we saw sustained improvements in VS rates that improved after the initiation of a Viremia Clinic and pediatric DTG. Moreover, clinic-wide rates of VS have begun to improve, though less dramatically than in <5.

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Prevalence of HIV Drug Resistance Among Young Children Failing Antiretroviral Treatment in Lusaka, Zambia

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Background: To support antiretroviral therapy (ART) optimization in young children, the Centre for Infectious Disease Research in Zambia (CIDRZ) supported HIV genotyping in children aged ≤ 5 years

with viral load ≥ 1000 copies/ml to identify HIV drug resistance. We describe the resistance rates and mutations among children failing treatment.

Material and Methods: We reviewed laboratory genotyping data processed between 2018 and 2019 among children aged ≤ 5 years, who were failing treatment according to national guidelines. We used an in-house Sanger sequencing method at the ISO15189 accredited CIDRZ Central laboratory. Results were analyzed by the Stanford HIV drug resistance algorithm v 8.9-1. We calculated frequency of any resistance mutation and resistance by drug class. We estimated proportion of and time to treatment change after genotyping for those with both timepoints documented. This was a cross-sectional descriptive study of programmatic data for clients receiving standard of care treatment in the Lusaka public sector health facilities.

Results: Between August 2018 and April 2019, 106 viral load samples were sequenced. Median age was 19 months (Q1,Q3: 9,33) and 55 (52%) were female. Median time on treatment at genotyping was 18 months (Q1,Q3: 9,26). Overall, 89 (84%) children had at least one resistance mutation. By drug class, 69% had Nucleoside Reverse Transcriptase Inhibitor (NRTI) mutations, 62% Non-Nucleoside Reverse Transcriptase Inhibitor (NNRTI) mutations and 2% had Protease Inhibitor (PI) mutations. NRTI mutations were M184V (61%), L74V (23%), Y115F (18%), M41L 5% and D67N 3%. ABC resistance was 67%, 3TC 65%, TDF 6% and AZT 2%. NNRTI mutations were K103N (26%) and Y181C (21%), conferring resistance to NVP (58%), EFV (57%), RPV (45%) and ETR (34%). PI resistance was estimated at 2% (ATV 2% and LPV 2%). Thirty-five percent had a treatment change with median time to treatment change after genotyping being 6 months (Q1,Q3: 6,11).

Conclusion: There was early treatment failure among young children on ART with a high proportion of resistance mutations to first line drugs of ABC, 3TC and NVP/EFV and low levels of resistance to PIs. Programmes need to respond promptly to confirmed treatment failure, expedite transition to DTG-based regimens and implement strategies to improve viral suppression.

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Differentiated Service Delivery for Pregnant and Breastfeeding Young Mothers Living With HIV to Prevent Mother to Child Transmission: Lessons Learned From an ART Clinic in Malawi

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Background: The syndemic of early motherhood and HIV may increase the vulnerability of adolescent mothers and their children, especially in resource-constrained settings. Lighthouse provides special differentiated service delivery (DSD) intervention for pregnant and breastfeeding (PBF) adolescents living with HIV (ALHIV) to prevent mother-to-child transmission (PMTCT) and address multiple challenges affecting young mothers who are pregnant or have children.

Material and Methods: The “teen moms” DSD is for ALHIV aged 13-24 who are either pregnant or have a child <24 months. These ALHIV meet monthly on Saturdays for ARV refills, viral load (VL) management, sexual and reproductive health (SRH) services, cervical cancer screening, gender-based violence (GBV) care, and psychosocial counseling. The children are provided nutritional supplements. The health care providers conduct health talks for various topics such as SRH and GBV awareness. The PBF ALHIV are also offered economic empowerment opportunities. Transitioning out of the program happens when they reach age 24 or the child have turns 2. Some of the transitioning are trained to become mentors of the program.

Results: Lighthouse Trust Tisungane Family Clinic in Zomba, Malawi has over 7000 clients alive on ART of which 398 are ALHIV. Of these, 44 (11%) are pregnant or breastfeeding and enrolled in the DSD. As of December 2022, all have remained in care and

the VL suppression was 95%. Since the inception of the program, none of the exposed children acquired HIV. However, the ALHIV experience unique challenges that affect them even after transitioning out of the program. Over 80% are single mothers who conduct transactional sex as a source of income. In addition, majority (70%) did not disclose their status to their sexual partners. Most of the school-aged girls (80%) do not return to school after delivery. Skills training is a priority interest to them and many are reluctant to transition to adult-care due to loss of peer-support.

Conclusion: The teen mom DSD is an effective PMTCT intervention, and it provides an opportunity for the PBF ALHIV to have peer support. However, these young women and their children require comprehensive, ongoing support to ensure an improved quality of life.

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Integrated Community-Based Prevention of Mother-To-Child Transmission (PMTCT) Of HIV Services Finds New Positives Among Pregnant Mothers in North Eastern Uganda

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Background: Despite remarkable progress in scaling up Prevention of mother-to-child transmission (PMTCT) services in Uganda, in 2021, 54,000 new HIV infections occurred, of these 57%(31,000) were among women who also happen to have the highest HIV prevalence of 7.2% in the population. Therefore, innovative client-centered approaches remain critical in improving HIV case identification. We describe how community PMTCT services find new positives among pregnant mothers that would have been missed in North Eastern Uganda.

Material and Methods: From January 2021 to June 2022 The Aids Support Organization through the

support of the CDC developed and disseminated a standard operating procedure (SOP) for community Antenatal care (ANC) to 125 Health Centers (HC). The SOP guided facility-level activities, community mobilization, and client flow during the outreach. The districts were supported to draw work plans for the outreaches which were supervised by the Assistant District Health Officer - Maternal and Child Health. Community ANC outreaches were implemented by a team of four Health workers including midwives, Mentor mothers, and linkage Facilitators, and each health facility implemented four outreaches a month. Performance was tracked weekly for timely course correction. The Outreach venues included schools, HC IIs, and sub-county halls. The package of services included community drug refills and EID Services, and with ANC as the entry service, HIV Testing Services (HTS) were offered for all pregnant women and repeat testing for eligible pregnant and breastfeeding women.

Results: A total of 641 pregnant mothers were newly diagnosed with HIV, with a contribution of 18.3% (117/641) pregnant mothers identified by the community PMTCT outreaches. In January-March 2021 cohort, 20% (19/93) of new positive mothers were identified by community PMTCT outreaches, followed by 18% (19/104), 17% (18/106), 18% (19/103), 17% (18/109) and 19% (24/126) in the respective cohorts. All (641) pregnant mothers newly diagnosed with HIV were counseled and linked to ART and PMTCT services.

Conclusion: Integrated community PMTCT services positively impacted HIV case identification among pregnant mothers hence more positives; meanwhile, engaging district leadership enhanced district-led programming which greatly improved buy-in among facility staff. We, therefore, recommend replication of these interventions in settings with similar program challenges.

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Trends in Interruptions in Treatment Among Men, Pregnant Women and Non-Pregnant Women: Retrospective Cohort Study in Zambézia Province, Mozambique (2013-2021)

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Background: Since Option B+ strategy commenced in Mozambique in July 2013, ART initiation guidelines for all persons living with HIV (PLHIV) have evolved from CD4-based thresholds to universal ART (Test & Start) beginning in 2016. We evaluated proportions of adult PLHIV groups – pregnant women (PW), non-PW, and men – experiencing an interruption in treatment (IIT) and describe IIT outcome trends over time between groups.

Material and Methods: A retrospective cohort study was conducted involving adult (≥15 years of age) PLHIV who initiated ART between July 2013 and June 2021 in 107 health facilities in nine districts in Zambézia Province, Mozambique. Routine patient-level data were used to summarize temporal trends in proportions of PW, non-PW, and men experiencing an IIT (defined as having no clinical contact for 28 days after the last scheduled/expected clinical contact) less than 3 months or within 3-5 months post-ART initiation (“IIT<3m” and “IIT3-5m”, respectively). Mixed-effect logistic models were built with district as random effect and splines on the time variable.

Results: Data from 228,628 adults were included, 25.5% PW, 40.4% non-PW, 34.1% men. Overall, monthly IIT<3m proportions for each group decreased from approximately 55% to 20% from 2013 to 2021. Trends in decreasing IIT<3m were more pronounced for PW; while men and non-PW showed continued higher proportions of IIT<3m, improvements were seen for these groups from 2019 on. Similarly, monthly IIT3-5m proportions for all groups decreased from 2013-2021 (~65% to ~18% for PW, ~50-55% to ~20-25% for non-PW and men), with variations among groups: higher proportions of PW experienced an IIT3-5m from 2013 to early 2016, while non-PW and men had biennial increases in IIT3-5m from 2013-2018. After 2018, IIT3-5m trends consistently decreased for all groups.

Conclusion: Trend analysis showed a prominent decrease in treatment interruptions in Zambézia Province for all three adult groups. Men and non-PW had overall slightly higher proportions of IIT, with significant improvements among these groups after Test & Start strategy was introduced, while the established Option B+ strategy showed continued positive effect for PW. Though trends are reassuring on adult early retention, continued efforts are needed to ensure sustained effect.

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Intensified, Focused Supervision of Care to Infants Exposed to HIV Results in Sustained Improvement in Early Infant Diagnosis (EID) Infant Testing Coverage in Malawi

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Background: Universal ART coverage and improved prevention of mother to child transmission care have decreased but not eliminated infant HIV

acquisition. Gaps in the implementation of the early infant diagnosis (EID) cascade remain, including active linkage of care of mother infant pairs, timely followup HIV testing at milestones and active discharge. We delivered a focused guided supervision intervention to help address these gaps.

Material and Methods: An electronic supervision tool, flagging best practices in EID care to close implementation gaps and reach 100% testing coverage was introduced at 95 Baylor-Tingathe supported sites in November 2021. Creation of a central supervision dashboard monitored by program leadership facilitated focused support to sites. Routine EID testing program data were used to report testing coverage trends, and to derive the impact of the intervention in single group interrupted time series analysis. Impact was calculated overall and by age group (2, 12, and 24 months).

Results: Testing coverage of 2, 12, 24 mo EID cohorts and overall increased from 85, 87, 80, and 84% in November 2021 to 95, 97, 93 and 95% in November 2022, respectively. Interrupted time series analyses demonstrated that the intervention was effective overall and its effect varied by age group, with the greatest effect seen among older children. While the immediate effect of the tool differed by EID cohort, we consistently obtained sustained positive significant trends in EID coverage in each group post-intervention. Overall EID coverage increased by nearly one percentage point per month in the post-intervention period, which suggests a consolidation/improvement of coverage efforts over time.

Conclusion: Utilizing a real-time supportive supervision tool resulted in sustained implementation of program best practices and improvement in EID testing coverage.

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Ending AIDS in Children by 2030: Finding and Linking Undiagnosed Children Living with HIV (CLHIV) to ART Using

the 'Know Your Child's HIV Status (KYCS)' Model in Central and Copperbelt of Zambia

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Background: Barely half of all CLHIV were on ART in 2021 (UNAIDS 2022). Ending AIDS in children by 2030 begins with closing the gap of low CLHIV identified and linking them to treatment. The global coalition to ending AIDS in children launched in 2022 envisions an AIDS-free pediatric population beyond 2030 through 4 pillars one of which is HIV case-finding. KYCS, as demonstrated in USAID DISCOVER-Health Project-supported facilities in Zambia is one of the innovations that can help bridge this gap in pediatric HIV case-finding.

Material and Methods: The intervention was rolled out to all supported facilities in early 2022. A line-list of all women living with HIV (WLHIV) on treatment was obtained from each facility from which biological and non-biological children (contacts) aged 19 years and below were elicited for HIV testing. The project oriented all key technical staff and provided resources (registers, test kits, transport) to facilitate HIV testing. Facility-level aggregates of data from electronic tools with key variables such as age, sex and other demographic parameters were collected for analysis.

Results: In total, 30,830 (85%) WLHIV on the Project's records were line-listed, from which 56,521 contacts were elicited. From these, only 24,513 (43%) had documented known HIV status. Ninety percent (28,926) of the contacts with unknown HIV status were tested. Overall, the Project identified 903 CLHIV aged 19 years and below (1.46% yield), all of whom were linked to ART. The median age of identified CLHIV was 15.2 years. Female contacts were one and half times more likely to test positive for HIV than males (OR=1.56, 95% CI 1.35 to 1.81, p<0.001), and female adolescents aged 15-19 years almost three times more likely to test positive than their male counterparts (OR=2.74, 95%: 2.07 to 3.68, p<0.001).

Conclusion: Despite KYCS requiring more HIV tests to be used to identify a positive child, it remains a crucial strategy for closing the gap in the number of children left behind in HIV treatment. Additionally, intentional investments are required to ensure equitable access to HIV combination prevention services among adolescent girls to address the high HIV incidence.

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Description of Mother Infant Pairs Among Infants With Incident HIV Acquisition in a Routine Program Setting in Malawi

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Background: Universal antiretroviral therapy and improved Prevention of Mother To Child Transmission (PMTCT) programming have significantly decreased but not eliminated vertical transmission. We reviewed the medical records of infants with incident HIV acquisition to identify maternal and programmatic factors associated with and possibly contributing to HIV transmission.

Material and Methods: Routine program data from 95 health facilities identified infants with a positive confirmatory DNA-PCR between April 2021 and January 2023. Adherence to PMTCT/EID guidance, including maternal HIV testing and ART initiation; and infant prophylaxis, testing and ART linkage were reviewed.

Results: Eighty-nine infants with confirmatory positive DNA-PCR results were reviewed. Median maternal age was 26 years (range 16-46) among 84 mothers with documented age. Thirty-six were adolescent girls and young women (AGYW) 16-24 years (Mean=20.7yrs, SD=2.2). Of the 89 infants, mothers' timing of HIV diagnosis was: prior to pregnancy 25% (22/89);, at first ANC visit 12% (11/89); in 3rd trimester 7% (6/89); at

maternity/postnatal 9% (8/89); during breastfeeding 39% (35/89) and unknown timing 8% (7/89). For 33 women with known HIV status at first ANC visit, 64%, (28/33) had interruption ART treatment interruption and 30% (10/33) were AGYW (16-24 years). Nearly all infants received neonatal prophylaxis (93%, 44/47) and 86% (38/44) of infants completed 6-week course. Mean age at infant HIV diagnosis was 12 months (SD=6.6 months). Most (91%, 81/89) infants were diagnosed via a routine milestone test; 9% via targeted testing for presumed severe HIV disease. All 87 infants who started ART initiated dolutegravir or lopinavir/ritonavir-based ART.

Conclusion: In a routine program setting in Malawi, incident infant HIV acquisition occurred primarily among women diagnosed with HIV during pregnancy or breastfeeding, and among women with treatment interruption, many of whom are AGYW. Interventions are needed to identify and address incident maternal HIV acquisition and treatment interruptions.

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Addressing Vertical HIV Transmission in Regions of High Climate Vulnerability

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Background: At midnight on March 14-15, 2019, Cyclone Idai inundated the coast of Mozambique. This ferocious storm devastated the city of Beira and the Dondo district directly inland. The storm left over a million people homeless and local health facilities severely damaged. These effects were amplified by the COVID-19 pandemic and the further destruction wrought by Cyclone Eloise in 2021.

Material and Methods: Four years later, the lingering effects of the Idai climatic event can still be seen in the HIV statistics reported by USAID Efficiencies for Clinical HIV Outcomes (ECHO) project, particularly in the region's persistently high rates of vertical transmission. Repeated evacuations have resulted in lost HIV cards and medications and generally destabilized treatment,

in an already-vulnerable migration corridor. Some health facilities are still providing services from tents, without electricity. During 2019-2022, Beira and Dondo provided 24% of the pregnant women and children aged 0-3 starting ART in the four provinces ECHO supports, although they represent just 9% of those provinces' population. In 2020, 20% of pregnant women in Beira and Dondo tested HIV-positive (vs. 15.2% in 2018); 9.6% of their babies had become infected by age 12 months (vs 8.0% in 2018).

Results: During 2021-2022, ECHO supported the Ministry of Health in an acceleration plan to increase VL coverage among pregnant women, ensuring that clinics were serving HIV patients in resettlement centers and targeting large, poorly performing clinics with intensive training and mentoring on national PMTCT guidelines. In Beira this effort has borne fruit; maternal positivity fell to 12% and transmission to infants to 3.6% in October-December 2022. To reduce the stubbornly high rates in the Dondo district, ECHO conducted a focused audit of vertical transmission cases, revealing high rates of maternal seroconversion during pregnancy, unaddressed unsuppressed viral loads among pregnant women, and poor adherence to antiretroviral therapy. ECHO is developing a targeted intervention to address these issues in 2023.

Conclusion: Climate instability may raise the risk of HIV transmission among young women and their infants. Vulnerable regions should ensure close monitoring of these groups in a climate emergency.

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Qualitative Segmentation of Adolescent Girls and Young Women (AGYW) PrEP Users: The Role of Differentiated PrEP Delivery Platforms

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Background: Adolescent girls and young women (AGYW), a target population for HIV prevention in Africa, show high PrEP interest but difficulty in sustained effective use. With ongoing PrEP scale-up focused on increasing PrEP access, it is important to understand what influences AGYW's choice of PrEP delivery platforms.

Material and Methods: The POWER (Prevention Options for Women Evaluation Research) PrEP implementation study site in Cape Town utilised a differentiated delivery model from July 2017 to November 2020. AGYW 16-25 years could access PrEP from any of four delivery platforms: a mobile clinic, government facility, courier delivery service, or community-based youth club. At government and mobile clinics, healthcare providers delivered comprehensive integrated sexual and reproductive health services. The courier and youth club platforms provided light-touch PrEP follow-up services incorporating rapid HIV self-testing. We conducted in-depth interviews with a purposive sample of AGYW who had ≥3 months of PrEP use based on pharmacy records and who accessed more than one PrEP delivery platform. Thematic analysis explored the preferences, decision-making, influences, and habits related to PrEP access to inform market segmentation.

Results: We interviewed 26 AGYW (median age 20) persistent PrEP users between November 2020 to March 2021. Of these, 24 used mobile clinics, 17 courier delivery, 9 the government facility, and 4 the youth club. Qualitative findings highlighted three potential behavioural profiles. The “Social PrEP-user” seeks PrEP delivery in shared peer spaces such as youth clubs or adolescent-friendly mobile clinics, that provide affirmation and social support for continued PrEP use. The “Convenience PrEP-user” seeks PrEP delivery at easily accessible locations, providing quick (courier) and/or integrated service with contraception and PrEP refills in a single visit (mobile and government clinic). The “Independent PrEP-user” seeks PrEP delivery that is discreet, outside of traditional medical environments, and offers control over delivery times that fit into their schedule as offered by the courier service. Comfort with HIV self-testing had minimal influence on PrEP delivery choice.

Conclusion: PrEP delivery platforms must be tailored to thematic groups of AGYW and more closely aligned to individual characteristics and needs for convenience, independence, or social engagement to improve AGYW’s PrEP persistence.

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Prevalence and Correlates of Violence Among HIV Positive Adolescents in Western Kenya

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Background: Violence against adolescents is often under-reported due to stigma and fear of retribution. Violence has been associated with increased risk of acquiring HIV. We aimed to determine the prevalence and correlates of violence among the adolescents and young adults living with HIV (AYALHIV) in western Kenya and to determine potential impact of the COVID-19 epidemic.

Material and Methods: This was a cross-sectional analysis using data from Data informed Stepped Care (DiSC) study. AYALHIV aged 10-24 years attending 9 HIV care facilities in Homabay and Kisumu counties in Kenya, were enrolled.

Behavioral survey data was collected at baseline after routine healthcare appointments and follow up at month 6.

Results: Between April 2019 and July 2020, 1384 AYALHIV were enrolled, of whom 66% were female; males were significantly younger than females enrolled (mean age 16 vs. 18, $p < 0.001$). Prevalence of lifetime violence increased with age, with 24% and 25% (under 20-years) and 48% and 42% (20+ year old), prevalence of violence in females and males, respectively. Among females under 20, violence was significantly associated with depression, internal stigma, orphan status, and transactional sex. Prevalence of reported recent violence (past 6 months) was 12% among females and 6.1% among males. In males, recent violence declined from 13.0% to 6.1% ($p = 0.002$) and in females from 15.0% to 12.0% ($p = 0.053$) with lower rates in the post-COVID-19 period than the period pre-COVID-19. Females had declines in physical (10.0% to 7.2%, $p = 0.051$), emotional (8.0% to 4.5%, $p = 0.014$) and main partner violence (12.0% to 6.2%, $p = 0.018$). Among males, physical violence declined significantly post-COVID (11% to 3.1%, $p = 0.001$), while emotional and main partner did not significantly change.

Conclusion: Prevalence of violence among ALHIV was higher during the pre- COVID-19 than post-COVID period. This may reflect lower exposure to violence in school or external relationships that were not present during the COVID-19 lockdowns. Our findings differ from other studies which found increased violence, particularly among women during this period.

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Prevalence and Predictors of Depression Among Young Female Sex Workers in Kisumu-Kenya

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Background: Correlates of depression among young female sex workers (YFSW) have been understudied in sub-Saharan Africa, yet depression impairs judgement and could lead to sexual decisions that put YFSW at risk of HIV. We examined the frequency and correlates of depression among YFSW in Kisumu County, Kenya, to establish the prevalence and identify factors to inform interventions that address depression in YFSW.

Materials and Methods: We used respondent-driven sampling to recruit HIV negative YFSW aged 18-24 years for a PrEP adherence study. Depression was measured using the PHQ-9 screening tool. Covariates included sociodemographic measures, sex work, social support, violence, substance use and mental health. Bivariate analysis assessed the independent association between these characteristics and screening positive for depression. Logistic regression was used to determine the degree of influence of alcohol use and screening positive for depression.

Results: A total of 200 YFSW were enrolled with a mean age of 21.3 (18 – 24) years and 71 (35.5%) screened positive for depressive symptoms. Of the 71, 77.5% were not married, 16.9% were divorced/separated and 5.6% were married/had living-in partners. On average (range), participants reported having 3.13 (1-7) clients per day. Of those who screened positive for depression, 23 (32.4%) completed primary education, 42 (59.2%) secondary and 6 (8.5%) post-secondary education; 64 (90.1%) reported lacking income to meet their needs. Of those with depressive symptoms, 48 (67.6%) reported experiencing emotional violence

in past 3 months while 49 (69.0%) experienced either sexual or physical violence in the last one year; only 5 (7.0%) had someone to share personal problems all the time and 10 (14.1%) had no one to share problems with. In the same group, 34 (47.9%) and 7 (9.9%) reported harmful/severe alcohol use and drug abuse (mainly cannabis). In bivariate analyses, only alcohol use was independently associated with positive depressive symptoms (Chi=8.8; p=0.03); those reporting harmful/severe alcohol use had 2.47 times the odds of screening positive for depressive symptoms compared to those who did not (95% CI: 1.35 to 4.52).

Conclusions: Harmful alcohol use was associated with positive screen for depressive disorders among YFSW. Addressing harmful alcohol intake may reduce depression among YFSW.

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Using Comprehensive Sexuality Education to Enhance Uptake of HIV Testing Among Adolescents and Young People in Secondary Schools

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Background: Adolescents and young people (AYP) aged 15-24 years in Kenya are disproportionately affected by HIV, yet in 2018, knowledge of HIV status was only 49.8% and in 2022, correct HIV knowledge on HIV prevention stood at 54.2%. Comprehensive sexuality education (CSE) can increase HIV testing. We piloted CSE among school-going AYP to promote uptake of HIV testing services (HTS) and STI screening.

Material and Methods: We conducted a cluster randomized-control trial with HTS uptake as the main outcome. Six secondary schools were paired based on type (girls, boys and mixed) and one in each pair randomly assigned to intervention (CSE) or control. Data were collected on HIV risk perception, sexual behaviors and self-efficacy towards abstinence. Intervention students were taken through 12 peer-led CSE sessions

implemented over a 6-month period. Control students continued with the life skills curriculum offered in schools. All participants were asked to anonymously list the services they required. After the intervention, HTS counsellors and clinicians were engaged to provide services in schools.

Results: We enrolled 293 students from 6 schools (148 in intervention and 145 in control); mean age was 17 years, 51.5% were female, 83.9% were single and 73.7% were Christian. Altogether, 66.9% requested for HTS services, 10.6% for STI services, and 27.7% for SRH information. Requests for HTS, STI and SRH information was higher in the intervention arm at 12.3%, 3.2% and 20.6%, respectively, than control. Services have been offered for 47 students in one intervention school: 25 requested for HTS and 23 received the services, 3 requested for STI management and 4 received (1 additional), and 19 requested for SRH information and 22 received (3 additional). The impact of the intervention on service uptake will be determined once service provision is complete in all schools in February/March 2023, and will be reported at the conference.

Conclusion: CSE led to high request for HTS services, and as demonstrated by one school where services have been offered, uptake is over 95% of the requests. The life skills curriculum in Kenya should be expanded to include CSE to increase correct HIV knowledge and improve service uptake.

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Using a Referral Directory to Improve PrEP Continuation Among Female Sex Workers in Kisii County, Kenya

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Background: In Kenya, HIV prevalence among FSWs was 29.3% in 2018 compared with 4.9% in the general population. Low continuation on PrEP among FSWs increases risk of HIV acquisition and transmission. Temporary and permanent migration of FSWs from safe spaces where PrEP is offered

exacerbates discontinuation of PrEP as most do not know where to pick up PrEP in their new locations. We piloted the use of a PrEP referral directory to enhance continuation on PrEP among FSWs who relocate away from safe spaces.

Material and Methods: We used a pre-post study design to test the effectiveness of the intervention on PrEP continuation. Health facilities offering PrEP in the locations FSWs often migrate to were mapped. We randomly selected FSWs aged 18-24 from the safe space register and abstracted data on PrEP continuation for 6 months pre-intervention. We provided PrEP referral directory and again abstracted PrEP data after 6 months post-intervention. Those who migrated were administered phone-based follow-up interviews to monitor PrEP continuation in the linkage facilities. Primary outcome was improved continuation on PrEP.

Results: We enrolled 300 participants on PrEP: mean age was 21.7 years (12% were 18-19 years and 88% were 20-24 years), 4% did not attend school completely while 55% had primary level of education, 80% were single, 16% were divorced. Sixty-eight percent were living in rented homes while 28% were living brothels, 28% reported migration as a main barrier to PrEP continuation yet 28% reported migrating twice a month while 23% migrated thrice a month. Altogether, 44% migrated during the 6-months follow-up period, of whom 98% were active on PrEP when migrating; of these, 79% were restarted on PrEP during their migration period, 68% reported to have received PrEP refill from the link facility, 15% of whom reported that PrEP referral directory as the main facilitator of their continuation on PrEP.

Conclusion: Assessed using the pre-post design, PrEP referral directory can improve PrEP uptake and continuation among FSWs who relocate from the safe spaces.

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Comparing the Frequency of Attendance of HIV Psychosocial Support Group Sessions on Clinical Outcomes Among Newly Enrolled Clients on Antiretroviral, Adolescents and Clients With Detectable Viral Load in Coptic Hospitals, Nairobi

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Background: HIV psychosocial Support Group sessions (PSSG) are highly recommended for all people living with HIV (PLHIV) as they contribute clients' adherence to ART and disclosure to sexual partners among other clinical and social outcomes. At Coptic Hospital, three different cohorts of PSSGs exist: newly enrolled clients on ART, clients with detectable Viral load (DVL) and adolescents living with HIV (ALHIV). This study sought to assess the impact of PSSGs attendance on clinical outcomes for the three sub-populations.

Material and Methods: A longitudinal analysis for the three sub-populations was conducted between January 2019 and April 2022. Data analyzed included clients' demographic information, clinical characteristics, retention (clients who had not missed ART visit for >28 days by 30th November 2022) and HIV status disclosure to sexual partner. Data was analyzed and presented into charts using PowerBI.

Results: Data for 582 PSSG clients was analyzed: 195 ALHIV, 133 clients with DVL and 254 newly enrolled clients. Among the 582 clients, 476 (82%) had attended only 1 PSSG session while 73 (13%) attended 2 sessions and 33 (6%) attended ≥3 PSSG sessions within the period under review. Retention for clients attending ≥3 PSSGs was the highest at 91% while those attending 2 sessions was at 89% and those attending only 1 session at 85%. Viral suppression- A total of 303 clients attending PSSGs had a valid viral load post PSSG attendance. VL

suppression rates were high for clients attending ≥3 PSSG sessions at 18/19 (95%), those attending 2 sessions at 31/38 (82%) and those attending 1 session at 228/246 (93%). Re-suppression rate for clients with DVL was high at 51/60 (85%) for those who attended ≥3PSSGs. Status disclosure to partner- Before enrollment to PSSGs, only 129/582 (22%) clients had disclosed HIV status to sexual partner. After ≥3 PSSGs, 275/476 (58%) had successfully disclosed their HIV status to partners.

Conclusion: PSSGs contributed to clients' adherence and retention to care. VL suppression and re-suppression among clients attending PSSG sessions is relatively high especially for those attending ≥3 sessions same as impact on HIV status disclosure to sexual partner. PSSG is highly recommended in the care for PLHIV.

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Gender Roles, Gender Non-Conforming Stigma, and HIV care: Qualitative Insights from Men Who Have Same-Gender Sex and Health Care Workers in Urban Ghana

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Background: Gay, bisexual and other men who have sex with men (GBMSM) experience health disparities, including an increased risk of HIV acquisition and lower access to HIV prevention and treatment services. In Ghana, these health disparities are influenced by intersectional stigma and discrimination (ISD) related to sexuality and gender nonconformity, yet there is limited research on the role of gender in driving ISD in the daily lives of GBMSM. This study examined gender dynamics and gender nonconformity in the Greater Accra and Ashanti regions, of Ghana, and how these shape the experiences and well-being of GBMSM.

Material and Methods: We conducted a thematic analysis of qualitative data from the formative research phase of a trial to assess a multilevel intersectional stigma-reduction intervention to increase HIV testing among GBMSM. Focus group discussions (FGDs) and in-depth interviews (IDIs) were conducted among adult GBMSM (8 FGD/10 IDIs) and health care workers (HWs) (16 FGDs/8 IDIs). Analysis was guided by a gender constructs framework and a relational approach to gender. Verbatim transcripts were coded; matrices were developed to facilitate comparison within and across groups.

Results: We found: (1) culture-specific gender norms influenced expectations of men and women regarding appearance, presentation, and responsibilities; (2) gender nonconformity was situationally dependent on time, context, and place; (3) the rigidity of gender expectations has loosened over time, however, HCW participants still held unaccepting, though occasionally accommodating attitudes, toward Making conscious efforts to be more gender conforming as well as concealing sexual orientation were strategies to avoid anticipated stigma, ensure safety and receive quality health care. Findings signal that although gender constructs are changing, the interplay between ISD, gender norms, expectations, and gender non-conformity and has important implications for the health and well-being of GBMSM, including HIV prevention and treatment.

Conclusion: In Ghana, male gender nonconformity and its link to ISD are complex, context-dependent, and evolving. Multi-level ISD-reduction interventions that are gender-transformative are needed to improve access to HIV testing and treatment for GBMSM.

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Lessons on ART Treatment Literacy Among PLHIV: Evidence From I CAN Campaign in Zimbabwe and Malawi

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Background: Communicating the benefits of ART to people living with HIV (PLHIV) is crucial to achieving the UN targets of 95 95 95, but there is limited guidance on the most effective communication strategies to reach these groups. Between 2020 – 2022, Flip the Script (FTS) launched a strategic communication campaign branded I CAN campaign in 9 targeted communities across Zimbabwe and Malawi. The campaign identified undiagnosed PLHIV, linked them to treatment and supported their treatment journey. I CAN used teaching aids to accessibly communicate the benefits of viral suppression and raise awareness of normalizing ART treatment.

Material and Methods: To monitor and evaluate the campaign FTS conducted a study between April 2020 and September 2022 consisting of quantitative surveys at baseline (n=1582) and endline (n=1462), and qualitative in-depth interviews among 52 participants (ages 18–35) and 26 service providers. Participants were purposively sampled, and data were collected among PLHIV, potential sex partners, PLHIV not on ART, ART champions and Health care providers (HCPs) in SurveyToGo. Data were analysed using nonparametric analysis in Stata 17 and thematically analysed using Dedoose.

Results: Of the 1582 participants at endline, 97,8% and 96,6% were exposed to I CAN campaign (media and ART champions), 67,8% and 74.9% spontaneously recalled viral suppression as a way to reduce HIV transmission in Zimbabwe and Malawi respectively. In Zimbabwe participants exposed to I CAN campaign significantly showed increased knowledge (3.39; p<0.001), motivation (1.97; p<0.001), less stigma (2.54; p= 0.001) and few reported stopping taking ART (24.7%; p=0.018) at endline compared to baseline where there was no exposure to the I CAN campaign on a 5-point Likert scale. Qualitative results suggest participants exposed to the I CAN campaign had increased understanding of the benefits of ART treatment particularly on normalizing ART treatment.

Conclusion: Our results provide prima facie evidence on the impact of I CAN campaign on communicating treatment benefits and raising awareness of normalizing ART treatment. We recommend cascading I CAN campaign to other contexts as understanding ART treatment benefits have proved to be crucial in the reduction of HIV

acquisition and increased retention to care for PLHIV.

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Prevalence and Correlates of Alcohol Drinking Among Adults Living with HIV: Results from the Tanzania HIV Impact Survey 2016-2017

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Background: Alcohol consumption is associated with increased risk for HIV infection. Further, hazardous drinking has been linked to poor health outcomes among people living with HIV (PLHIV) including poor adherence to antiretroviral therapy (ART). In Tanzania, few studies have examined the potential effects of alcohol use on ART use and viral load suppression (VLS). We examined the prevalence and correlates of alcohol use among PLHIV in Tanzania.

Material and Methods: We used data from the Tanzania HIV Impact Survey 2016-2017, a cross-sectional household-based nationally representative survey. Consenting participants were interviewed and tested for HIV with return of results using the Tanzania national algorithm. HIV-positive results were laboratory confirmed and tested for viral load. VLS was defined as HIV RNA <1,000 copies/ml. Our analysis included laboratory confirmed PLHIV aged 15 years and older. We classified participants who responded to question on alcohol frequency in the past 12 months as non-drinkers or drinkers. We used AUDIT-C scores to determine hazardous drinking status. The primary outcome variable was self-reported alcohol consumption. Secondary outcomes included VLS and self-reported missing days of ART. Logistic

regression models were used to assess correlates of overall drinking, ART and VLS. We estimated odds ratios (ORs) with their corresponding 95% confidence intervals (95% CI).

Results: Among 1,812 PLHIV, 33.9% were classified as drinkers, with 246 (13.1%) being hazardous drinkers. Among males, 17.9% were considered hazardous drinkers compared to 11.8% of females. The odds of alcohol consumption were two times greater among males compared to females (aOR:2.31, 95% CI: 1.69-3.16) and almost three times greater among older adults, aged 50+ years compared to younger adults, aged 15-24 years (aOR: 2.91, 95% CI: 1.45-5.81). Further, drinkers had 75% greater odds of missing one or more days of ART in each month compared to non-drinkers (aOR: 1.75, 95% CI: 1.14-2.69). The association between VLS and alcohol consumption was not statistically significant in the multivariable model.

Conclusion: These findings highlight the sub-populations where alcohol use is most prevalent among PLHIV in Tanzania. Given alcohol use is associated with missing more days of ART, addressing alcohol use among PLHIV can aid in increasing ART adherence.

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Abstract 249 was withdrawn.

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Factors Associated With Intimate Partner Violence Among Young Women and Men in Kwazulu-Natal, South Africa

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Background: South Africa has among the highest rates of intimate partner violence (IPV) and HIV prevalence rates globally. Although there is abundant research on the association of IPV and HIV, particularly against women with men as perpetrators, there is limited research on men who have experienced IPV. To address this gap, we conducted an analysis of self-reported lifetime physical IPV (PIPV), emotional IPV (EIPV), and composite IPV (CIPV) by gender.

Material and Methods: We administered 2,581 questionnaires focused on sexual behavior and violence as part of a prospective cohort study among adolescent girls and young women aged 15-24 years and adolescent boys and young men aged 15-35 years in uMgungundlovu District, South Africa between August 2021-July 2022. Descriptive analysis and multivariate logistic regressions were performed.

Results: Of the total participants, 16% (n=411) reported experiencing at least one form of IPV in their lifetime. Of 1649 women surveyed, 14.7% reported experiencing CIPV, 8.7% PIPV, and 9.5% EIPV. Of 941 men surveyed, 18.5% reported experiencing CIPV, 7.7% PIPV, and 14.4% EIPV. Women who consumed alcohol 2-4 times per week and those who always experienced condom refusal from their partners were more likely to report experiencing CIPV (adjusted odds ratios (aORs)=5.17, 2.36; 95% confidence intervals (CIs): 1.55-17.29, 1.19-4.70), EIPV (aORs=9.28, 2.72; 95%CIs: 2.42-35.54, 1.30-5.68), and PIPV (aORs=5.27, 3.64; 95%CIs: 1.40-19.90, 1.68-7.87), respectively. Men who reported high food insecurity and those who participated in transactional sex were more likely to report experiencing CIPV (aORs=4.29, 2.43; 95%CIs: 1.15-15.92, 1.39-4.27) and EIPV (aORs=5.34, 2.11; 95%CIs: 1.19-23.99, 1.02-4.33), respectively. HIV-positive men were more likely to report experiencing PIPV compared to HIV-negative men (aOR=7.17; 95%CI: 1.73-29.76).

Conclusion: We found differences in factors that may be interlinked with violence exposure affecting young women and young men who experience IPV, with unacceptably high proportions of IPV across the board. Our findings indicate the need for separate targeted interventions among young women and men to address IPV. For women, such programs could incorporate sexual health advocacy on condom use and counselling support; and for

men prioritize those with high food insecurity and those who transact sex.

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Understanding Barriers and Enablers of Comprehensive Use of Sexual and Reproductive Health Service to Boost HIV Prevention Interventions Among Adolescents and Youth in Southern Mozambique

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Background: In Mozambique, there is a critical need for a more incisive response to adolescents and youth (AY) sexual and reproductive health (SRH) priorities. A deeper understanding of issues affecting knowledge, access to and utilization of SRH services by AY is key to boost HIV prevention and to develop effective evidence-based interventions to address the SRH needs of this priority group.

Material and Methods: We conducted a cross-sectional qualitative exploratory study in southern Mozambique (Matola and Marracuene districts) in April-July 2022, using semi-structured interviews and focus group discussions with AY, 10-24 years old, caregivers, health staff and teachers. We assessed knowledge of SRH, perception and utilization of the Adolescent and Youth Friendly Services (AYFS). Qualitative content analyses of transcripts were performed aided by the NVivo software.

Results: Ninety-four AY were interviewed at school (54), at the health facility (30) and out-of-school (10), 42 caregivers, 17 teachers, 9 health staff, 5 activists; 5 focal groups of AY, 5 of health staff and clients, 4 of teachers and caregivers were conducted. The AY median age was 19 years, 65% were female. The following themes emerged as barriers: a) incomplete knowledge among AY and caregivers of SRH topics and of SRH comprehensive services available at AYFS, b) limited utilization of SRH services, mainly used for family planning and screening of sexually transmitted diseases, c) lack of effective communication between parents and AY about SRH, d) strong influence of social and cultural norms in shaping SRH service seeking behavior and SRH dialogues within the family as well as at school, e) suboptimal integration of SRH education at schools. Facilitators were: a) SRH services provided in the community by a trained team, b) peer-led SRH education, c) supportive caregivers on SRH matters, d) teachers trained in SRH topics.

Conclusion: Suboptimal knowledge and social-cultural norms around SRH are the main barriers limiting SRH utilization among AY. Culturally sensitive dissemination of more comprehensive SRH information and out-reach SRH services in the communities, including school-based services and peer-led SRH education programs embedded in a multisectoral response may result in improved AYFS uptake and positive SRH behavior over time.

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“Patients Forget That We Are Human Beings”: Healthcare Provider Perspectives on Burnout, Stress, and Trauma in Kwazulu-Natal, South Africa

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Background: Studies have found the clinic environment and patient-provider interactions to be barriers to care for many patients. While person-centred care (PCC) initiatives often view these issues through the lens of the patient, this study aimed to assess PCC enablers and barriers from the

healthcare provider (HCP) perspective, with the aim of informing an intervention to better meet their needs and thereby enable better patient care.

Material and Methods: We conducted 7 facility observations and 35 semi-structured nurse interviews in two districts of KwaZulu-Natal, South Africa, comprising 29 women and 6 men, averaging 41 years of age and 12 years of experience. Sampling was intended to approximate the diversity of the population, with sample size based on feasibility and saturation. Interviews focused HCP attitudes and behaviours as well as workplace environment and how those affected their ability and motivation to provide care. Data were coded to overarching domains, analysed thematically, and synthesized to explore differences and commonalities across participants.

Results: Barriers and facilitators clustered around three broad areas: internal motivation, interaction with patients, and interaction with colleagues. Contrary to the stereotype that HCPs are extrinsically motivated by power and status, most providers communicated a strong intrinsic desire to help people. Additional PCC facilitators included consciousness of the patient experience, intentional trust-building, effective communication, positive feedback, teamwork, supportive supervision, and a sense of connectedness to patients, colleagues, and community. Barriers included contextual factors such as high patient volumes, staffing shortages, time pressure, unrealistic targets, poor teamwork, limited learning opportunities, and burdensome administrative and reporting requirements, resulting in high levels of stress and anxiety.

Conclusion: While PCC models often focus on the patient experience, many HCPs also find the clinic environment unsupportive and experience frustration with poor patient-provider interaction. PCC approaches should recognise the importance of improving the experience and wellbeing of both patients and providers. Interventions that reinforce providers’ intrinsic motivators, build communication and stress management skills, promote teamwork and connectedness, strengthen supportive supervision and feedback, and to provide opportunities for learning and growth are likely be more effective than approaches focused primarily on monitoring and enforcement of prescribed behaviours.

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Assessing the Effectiveness of Peers vs. Research Staff in Identifying Adolescents Living With HIV Reporting Depressive Symptoms in Kisumu County, Kenya

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Background: Mental health challenges are common in youth living with HIV (YLHIV), and adversely affect their adherence to care. While countries have adopted mental health screening into the routine care, implementation and reporting remain low. Both WHO and Kenya's MOH encourage task-sharing that includes redistribution of some mental health services from medical to non-medical specialists in primary care. Strategies are needed to optimize disclosure of mental health challenges by YLHIV to researchers to inform interventions that optimize ART outcomes. We compared disclosure of depressive symptoms between research assistants and ALHIV as peers.

Material and Methods: We randomly assigned ALHIV coming for routine ART services to receive the mental health screening from either peers or research assistants using Patient Health Questionnaire (PHQ-9), Youth-Pediatric Symptom Checklist (Y-PSC), and Alcohol Use Disorder Identification Test (AUDIT-C) tools. The main outcome was proportion disclosing depressive symptoms. YLHIV's responses on the PHQ-9 were converted to severity scores and Pearson's chi-squared tests were run to test differences between scores in the peer-assigned versus research assistant-assigned groups.

Results: 207 participants were enrolled: 55.1% female, mean age 17.8years, 79.7% were students, 3.8% were married and 8.2% were unemployed. 102 were randomly assigned and screened by peers and 105 were screened by RAs. Forty-nine (31%) of the 207 YLHIV screened positive for mild (n=42),

moderate (n=6), or severe depression (n=1). There were no significant differences between the number of YLHIV who reported depressive symptoms to peers (n=26 or 53%) versus research assistants (n=23 or 46%). The Pediatric Symptoms Checklist (PSC) Internalizing scale showed that 8.2% (n=17) were impaired. The Alcohol Use Disorder Identification Test (AUDIT-C) tool revealed 7 of 207 screened to have drug use disorder.

Conclusion: There were no significant differences found in rates of reporting between peers versus research assistants in this study. These findings provide helpful insights about the prevalence of depression in ALHIV and highlight the need for future research focused on task sharing in mental health services for ALHIV.

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Empathy-Based Training of HIV Treatment Peer Supporters Improves Performance and Reduces Treatment Interruptions: Experience From the I Can Campaign in Malawi

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Background: In Malawi, approximately 1,000,000 people are living with HIV (PLHIV) and over 850,000 of them are on treatment. Sustaining treatment adherence is key to maintaining this accomplishment and realizing the benefits of treatment for HIV prevention. Studies have shown that support from trained peer supporters known as "expert clients" can improve treatment adherence. The "I CAN" treatment literacy campaign piloted in Malawi sought to strengthen this approach through provision of empathy-based training and visual job aides to expert clients known as "ART Champions." Here, we review the effect of the ART Champion-approach in improving performance of expert clients and reducing treatment interruptions.

Material and Methods: From 2020 to 2022, PSI with Malawi Ministry of Health and stakeholders rolled out a national treatment literacy campaign called “I CAN.” The campaign focused on increasing motivation among PLHIV to start and stay on treatment. ART Champions were recruited from existing expert clients recommended by facilities, trained on empathy-based counseling and job aides, and deployed to support ART clients struggling with adherence. 40 ART champions were trained and placed in 6 targeted facilities in Lilongwe and Mangochi between March and September 2022. These sites also employed expert clients with standard training. Both were provided with a targeted number of clients per week to follow up. We analyzed routine data to determine success rate and treatment interruptions, comparing ART Champions to expert clients with standard training.

Results: In the targeted facilities we had 40 vs 53 ART champions and Expert clients respectively. ART Champions reached 2,785 ART clients with missed appointments of whom 2,443 returned to the clinic, representing an 89% success rate. Expert clients reached approximately 2,718 ART clients 1,552 returned to the clinic, representing a 57% success rate. A performance comparison analysis showed ART Champions had an improved ability to bring back clients to care: 80% vs 56% for the standard trained expert clients. Overall, ART Champions contributed to a 23(p-value 0.008) reduction in treatment interruptions across the targeted facilities.

Conclusion: Our results demonstrate that empathy-based training and tailored job aides for expert clients yield superior results in bringing clients back to treatment.

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Chemsex and Unsafe Sexual Health Seeking Behaviour Amongst Young Female Sex Workers Who Use and Inject Drugs: A Case Study Across Five (5) High Risk Areas in Lagos, Nigeria

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Background: Chemsex refers to using substance to enhance sexual experiences, however this trend is gradually getting predominantly popular amongst key populations communities (Men who Have sex with Men-MSM, Female Sex Workers-FSW, Persons Who Use Drugs-PWUID). The study assessed the effects of psychoactive drug substances on sexual response, motivations to engage in chemsex and relationship with sober sex. Evidence from variant studies globally, correlates with the incidence of increased drug –related harm amongst young FSW_WUIDs who engage in poly drug-use and effects associated with poor sexual health seeking behaviors.

Material and Methods: The study was a descriptive cross sectional study design involving 250 FSW participants aged 18 -29 yrs using the snowballing sampling method. Data collection was based on self-interviewer administered questionnaire which included knowledge, attitude and behavior. Participants included both HIV positive and HIV Negative across five (5) selected sites in Lagos State, Nigeria within a 9- month period. Data were analysed using SPSS soft ware and presented as frequency and tables. A chi-squared was used to test for associations between variables.

Results: From the 250 FSW_WUIDs participants: 107.5 (43%) use alcohol; 75 (30%) used crack cocaine; 67.5 (27%) used synthetic cannabis; 107(43%) used methamphetamine; 147.50 (59%) used two or more drugs and 102.5(41%) used one or more drug;(35%) disclosed their HIV Status and on Anti-Retroviral Treatment. Prevalence of injection drug use was 14% (n=35). However, `smoking (p<0•0001), evidence of harmful alcohol drinking (p=0•0001), and ART non-adherence (p<0•0001).chem sex was associated with prevalence of condomless sex with HIV sero-concordant partners (24% to 78%), condomless sex with HIV sero-discordant partners (17% to 69%). Methamphetamine, Crack-cocaine & Synthetic cannabis was more strongly associated with higher-HIV-risk and condomless sex than other commonly used drugs in the research community.

Conclusion: Sexualized drug use amongst Young FSW who Use/inject Drugs (HIV negative and HIV

positive) is strongly associated with condomless sex and non-adherence to HIV treatment if no proper behavioral, biomedical and structural support interventions is available. Drug-related harm reduction interventions is urgently needed to sustain behavior change while various future researches are welcomed to help promote inclusive public health programming in Nigeria.

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I CAN Campaign: A Promising Approach to Increasing Art Adherence in Zimbabwe and Malawi

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Background: While HIV testing, ART treatment initiation and virological suppression have been identified as crucial to reach UN targets of 95-95-95, information about the benefits of ART treatment particularly on the reduction of onward transmission of HIV is limited. We implemented a strategic communication campaign, I CAN. The campaign identified people living with HIV (PLHIV) who were struggling on treatment, initiate and support them throughout their treatment journey using ART champions and strategic campaign messages on media channels. The program was conducted in 9 HIV prevalent communities in Zimbabwe and Malawi.

Material and Methods: We used a mixed study design of quantitative quasi-experimental surveys and qualitative in-depth interviews for baseline and endline between April 2020 and September 2022. Purposive sampling was used to recruit participants in the community who were apathetic about life through segmentation selection. Participants were aged 18-35 and included PLHIV, potential sexual partners of PLHIV, PLHIV not on ART treatment, ART champions and Health care providers (HCPs). Survey data of baseline and endline were analysed using nonparametric methods in Stata 17. Qualitative data were thematically analysed using Dedoose software. Ethical approval was sought and granted.

Results: Among survey participants (n= 3044), 52% were from Zimbabwe (n=1582) and 48% from Malawi (n=1462). Participants exposed to the I CAN campaign reported a significant increase in treatment as prevention knowledge (67,8%; 74,9,2% [p<0.01]) in Zimbabwe and Malawi respectively. Insights from qualitative data (n=78) highlighted how people exposed to the I CAN campaign understood the reduction of onward transmission of HIV as a benefit of taking ART and were motivated to stay on treatment. ART champions facilitated dialogical spaces to dissipate stigma and healthcare providers cited an increase in the number of people initiating and adhering to ART.

Conclusion: The I CAN campaign increased knowledge of viral suppression benefits such as reduction of onward transmission of HIV and ART treatment adherence using simplified ART treatment visual aids. We present important lessons from the I CAN campaign that can be adapted in other contexts and leveraged to scale.

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“Let’s talk about Gender Based Violence” - Addressing HIV Prevention among People with Disabilities

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Background: Gender Based Violence (GBV) directly and indirectly increases the risk for HIV transmission. People with disabilities (PWD) are vulnerable to violence and may not report the abuses because of dependence on other people. A one-year PEPFAR funded “Reaching out to people with disabilities” project implemented through AIDS Information Centre Uganda employed a PWD caretaker-peer model to increase PWD access to HIV services. Project activities included community meetings to empower PWD with knowledge on HIV and GBV.

Material and Methods: Using a PWD Caretaker-Peer led model, PWD from various communities in

three divisions of Kampala city were mobilized to attend HIV/GBV/SRH related sensitization meetings and family support meetings for PWD on ART. Non-PWD community members also attended these meetings. Between July and September 2022, 283 participants of whom 122 were PWD with physical 87(71.3%), hearing 18(14.8%), visual 7(5.7%), mental 7(5.7%) disabilities; 2(1.7%) little people and one person of colour (0.8%) attended the meetings. The participants were empowered with knowledge on HIV/GBV/SRHR and pathways to report violations and receive services. Participants were offered counselling and screening for GBV.

Results: 122 people including 61 PWD were screened for GBV. Of these 61(50%) had experienced GBV with 41(67.2%) among PWD and 20(32.8%) among non-PWD community members. Physical (39%) and sexual (31%) GBV were most common. Females irrespective of disability status experienced more GBV than males although 85% non-PWD females experienced more GBV of all forms compared to 51.2% among female PWD. Female PWD experienced twice as much Sexual GBV (62.5%) as male PWD while male PWD experienced 1.5 times more physical GBV than females. 20% males with physical disabilities experienced sexual GBV. None received HIV prevention services post-GBV. 50% of PWD with physical disabilities experienced psychological GBV as well as PWD female caretakers (38.8%). More PWD (63.4%) reported violations in sensitization meetings than in family support meetings. PWD caretakers and peers were empowered to support linkage to GBV services.

Conclusion: There is still need to promote awareness programs about GBV and HIV prevention in communities. The PWD caretaker-peer led model holds promise to reach PWD and their families with these programs and services.

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The Association Between HIV-Related Stigma and ART Adherence on Cardiovascular Disease Risk in People Living With HIV

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Background: In Sub-Saharan Africa, HIV/AIDS remains a leading cause of morbidity and mortality. While HIV/AIDS emerged to the public's awareness in the early 1980s, HIV-related stigma remains a major problem owing to fear of transmission, misperceptions, and misinformation concerning HIV. HIV stigma and discrimination may limit adherence to antiretroviral treatment (ART), thus increasing viremia, inflammation, and cardiovascular disease (CVD) risk. This study aims to investigate the association between stigma and ART adherence on CVD risk among PLWH.

Material and Methods: A cross-sectional study was conducted among 325 HIV+ participants, from the Ndlovu cohort study in Limpopo province, South Africa (2014 to 2017). A 12-item short-version questionnaire of the HIV stigma scale was used to measure HIV-related stigma. Pulse wave velocity (PWV, CVD risk predictor) measurements at 12 months and laboratory assessment of viral load were performed. Viral load was considered a surrogate marker of ART adherence. Poor/no adherence = High viremia (viral load, VL) > 1000 copies, suboptimal adherence=low viremia (VL 50-1000 copies), and good adherence = undetectable viral load (<50 copies). Multiple linear regression was used to assess the relationship between stigma, ART, and CVD risk. Beta coefficients with a 95% confidence interval were used to determine the strength and direction of the association, with a p-value of 0.05 declared as statistically significant.

Results: Of the 325 HIV+ participants, 67% were females. The mean age was [42.07, SD (10.18)], and the median for overall stigma was 20.00 (18.00-21.00). Seventy-eight percent of participants had undetectable VL, 15% had high viremia, and 7% had low viremia. Overall stigma [-0.03 (-0.12_0.05), p=0.42] and high viremia [-0.34 (-0.89_0.19), p=0.21] were not significantly associated with PWV.

However, low viremia [1.10 (0.36_1.83), p=0.003] was significantly associated with PWV.

Conclusion: In this study, suboptimal ART adherence was associated with PWV. Overall stigma was low and not associated with PWV.

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Perception of Services and Barrier to Retention in Care for Girls and Young Women in Beira, Mozambique. Doctors With Africa CUAMM INGO

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Background: In 2020, Mozambique was the second country in the Sub-Saharan region for new HIV infections: 39.7% occurred among adolescents and young people (15-24 years), disproportionately higher among women (26.4% vs 13.3%). This study aimed to explore the perception of HIV services and the barriers to adherence to the antiretroviral treatment(ART), comparing adolescent girls and young women (AGYW) and pregnant and lactating AGYW (PL-AGYW) with HIV in Beira, Mozambique.

Material and Methods: In June-July 2022 6 focus groups(FG) were conducted, 4 with AGWY with HIV(FG1) and 2 with PL-AGYW with HIV(FG2). The inclusion criteria were being older than 14 years old, being diagnosed with HIV at least by 6 months, and being in care in one of the youth health services supported by Doctors with Africa CUAMM, in Beira. The dimensions explored were access and perception of the service and barriers to adherence to the treatment.

Results: A total of 33 AYGW participated (median age:20 years), of which 12 PL-AGYW. Most of them were still students (19,57.6%), mainly in FG1(15,71.4%). For PL-AYGW, the main difficulty for the adherence was the ART side effects (6,50%), stigma (5,41.6%), and lack of knowledge (3,25%), while in the FG1 the main barriers were psychological factors (7,33.3%), such as depression, low self-esteem, and sense of hopelessness, lack of

food (6,28.6%), lack of family support, problem to take the treatment at the same time of the day, and being negligent (5,23.8%). In both groups, the quality of attendance was the factor most appreciated, while the principal problems were lack of privacy (13,61.9%) and the space of the consultant room (7,33.3%).

Conclusion: AYGW represents a target group for HIV prevention and treatment. The barriers to ART adherence identified among PL-AYGW were different from the other girls, confirming that targeted interventions are needed to address this population. Stigma remained an issue: hence, guaranteeing privacy is crucial in HIV services.

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A Novel Peer-Based Support Approach to Promote Engagement With Care Among Men Who Have Sex With Men (MSM) In South Africa

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Background: Estimates of HIV prevalence among men who have sex with men (MSM) in South Africa are as high as 48%, while estimates from the HIV cascade are that only 41% know their status, 28% are on ART, and 26.5% are virally suppressed. There is high attrition among MSM across all parts of the cascade, but particularly from diagnosis to ART initiation and retention in care.

Material and Methods: Informed by lessons from a previous pilot with general population men, the Coach Mpilo model has been adapted to address gaps around MSM friendly demand creation and service provision. Under the adapted model, MSM living with HIV are trained as coaches and positioned in the community to help other MSM link to HIV testing, prevention, and treatment services. Coaches use their 'true peer' status to create a safe and honest space for MSM. They tailor their approach to each client, rather than following

a set script or programme, and exercise discretion in helping clients to surface and address barriers.

Results: Thus far, nine coaches have engaged 536 men over the course of four months. A total of 340 (70%) men were new on PreP, 119 (24%) were new on treatment, 58 (12%) were returning to treatment, and 19 (4%) were on treatment at the time of entry into the program but requiring additional support. Over 70% of the men supported by the coach have been between the ages of 20 and 45, with 65% identifying as MSM and 35% non-identifying. Coaches have provided varied and tailored assistance, such as appointment scheduling, appointment reminders, follow-up of missed appointments, and provision of psychosocial support for working through challenges around adherence and fears of stigma and discrimination.

Conclusion: The adapted Coach Mpilo model for MSM appears to have the potential to improve engagement in care engagement among MSM, many of whom require but do not always find credible, relatable, non-judgmental sources of support. Piloting of the adapted model has been promising with high acceptability and strong results with regard to engagement and retention in care.

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‘Even a Traditional Healer Cannot Treat Themselves’: Perceived Impact of Wakakosha, a Self-Stigma Intervention for Adolescents and Young Adults Living With HIV in Harare, Zimbabwe

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Background: Self-stigma - negative self-judgements or core beliefs - can result in feelings of shame, worthlessness and self-blame, and impacts social interaction, mental health status and health service

utilisation. We present qualitative findings on the perceived impact of a self-stigma intervention (Wakakosha, ‘You are worth it’). The intervention uses Inquiry-Based Stress Reduction (IBSR) at its core - a unique way of identifying and questioning deeply-rooted self-stigma.

Material and Methods: July-December 2021, thirty community adolescent treatment supporters (CATS, aged 18-24 years old) received a 16-week intervention delivered by local coaches, themselves living with HIV, with support from international facilitators. Every week, IBSR was integrated together with singing and music, art projects and creative expression. January-March 2022, we held individual interviews with CATS (n=12), a focus group discussion with another 12 CATS and key informant interviews with two coaches. We also analysed intervention activities (e.g. letters to self/body). We conducted interpretive thematic analysis to generate themes across the data.

Results: Intervention recipients described previous self-stigma experiences including negative self-judgement. Especially female respondents reported previously shaming their own bodies. Nearly all described previously struggling to come to terms with their emerging sexuality in the context of a life threatening, sexually transmissible infection. However, both intervention recipients and facilitators described a transformative effect of the intervention. CATS described for example, how, despite being peer supporters, the intervention had addressed their own personal challenges, including self-stigma, figuratively stating that ‘Even a traditional healer cannot treat themselves’. CATS described the various coping skills they had acquired. Some wrote letters to their deceased parents asking for forgiveness in relation to previously-held negative thoughts. Others described how letters to self or own body had helped ease their pent-up pain or frustration, including over body image. A coach described how some intervention recipients had gained self-confidence and gone on to enrol for courses.

Conclusion: Addressing self-stigmatising thoughts can help young people living with HIV to recognise their self-judgements and constructively change the way they view themselves. Consequently, they will be empowered to challenge the perspectives of others, manage own emotions, advance themselves, and proactively engage with HIV support services.

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Vulnerability and Dissavings Among Recipients of HIV Care in Zimbabwe. A Call for Social Protection Integration Action

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Background: Social and structural determinants affect access to HIV care, contributing to losses across the cascade of care and reduce patient outcomes. However, financial and food vulnerability, and dissavings experienced by people living with HIV (PLHIV) on antiretroviral therapy (ART) are not routinely monitored. Our objective was to establish the burden of food and financial vulnerabilities on ability to access and adhere to ART among PLHIV enrolled on ART in 15 HIV high-burden districts of Zimbabwe.

Material and Methods: Financial/social vulnerability (lack of food, funds for transport or clinic fees) and dissavings (taken out loan, withdrawn savings, sold assets, reduce food consumption, taken child out of school) impacting ability to access or adhere to HIV treatment were assessed using HIV client satisfaction surveys (CSS) administered monthly among adult recipients of HIV care in 15 districts of Zimbabwe. Data were collected on mobile phones using the CommCare application by trained Community HIV & AIDS Support Agents (CHASA) officers. The data were analysed descriptively using STATA V15.1.

Results: From August-September 2022, 1383 recipients of HIV care completed the CSS of whom, 911 (65.9%) were female. The median age of the respondents was 47 years (IQR:37-51yrs). The majority, 60% (830/1383) experienced at least one form of dissavings ranging from, reduced personal and household food consumption 45.1%; (624/1383), selling of assets 34%; (470/1383) to taking a child out of school 21%; (290/1383). There are disparities in coverage of social protection

interventions vs vulnerabilities reported among recipients of HIV care. Clients with large household sizes and residing in urban areas experienced greater food vulnerability and dissavings.

Conclusion: The majority of recipients of HIV care experience dissavings and vulnerabilities that impact their ability to access or adhere to HIV treatment. Integration of social protection interventions into routine HIV care and treatment has the potential to minimize socio-economic vulnerability and eliminate catastrophic costs for improved treatment outcomes, particularly in urban areas where dissavings and vulnerability are highest.

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Adapting an HIV Stigma Reduction Training to Address Drug-Use Stigma in HIV Clinics in Tanzania

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Background: HIV prevalence among people who use drugs (PWUD) in Tanzania is 4-7 times higher than in the general population, underscoring an urgent need to increase HIV testing and treatment among PWUD. Drug-use stigma within HIV clinics is a barrier to HIV treatment for PWUD, yet few interventions to address HIV-clinic drug-use stigma exist. Guided by the ADAPT-ITT model, we adapted an evidence-based health-facility HIV-stigma reduction intervention to address drug-use stigma.

Material and Methods: We began with formative research to inform initial training curriculum adaptation with 32 in-depth interviews: 18(11M/7F) with PWUD living with HIV; 14 with HIV clinic staff: 7(2M/5F) clinical and 7(3M/4F) non-clinical staff in Dar-es-Salaam, Tanzania. Data analysis was a 2-step process using thematic analysis: rapid qualitative analysis (RQA) to inform

initial curriculum adaptation followed by formal coding using Atlas.ti. An initial draft curriculum was adapted and then refined through iterative steps of review, feedback and revision including a 2-day stakeholder workshop and external expert review.

Results: Four HIV clinic drug-use stigma drivers emerged as key to address in the adaptation. 1) Lack of awareness of the manifestations and consequences of drug-use stigma in HIV clinics (name calling, ignoring PWUD and denial of care); 2) Stereotypes (e.g. all PWUD are thieves, violent, could immediately quit using drugs if they wanted to); 3) Fear of providing services to PWUD (due to stereotypes that PWUD are dangerous); 4) Lack of knowledge about drug use (as a medical condition, availability of medical treatment and hope of recovery). Five, 2.5-hour participatory training sessions were developed with topics varying from: Creating awareness on stigma, including identifying what stigma looks like through pictures; understanding and addressing stereotypes and fears of interacting with PWUD; understanding drug use, addiction, and co-occurring conditions; deepening understanding of drug use stigma, including a panel session with PWUD; and working to create actionable change.

Conclusion: Understanding context specific drivers and manifestations of stigma from the perspective of PWUD and health workers allowed for ready adaptation of an existing evidence-based HIV-stigma reduction intervention. Future steps include a pilot test of the intervention.

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Fatores que Afectam a Retenção de Pacientes nos Cuidados E Tratamento HIV em Barué

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Introdução: Em Junho de 2019, 37.9 milhões de pessoas viviam com HIV a nível global e cerca de 25,6 milhões na África Subsahariana. Moçambique a prevalência do HIV em adultos dos 15 a 49 anos está estimada em 13.2%. Em 2019, a província de

Manica, a retenção aos 12 meses foi de 61% e o Distrito de Barué teve 67%. Manica tinha meta 68%, e ambos estão abaixo da meta prevista. Estudos passados, encontraram como factores a insegurança alimentar, discriminação e dificuldade de acesso à unidade sanitária. Este estudo teve como objectivo, compreender os factores sociais que afetaram a retenção de pacientes nos cuidados e tratamento do HIV no Distrito de Barué.

Metodologia: Trata-se de um estudo transversal, qualitativo, realizado em 10 US que oferecem TARV no Distrito de Barué, entre de Novembro-Dezembro de 2020. Foram inquiridos 42 participantes, nomeadamente, líderes comunitários, provedores de saúde, gestores de unidade sanitária, representantes de base organização comunitária. Para recolha de dados, usou-se um guião de entrevista contendo questões sobre barreiras e facilitadores da retenção. Fez-se análise dos conteúdos transcritos através do Microsoft Excel.

Resultados: Observou-se que os factores que servem barreira a retenção de pacientes nos cuidados e tratamentos de HIV são diversos. A nível individual os factores foram longa distância entre a residência e a US e falta de alimentação. A nível familiar foi a não revelação do seroestado aos parceiros por medo de divórcio. A nível da comunidade o factor foi o estigma e discriminação. A nível da US foram a mudança de residência, falta de privacidade e enchentes. “Nas unidades sanitárias os locais de testagem e seguimento do HIV estão misturados com as consultas de outras doenças ou outros cuidados de saúde, pondo em causa a privacidade durante o atendimento de PVHIV”.

Conclusão: Existem muitos factores afectaram negativamente na retenção de pacientes com HIV e muitos colaboradores estão a trabalhar nestes locais. Com isso, recomenda-se aos gestores das unidades sanitária, junto aos parceiros e líderes comunitários a considerar estes factores e desenvolver ações para o apoio psicossocial a nível das famílias, comunidades e US.

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Comparison of New HIV Diagnosis and Teenage Pregnancy in DREAMS and Non-DREAMS Districts, Malawi 2017–2022

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Background: The Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe (DREAMS) program provides a package of core interventions to address key factors that make adolescent girls and young women (AGYW) vulnerable to HIV. DREAMS was introduced in Malawi in 2016 and scaled up in three districts by 2018, with implementation by the President's Emergency Plan for AIDS Relief (PEPFAR) partners. The objective of this analysis is to evaluate the impact of DREAMS on reducing HIV new infections and teenage pregnancies among AGYW after over half a decade of implementation in Malawi.

Material and Methods: Using PEPFAR Measure Evaluation and Reporting data, a two-sample test of proportions on new HIV diagnosis and teenage pregnancy (among 15-19 years) for DREAMS districts (Blantyre, Machinga, Zomba) compared to non-DREAMS (Chikwawa, Mangochi, Lilongwe) was conducted to determine if proportions between timepoints (2017 quarter 2 (baseline) and 2022 quarter 3 (endline)) or populations (DREAMS and non-DREAMS districts) had changed.

Results: Among AGYW aged 15-19 in the DREAMS districts (117,472), the percentage of new HIV diagnoses decreased from 2.8% at baseline to 0.6% at endline, representing a percentage change of 77.8% ($p<0.001$). A decline of 58.1% occurred among AGYW in non-DREAMS districts (140,000), from 1.6% to 0.7% ($p<0.001$). The difference in the percentage change among AGYW aged 15-19 in DREAMS versus non-DREAMS districts was statistically significant ($p=0.003$). The percentage of

teenage pregnancies among AGYW attending antenatal care (ANC) in the DREAMS districts decreased from 25.4% to 22.3% (percentage change 12.2%; ($p<0.001$)). A decline of 6.5% occurred among women attending ANC visits in non-DREAMS districts, from 24.7% to 23.1% ($p<0.001$). The difference in the percentage change of AGYW attending ANC visits in DREAMS versus non-DREAMS districts was not statistically significant.

Conclusion: If scaled up intensely, the DREAMS comprehensive package of interventions could have a greater impact on HIV transmission among vulnerable AGYW.

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How Do Outcomes Compare Between Older Men and Women Enrolled in an HIV Treatment Program in Southern Nigeria: A Retrospective Analysis

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Background: The presence of highly efficacious treatment options has led to a growing number of older people living with HIV in Sub-Saharan Africa. We examined the demographic, clinical characteristics and treatment outcomes of older adults living with HIV in Nigeria.

Materials and Methods: This retrospective cohort study involved older adults (aged ≥ 50 years), at least one year on antiretroviral therapy (ART) as of September 2022 across 154 health facilities supported by PEPFAR through USAID in Akwa Ibom and Cross River States, Nigeria. Demographic (age, education, marital status, and residence area) and treatment characteristics (care delivery point, ART regimen, recent blood pressure, CD4 count at ART initiation, and viral load suppression

[<1000copies/ml]), were abstracted from electronic medical records and compared by sex using Chi-square test. Log-rank test was used to assess differences in retention rates (i.e., being active) as of September 2022, with an apriori expectation of a 95% retention and viral suppression rates. All analysis were conducted on SPSS vs.24.

Results: There were 16,420 older adults living with HIV (10.8% of the treatment cohort) at the time of the study. Females constituted 53.8% (n=8,834); 60.6% were resident in rural areas; and 54.1% had secondary education. Mean duration on ART was 3years; 59.9% (n=9,831) received treatment at out-of-facility locations and 99.5% were on a first-line ART regimen at the time of the study. Median [IQR] nadir CD4 count was 496[286-699] cells/ml, with men having lower baseline CD4 [13.4% vs 10.2%, p-value=0.004]. The prevalence of hypertension was 9.6%, with men less likely to be hypertensive [8.0% vs 11.1% p-value<0.001] than females. Men were also more likely to receive ART at out-of-facility models than females [65.7% vs 54.8% p-value<0.001]. Overall, retention as of September 2022 was 96.4% while viral suppression was 98.7% and did not differ significantly by sex [retention: p=0.901; VS: p=0.056].

Conclusion: Older adults living with HIV had good treatment outcomes (>95% retention and viral suppression). More emphasis should be on improving screening, diagnosis and management of non-communicable diseases like hypertension.

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Do We Have Enough Evidence to Support Safe Use of Cabotegravir, Lenacapavir and Islatravir for Women of Reproductive Potential?

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Background: Worldwide, 54% of people with HIV are female. However in pivotal HIV clinical trials, only 11% are female. Safety databases to support use of HIV drugs for women can be very limited. Cabotegravir is already approved for use in women in US/Europe and some African countries. The Antiretroviral Pregnancy Registry (APR) requires at least 600 pregnant women with outcomes from live births to establish drug safety in pregnancy.

Material and Methods: The database www.clinicaltrials.gov was searched for clinical trials of cabotegravir, islatravir and lenacapavir enrolling >100 individuals. All trials enrolling women were evaluated to assess inclusion of pregnant women, contraception and follow up after pregnancy. The APR was searched for birth outcomes on each drug.

Results: For cabotegravir, there were 18 clinical trials (2 completed, 16 ongoing, total n=12,545). All 18 trials excluded pregnant women. Women becoming pregnant in several CAB-LA trials had to discontinue cabotegravir immediately. In the HPTN 084 open-label extension, birth outcomes were reported for 63 women, with 31 live births. An extension to HPTN 084 allows pregnant women to remain on cabotegravir after consenting, with PK data expected by Q42023, and short-term safety data from 100+ pregnancies by Q42024. By July 2022, the APR showed 1 birth defect from 6 live births reported after first trimester cabotegravir exposure (risk=16%, 95% CI=0.4%–64%). For islatravir, there were 8 trials (all ongoing, total n=5888). All 8 trials excluded pregnant women. For lenacapavir, there were 4 clinical trials, all ongoing (n=6000). Most lenacapavir trials excluded pregnant women but the PURPOSE-1 prevention trial has no contraceptive requirement. There were no APR results for lenacapavir or islatravir.

Conclusion: The safety databases are currently insufficient to support use of cabotegravir, lenacapavir and islatravir for women who are already pregnant, or likely to become pregnant. Cabotegravir was approved in the US in December 2021, but pregnant women are still being excluded from almost all clinical trials. It is unlikely that the APR will generate reliable pregnancy safety data before 2030 for either cabotegravir, islatravir or lenacapavir. Other methods and databases may be needed to generate this safety data.

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Using Self-Sample-Collection Kits for High-Risk Human Papilloma Virus Screening Among Women Living With HIV at Kiruddu National Referral Hospital in Uganda

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Background: High risk human papillomaviruses (HPV) variants are responsible for 70%-80% of cervical cancer (CaCx) cases in developing countries. The incidence of CaCx among women living with HIV (WLHIV) in Uganda is high at 30 per 100,000 population. Self-sample collection kits for high-risk HPV variants can identify WLHIV at risk of CaCx and therefore facilitate early diagnosis and treatment. We describe how this intervention was implemented at our facility and report the proportion of WLHIV with a positive HPV test and associated factors.

Material and Methods: All WLHIV accessing care at Kiruddu National Referral Hospital were eligible for CaCx screening using the self-sample collection HPV screening kit (ThinPrep® Pap Test). WLHIV came on any Thursday or Friday for HPV screening. A clinician educated women on how to use the test kit. WLHIV self-collected the sample which was delivered to the lab thereafter. Results were received within two working days and were entered in the client charts. Those that tested positive were called back for visual inspection with acetic acid and treated using thermocoagulation if indicated. In this analysis, we performed a cross-sectional chart and register review focusing on women that had used the HPV self-sample collecting kits between June to December 2022. Factors associated with a positive HPV test were determined by logistic regression analysis.

Results: We reviewed charts of 468 WLHIV whose median (IQR) age was 37 (37-44) years and had

been on antiretroviral therapy for a median (IQR) of 43 (19-106) months. The median (IQR) baseline CD4 count was 291 (116-446) cells/mm³ /ml. HPV was prevalent in 110 (23.6%) WLHIV. Factors associated with a positive HPV test were age ≥50 years (odds ratio [OR] 3.1, 95% CI: 1.1-8.9, p=0.033), symptoms of TB (presumptive TB) (OR 4.1, 95% CI: 1.1-15.1, p=0.033), and CD4 T-cell count <200cells/microliters (OR 5.2, 95% CI 1.1-14.7), p=0.002).

Conclusion: Almost a quarter of WLHIV had high-risk HPV variants identified through the self-sample collection kit. WLHIV aged ≥50 years, those with a baseline CD4 T-cell count <200cells/microliter and those with presumptive TB should be prioritized for HPV screening with self-sample collection kits.

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Bone Mineral Density Changes in Postpartum Mothers Living With HIV on ART [76/85]

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Background: In the IMPAACT PROMISE 1077BF study, we found that postpartum declines in bone mineral density (BMD) during breastfeeding were greater in African women living with HIV (WLWH) receiving TDF-based ART compared to those not on ART. We describe postpartum BMD changes in breastfeeding African women in the PROMISE trial who then enrolled in the PROMOTE observational cohort.

Material and Methods: In four African countries, former PROMISE participants were enrolled in the PROMOTE study. Total hip and lumbar spine (LS) BMD were assessed by Dual Energy X-ray Absorptiometry (DXA) after delivery (week 0) and at postpartum week 74 in PROMISE, then at PROMOTE entry. Country-specific Z-scores were created by internal standardization to the PROMISE DXA result at delivery. Linear mixed models adjusted for country were used to estimate the

average 5-year change in hip and LS BMD Z-scores after postpartum week 74.

Results: At PROMOTE entry, 459 women had available DXA data from PROMISE. Median (IQR) age was 32 (29-36), BMI 24.6kg/m² (22.0-29.3), parity 3 (2-4), months on ART in PROMISE 24.8 (14.2-34.7). HIV-1 viral load was <1000 copies/mL in 93%, 92% were on TDF-ART. In the median 3.3 (2.2-3.7) years since postpartum week 74, 19% had a new pregnancy and 13% were still lactating at PROMOTE entry. At entry, mean (SD) BMD was 0.96 (0.12) for LS and 0.95 (0.12) g/cm² for hip. LS BMD Z-scores increased by 31% per 5 years (95%CI: 22%, 40%) and hip by 8% per 5 years (1%, 16%), adjusted for country. Compared to women without, women with new pregnancies had lower annualized rate of change in BMD: mean difference (95%CI) LS = -0.057 (-0.078,-0.035) and hip = -0.032 (0.053,-0.011).

Conclusion: Compared to women who had new pregnancies, WLWH who had no new pregnancies had greater LS BMD recovery, but not hip, in the 3 years after week 74 postpartum.

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A Decade in Changing Trends in HIV Prevalence and Incidence in Pregnant Women in Southern Mozambique

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Background: Monitoring HIV rates at the antenatal care (ANC) clinic is needed for evaluating and targeting HIV preventive interventions in this vulnerable group. This study describes the prevalence and incidence trends of HIV over 10 years in pregnant women attending the ANC clinic in southern Mozambique.

Material and Methods: We analysed data from three studies carried out in HIV-infected pregnant women attending the ANC clinic between 2010 and 2021. HIV incidence was estimated between prevalence points using two validated methods. Method one was based on mortality rates and method two was based on survival information after HIV infection. The trend over time was obtained by fitting a log-regression model. Changes in the prevalence of anemia and rates of HIV vertical transmission during same period were also analyzed.

Results: Overall, 10392 pregnant women attending their first ANC visit were included in the analysis. There was a decrease of the HIV prevalence to 21.4% (95% CI: 19.6-23.2%) in 2021, after a peak of 35.3% (95% CI: 30.1-40.8%) in 2016. The peak of HIV tended to increase with age group from 2010 to 2021. The prevalence was the highest in women aged 20-25 in 2010 and then became the highest in those aged 35-40 in 2021. The overall incidence significantly increased from 3.7 per 100 person-years during 2010-2016 to 10.1 per 100 person-years in 2018-2019 but then subsequently decreased to 6.2 per 100 person-years in 2020-2021.

Conclusion: In the last decade, HIV burden in pregnant women has declined in this area of southern Mozambique. However, HIV prevalence remains unacceptably high in this particularly vulnerable group, calling for a need to strengthen HIV preventive strategies to ending HIV/AIDs in the country.

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Real-world Experience With the 2-Drug Regimen Dolutegravir and Lamivudine in Women With HIV: A Systematic Literature Review

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Background: Women represent >50% of the global population with HIV but are underrepresented in clinical trials, leading to gaps in the scientific understanding of treatment considerations for women living with HIV (WLWH). Furthermore, treatment considerations for WLWH evolve during their life span. In 48-week pooled analyses of phase 3 trials, 113 treatment-naïve WLWH initiating the 2-drug regimen dolutegravir + lamivudine (DTG + 3TC; GEMINI-1/-2) and 133 virologically suppressed WLWH switching to co-formulated DTG/3TC (TANGO, SALSA) achieved or maintained high rates of virologic suppression with good tolerability. Real-world studies can help address underrepresentation in clinical trials.

Material and Methods: A systematic literature review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement. Real-world studies of DTG + 3TC (dosed separately or as a fixed-dose combination) in treatment-naïve and experienced people with HIV were retrieved from January 2013 to February 2022.

Results: Overall, 122 publications of real-world studies from 44 unique cohorts reported on DTG + 3TC use, representing 8034 people with HIV. Of these, 30 studies reported baseline sex at birth, representing 1512 WLWH; 4 studies reported outcomes in WLWH (N=254; 240 virologically

suppressed and 14 treatment-naïve at DTG + 3TC initiation), including 4 on effectiveness, 2 on safety, and 1 on tolerability. High rates of virologic effectiveness in WLWH on DTG + 3TC were observed across identified studies (96%-100%), and there was no significant difference in odds of virologic suppression by sex at birth (odds ratio, 1; 95% CI, 1-3; P=0.995). Two studies reported higher discontinuation rates in women (10%-15%) vs men (3%-5%). No real-world studies reported on outcomes related to weight, effectiveness and birth outcomes in pregnancy, or addressed data gaps for specific groups of women across the age or gender spectrum.

Conclusion: Available real-world evidence for WLWH using DTG + 3TC supports results from phase 3 clinical trials, demonstrating high virologic effectiveness in this underrepresented group. The current paucity of real-world data underscores the identified need to recruit women into well-designed studies that assess outcomes beyond virologic effectiveness to properly address data gaps for WLWH.

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Systematic Review of the Determined, Resilient, Empowered, AIDS-Free, Mentored, and Safe (DREAMS) Initiative Among Adolescent Girls and Young Women

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Background: Adolescent girls and young women (AGYW) in sub-Saharan Africa face a high risk of acquiring HIV compared to male peers. To mitigate this risk, the Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe (DREAMS) initiative, a comprehensive, multi-layered HIV prevention program, was developed and implemented across 15 countries. We conducted a systematic review to assess the effects of DREAMS on health-related outcomes, access to services, and sexual risk behaviors.

Material and Methods: We searched scientific literature on Medline, Embase, Cochrane Central, Cinahl, and PsycInfo databases, and relevant conference abstracts (e.g., CROI, IAS, ICASA). The search was restricted to papers published between 1 January 2014 and 1 September 2022, and no restrictions were placed on the language of publication or publication status. We included studies with a concurrent or historical comparison group. The risk of bias was assessed using the Newcastle-Ottawa Scale.

Results: Of 288 studies screened, 18 met eligibility criteria from 8 countries; 13 were cohort and 5 were cross-sectional studies. The definitions of DREAMS participation/exposure, outcomes, and measurements varied widely. A total of 35 outcomes were reported; the most commonly reported were knowledge of HIV status or testing (n=9) and condom use or self-efficacy (n=9). Five (56%) studies reported significant increases in knowledge of HIV status or testing compared to the control group. Similarly, 5 (56%) studies reported significant increases in condom use or self-efficacy. HIV incidence was reported in 3 studies; two reported no significant change, and one from South Africa reported a significant reduction for AGYW aged 15-24 (aRR 0.74, 95% CI 0.62–0.87) compared to pre-DREAMS implementation. HIV prevalence was included in 3 studies, where 2 (67%) reported a significant decrease compared to the control group. Only 3 studies reported PrEP-related outcomes, with mixed results.

Conclusion: Included studies showed mixed results on the effects of DREAMS across different outcomes. Heterogeneity in definitions of exposure (DREAMS program), comparison groups, outcomes, and measurements limited the ability to compare and quantify the effects of DREAMS. Embedding a comprehensive evaluation framework into DREAMS program could contribute to

systematically measuring the impact of this comprehensive and multi-layered program across different settings.

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Burden, Clinical Presentation and Risk Factors of Advanced HIV Disease in Pregnant Mozambican Women

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Background: Information on the frequency and clinical features of advanced HIV disease (AHD) in pregnancy and its effects on maternal and perinatal outcomes is limited. The objective of this study was to describe the prevalence, clinical presentation and risk factors for AHD in pregnancy, and to assess the impact of AHD in maternal and perinatal outcomes in Mozambican pregnant women.

Material and Methods: This is a prospective and retrospective cohort study including HIV-infected pregnant women who attended the antenatal care (ANC) clinic at the Manhiça District Hospital between 2015 and 2020. Women were followed up for 36 months. Levels of CD4+ cell count were determined to assess AHD immune-suppressive changes. Risk factors for AHD were analyzed and the immune-suppressive changes over time and the effect of AHD on pregnancy outcomes were assessed.

Results: A total of 2458 HIV-infected pregnant women were enrolled. The prevalence of AHD at first ANC visit was 14.2% (349/2458). Among women with AHD at enrolment, 76.2% (260/341) were on antiretroviral therapy (ART). The proportion of women with AHD increased with age reaching 20.5% in those older than 35 years of age (p<0.001). Tuberculosis was the only opportunistic infection diagnosed in women with AHD [4.9%

(17/349)]. There was a trend for increased CD4+ cell count in women without AHD during the follow up period; however, in women with AHD the CD4+ cell count remained below 200 cells/mm³ ($p < 0.001$). Forty-two out of 2458 (1.7%) of the women were severely immunosuppressed (CD4+cell count < 50 cells/mm³). No significant differences were detected between women with and without AHD in the frequency of maternal mortality, preterm birth, low birth weight and neonatal HIV infection.

Conclusion: After more than two decades of roll out of ART in Mozambique, over 14% and nearly 2% of HIV-infected pregnant women present at first ANC clinic visit with AHD and severe immunosuppression, respectively. Prompt HIV diagnosis in women of childbearing age, effective linkage to HIV care with an optimal ART regimen and close monitoring after ART initiation may contribute to reduce this burden and improve maternal and child survival.

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Prevalence of Unmet Need for Family Planning and Unintended Pregnancies Among Women of Reproductive Age Living With HIV in Sub-Saharan Africa: A Systematic Review and Meta-Analysis

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Background: The World Health Organization estimated that 61% of all unintended pregnancies end with induced abortions, 45% of which were unsafe. Family planning is an effective intervention for women living with HIV who do not desire to

have children to reduce vertical transmission and infant and pregnancy-related mortality. We aim to evaluate the prevalence of unmet need for family planning (UFP) and unintended pregnancies among women living with HIV in sub-Saharan Africa.

Material and Methods: This was a systematic review and meta-analysis among women living with HIV. PubMed, Cochrane Library, Google Scholar, and CINAHL were searched from March 2004 to December 2022. UFP was defined as women who were sexually active and did not desire to have additional children (unmet need for limiting), or who delayed their next pregnancy (unmet need for spacing) but were not using any contraceptive methods. Forest plots were used to present the pooled prevalence and 95% confidence interval (CI). Analyses were performed in STATA.

Results: A total of 31 articles with 14,156 women living with HIV were included in the final analysis. Overall, the pooled prevalence of UFP was 29.1% (95%CI, 25.4–33.0). Pooled prevalence of unmet need for spacing was 12.0% (95%CI, 8.9–15.5) and 14.3% (95%CI, 11.5–17.7) for limiting. Prevalence of UFP was higher in southern compared to eastern Africa (39.1% vs. 28.5%) and in studies done before 2010 compared to on or after 2020 (34.3% vs. 27.3%). The pooled prevalence of unintended pregnancy was 17.2% (95%CI, 9.0–27.2).

Conclusion: Nearly three in ten women of reproductive age living with HIV in Africa have UFP and this proportion has been consistent for the past 15 years. Given the illegal nature of abortion in most African countries, efforts to prevent unsafe abortions from unintended pregnancies are needed to minimize UFP among women living with HIV.

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Integrating Mental Health Screening for People Living With HIV in Nampula Province, Mozambique

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Background: Despite important advances in the HIV epidemic response, there are remaining challenges in Mozambique, with only 64.1% of the people living with HIV (PLHIV) having viral load suppression. PLHIV have an increased risk of mental health conditions, directly impacting treatment adherence. In March 2021, Mozambique Ministry of Health (MOH) launched a national mental health screening and treatment pilot for PLHIV, the Common Element Treatment Approach (CETA). ICAP, in collaboration with provincial health leadership, implemented this approach at two health facilities (HF) in Nampula Province.

Material and Methods: ICAP supported patient and data flow review, allocated monitoring and evaluation materials, trained HF staff, deployed additional staff, and provided mentoring and supportive supervision. Lay counselors provided systematic mental health screening for PLHIV newly enrolled on antiretroviral treatment using a simplified mental health screening tool (“Fica Bem”), which included topics such as substance abuse, trauma, anxiety, depression and suicidal thoughts. PLHIV who screened positive for mental health conditions (i.e., screened positive for one or more of the following conditions: suicidal thoughts or ≥ 7 points for anxiety/depression or ≥ 3 points for substance use) were further assessed by a psychologist or psychiatrist with a comprehensive CETA tool. Those with a confirmed mental health condition received specialized follow-up with two or more monthly sessions. We present implementation data from March 2021 and September 2022.

Lessons-Learned: A total of 4,194 PLHIV were newly enrolled on treatment; 85% (3,649/4,194) were screened with “Fica Bem” tool and 16% (579) screened positive. Of those, 99% (572/579) were screened with the CETA tool, and 27% (154) were confirmed to have a mental health condition by psychologist/psychiatrist. Of those, 100% (154) had anxiety and depression, 19% (30) suicidal thoughts and 23% (36) substance abuse.

Conclusion: The national pilot demonstrated that anxiety/depression have been more commonly identified among PLHIV at the selected HF. The low percentage of clients who had mental health condition confirmed, when compared with the literature, reinforce the need to strengthen the implementation of this strategy, improving quality of screening with timely identification of mental health conditions and ensuring adequate follow-up to enhance quality of life and health outcomes.

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Enhanced Adherence Counselling Linkage, Completion Rates and Viral Load Suppression Among People Living With HIV in Africa: A Systematic Review and Meta-Analysis

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Background: In 2016, the World Health Organization (WHO) recommended adherence assessment among people living with HIV on ART with persistent viremia (viral load > 1000 c/ml). The recommendation requires implementation of at least three enhanced adherence counselling (EAC) sessions with the goal of achieving 70% viral load suppression (VLS) following its implementation. We

summarized pooled estimates of EAC linkage, completion rate, VLS and compared EAC linkage, EAC completion on VLS among people living with HIV in Africa.

Material and Methods: This was a systematic review and meta-analysis among people living with HIV. PubMed, Cochrane Library, Google Scholar, and CINAHL were searched from January 2015 to December 2022. Those who attended three EAC sessions were considered to have completed and VLS was defined as HIV RNA < 1000 copies/ml. Forest plots were used to present the pooled proportions with a 95% confidence interval (CI). All analyses were performed on STATA.

Results: A total of 12 studies (7-cohorts, 4-cross-sectional and 1-mixed method) were included in the final analysis. Overall, the pooled EAC linkage was 85.1% (95% CI 74.6 – 93.2), EAC completion was 63.6% (95% CI 46.7 – 78.9) and VLS was 51.0% (95% CI 44.2 – 57.9). Linkage to EAC was associated with increased chance of achieving VLS compared to not linking to EAC (RD=0.09; 95%CI: 0.00-0.18; p = 0.05). Compared to those who did not complete EAC sessions, those who completed were more likely to be virally suppressed, although results were not statistically significant, (RD=0.07; 95%CI: -0.08-0.23; p = 0.36). Pooled estimates of VLS were similar for studies involving adolescents, adults and both adults and children, [54.1% (95% CI 30.3 – 77.0); 54.5% (95% CI 51.6 – 57.3); and 49.8% (95% CI 42.4 – 57.3) respectively].

Conclusion: Among people living with HIV eligible for EAC, nearly 15% were not linked to EAC services and 36% did not complete three EAC sessions. Although linkage was associated with increased chance of achieving VLS, the overall VLS was less than that recommended by WHO. In addition to EAC, other interventions are needed to support persons with persistent viremia in the efforts of achieving HIV epidemic control.

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HIV-1 Integrase Resistance Associated Mutations and the Use of Dolutegravir in Sub-Saharan Africa: A Systematic Review and Meta-Analysis

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Background: As sub-Saharan Africa (SSA) countries are transitioning to dolutegravir (DTG)-based ART, baseline data are required for optimal monitoring of therapeutic response. In this frame, we sought to generate up-to-date evidence on the use of integrase-strand transfer inhibitors (INSTI) and associated drug resistance mutations (DRMs) within SSA.

Material and Methods: In this systematic review and meta-analysis, we included randomized and non-randomized trials, cohort-studies, cross-sectional studies, and case-reports published on INSTI or integrase DRMs in SSA. We included studies of patients exposed to DTG, raltegravir (RAL) or elvitegravir (EVG). Primary outcomes were "the rate of virological control (VC:<50copies/ml)" and "the presence of DRMs" on INSTI-based regimens among patients in SSA. We synthesised extracted data using subgroup analysis, and random effect models were used where appropriate. Additional analyses were conducted to assess study heterogeneity. Protocol registration number (PROSPERO): CRD42019122424.

Results: We identified 1,916 articles/citations through database searches, of which 26 were included in the analysis pertaining to 5,444 patients

(mean age: 37±13 years), with 67.62% (3681/5444) female. Specifically, 46.15% (12/26) studies focused on DTG, 26.92% (7/26) on RAL, 23.08% (6/26) on both DTG and RAL, and 3.85% (1/26) on EVG. We found an increasing use of DTG overtime (0% before 2018 to 100% in 2021). Median treatment duration under INSTI-based regimens was 12 [9–36] months. Overall, the rate of VC was 88.51% [95%CI: 73.83–97.80] with DTG vs. 82.49% [95%CI: 55.76–99.45] and 96.55% [95%CI: 85.7–100.00] with RAL and EVG, respectively. In univariate analysis, VC with DTG-containing vs. other INSTI-regimens was significantly higher (OR=1.44 [95%CI: 1.15–1.79], p=0.0014). Regarding INSTI-DRMs, 13 studies highlighted the presence of major mutations at failure (T66A, T66I, T66V, G118R, E138A, E138K, E138Q, G140A, G140S, Y143C, Y143H, Y143R, Y143S, S147G, Q148R, Q148K, N155H, N155D, G163R and R263K); the only DTG resistance-signature were G118R and R263K.

Conclusion: In SSA, DTG presents a superiority effect in VC compared to other INSTIs. Nonetheless, the early detection of INSTI-DRMs calls for sentinel surveillance for a successful transition and a sustained efficacy of DTG in SSA.

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Virological Outcomes and Associated Factors Among Young Children Living With HIV Newly Initiating or Switching to Pediatric Dolutegravir in Southern Mozambique

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Background: Pediatric Dolutegravir (pDTG) 10mg was rolled out for children <20 kg in Mozambique in 2022. We aimed to assess HIV-1 viral load suppression (VLS) and its associated factors among

children newly initiating or switching to pDTG in Mozambique.

Material and Methods: We conducted a retrospective cohort study involving children aged <9 years, weighing <20kg or unknown weight, and who were newly or currently enrolled in HIV services at 16 health facilities in Gaza and Inhambane provinces. Data were abstracted from electronic and paper-based clinical sources between October-November 2022 for the time period January-September 2022. VLS was defined as HIV-1<1000 copies/mL approximately six months after antiretroviral therapy (ART) initiation or switch. A logistic regression model was used to assess predictors of VLS and pDTG initiation.

Results: A total of 1,341 children were eligible for pDTG initiation/switch during the study, of which, 207 (15.4%) were not initiated. Twelve children had a recorded weight of ≥20 kg and were started on pDTG for a total sample of 1,353 children. The median age of those who were started on pDTG was significantly younger [1.7 years (IQR 0.8-4.3)] compared to those who switched [4.3 years (2.8-5.8, p<0.0001)]. Those not started on pDTG were more likely to have been on ART for ≥2 years (79.5% vs. 54.4%, p<0.0001) and have an unknown weight (76.8% vs. 3.2%, p<0.0001). Factors associated with the pDTG switch were younger age [OR=0.52 (0.47-0.57), p<0.001] and having a weight recorded in clinic records [OR=99.28 (62.68-157.25), p<0.0001]. In total, 35.0% (n=294/840) of children on pDTG for ≥5 months had a viral load (VL) result. Overall, 75.5% (n=222/294) of children with a VL result available after ≥5 months were virally suppressed; among 230 (78.2%) with pre-DTG VL results, 130 (56.5%) were virally suppressed. VLS predictors were older age [OR=1.18 (1.03-1.34), p<0.02] and a previously suppressed result [OR=2.27 (1.27-4.06), p<0.01].

Conclusion: This evaluation has shown an improvement in VLS among children on pDTG and highlights opportunities to strengthen the rollout of new treatments and formulations, including timely transition for weight-eligible children and greater adherence to VL monitoring schedules.

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High Treatment Continuity Established Among People With HIV Devolved to Community Pharmacy Antiretroviral Refill Program (CPARP) In Southern Nigeria

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Background: In 2018, PEPFAR through USAID supported the implementation of a community pharmacy ART refill program (CPARP), a sustainable financing initiative, leveraging private pharmacists to serve as satellite pharmacies to public hospitals and provide ARV refills to recipients of care. Our study aims to assess continuity in treatment outcomes for multi-cohort of people living with HIV (PLHIV) devolved to CPARP in Akwa Ibom state, Nigeria.

Material and Methods: Stable clients (at least 12 months on ART, viral load <1000 copies/ml) who presented for refills were introduced to the CPARP model. Those who were willing and able to pay were given a list of community pharmacies to choose from, signed a consent form and were entered into a devolvement register. Clients paid about (N1000 [<3] per refill visit) towards human resource and administrative costs, while ARVs are provided free. The clients were on six-monthly refills and the community pharmacies were responsible for client tracking; requesting refill medications and documentation on a monthly basis. We analysed data for clients devolved to CPARP between January 2018 to December 2021 across 20 health facilities in Akwa Ibom State, Nigeria. We determined the 12-month retention rate - proportion of those devolved and accessing their refills through the CPARP model. We defined optimal retention based on a priori expectation of a 95% PEPFAR threshold for retention. All analyses were conducted using SPSS vs 24, with a significant p-value < 0.05.

Results: A total of 3,590 PWH [males = 1,304; Females = 2,286] were devolved to the CPARP model (2017=415, 2018=383, 2019=242, 2020=511, 2021=2,039). Median age at devolvement was 38 years (IQR: 32-45 years) and average duration on ART was 4 years (2-7 years). Overall, 12-month retention rate was 95.6% (2017=91.4%, 2018=92.0%, 2019=95.3%, 2020=96.9%, 2021=98.3%) [Log Rank (Mantel-Cox) test = 6.5; p-value=0.17]. Of the 132 client losses, only 3 voluntarily dropped out of the program (35 died, 34 interrupted treatment, 11 stopped treatment, 52 migrated to other locations).

Conclusion: The CPARP model is a self-sustaining model for retaining clients on treatment. ART programs that are heavily reliant on donor funding should consider these models for adoption.

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Are They Still in Care and Suppressing? Treatment Outcomes of the Youth Two Years After Graduating From Tiwale Teen Club at Umodzi Family Centre Clinic, Blantyre, Malawi

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Background: Several studies have demonstrated that teen club differentiated service delivery model plays a significant role in improving treatment outcomes among adolescents in the teen club as compared to adolescents in general HIV care clinic. Lighthouse trust, introduced Tiwale teen club in 2018 as one way of addressing the challenges adolescents face when accessing HIV care, at one of its Centers of Excellence Clinics, Umodzi Family Centre clinic (UFC) situated at Queen Elizabeth central Hospital in Blantyre. However, little is

known as to whether these adolescents maintain the same treatment outcomes after their transition to adult care.

Material and Methods: We reviewed records of youth who graduated from Tiwale teen club after turning 20 years old in November 2020 to assess their treatment outcomes. The treatment outcomes of interest which we evaluated were, alive on ART and viral load suppression. We looked at their viral load at 2 time points, (1) at the time of graduating and (2) after clocking two years in adult clinic. Viral load suppression was defined as having a latest result of less than 1000 copies/ml. Retention was defined as having all clients retained into ART care, including those who registered to be, transferred-out or died. Data was collected from adolescent data base and the Electronic Medical Records System (EMRS). Data analysis was done using STATA 17.0.

Results: We had 284 adolescents who transitioned to adult care in November 2020. Of these 112 (43%) were males. By 31st December 2020, viral load coverage was at 94% and suppression rate at 86%. After two years of adult care, in December 2022, viral load coverage was 91% and viral suppression at 89%. During the two-year post-transitioning, retention had constantly been within 94% to 99%.

Conclusion: The findings show that adolescents who graduated from teen club still maintained better treatment outcomes even after transition to adult care clinic. This suggests that the impact of teen club has implications on treatment outcomes even after one transition to adult HIV care.

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Community Delivery of Advanced HIV Disease Package of Care in Nigeria

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Background: The WHO package of care for Advanced HIV Disease (AHD) includes screening, prophylaxis and treatment for major opportunistic infections such as tuberculosis and cryptococcal infection, rapid initiation of ART, and intensified adherence support interventions. Nigeria adopted the package of care in its 2020 guidelines and since then has scaled up its implementation across all comprehensive HIV treatment facilities. We describe Nigeria's experience with providing these services in the community under the Accelerating Control of the HIV Epidemic Project in Akwa Ibom and Cross River States, funded by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) through the U.S. Agency for International Development (USAID).

Material and Methods: Community teams were trained on the WHO AHD diagnostic algorithm and the use of Visitect Lateral flow immunochromatographic assay for CD4 estimation, urine lipoarabinomannan assay (LF-LAM) for tuberculosis diagnosis and Cryptococcal antigen (CrAg) test kits for diagnosing Cryptococcal meningitis. A simplified algorithm was developed for use by the teams. The community teams were linked to health facilities in a hub-and-spoke model for supplies and reporting. When LF-LAM kits were not available, sputum samples were collected for GeneXpert or clients referred for Chest X-ray for tuberculosis diagnosis. Those who test positive for any of these tests were then referred to the health facility for further diagnostic evaluation and treatment.

Results: 66 community teams were supported to provide an AHD package of care in Akwa Ibom and Cross River States. A total of 320 persons were diagnosed with AHD between July and December 2022, comprising 69 children (<5 years), 18 persons using WHO clinical stage 3 or 4, and 233 using CD4 count <200 cells/uL. 45 persons had the CrAg test in the community, all testing negative; while 27 persons had LF-LAM tests in the community, with 5 positives. 108 persons received GeneXpert tests with 8 diagnosed with tuberculosis, while 3 were referred and received Chest Xray for tuberculosis diagnosis.

Conclusion: The scale-up of the AHD package of care to all care entry points is critical to ensuring quality care and improved outcomes for all people with HIV.

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Determinants of Serious Adverse Drug Reactions of Antiretroviral Therapy Among People Living With HIV in Nigeria

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Background: Serious adverse drug reactions (SADRs) to antiretroviral therapy can be life-threatening leading to disability and death. They can also affect HIV treatment adherence, prevent viral suppression and contribute to HIV associated morbidity and mortality. However, there is limited evidence to the patterns and risk factors of SADRs among persons on antiretroviral therapy in Nigeria. We aimed to investigate the determinants of serious adverse drug reactions of antiretroviral therapy among people living with HIV on antiretroviral therapy in Nigeria.

Material and Methods: This was a retrospective record review of 3398 adverse drug reaction reports due to antiretroviral therapy (ART) from the National Pharmacovigilance Centre, Nigeria from 2014 to 2018. Adverse drug reactions which were life-threatening, led to hospitalization, disability or death were included as serious ADRs. Outcome variable was regulatory classification of adverse drug reactions (Serious/Non serious), while independent variables included age, sex, ART regimen and concomitant Co-trimoxazole use. Descriptive statistics was used to report frequencies and multivariate logistic regression was used to report odds ratios and 95% confidence interval.

Results: Prevalence of SADRs among persons who reported an ADR was 84 (2.5%). Of those that experienced SADRs, 71.4% were female and 4.76% were aged less than 15 report ≥ 15 years. One third of SADRs were required prolonged hospitalization (42%) and half resulted in mortality (50%). Serious ADRs reported included anaemia 32(38.10%), skin and appendages disorders (including steven

johnsons syndrome) (16, 19.05%), neuropsychiatric disorders (13, 15.48%). People living with HIV who were on Nevirapine based regimens were 3 times more likely to report a serious ADR compared to clients on Efavirenz based regimens (odds ratio=3.342, 95% confidence interval: 1.953, 5.721, $p<0.0001$). Conversely, persons who used cotrimoxazole concomitantly were about 2 times less likely to report a serious ADR (odds ratio, = 0.52, 95%CI 0.34-0.81, $p=0.003$).

Conclusion: Although rare, SADRs among People Living with HIV on antiretroviral treatment can result in prolonged hospitalization and life-threatening conditions. Continuous surveillance of SADRs is important, particularly among persons on Nevirapine based ART.

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Factors Associated With Viral Non-suppression Following Transition to Dolutegravir-Based Antiretroviral Regimens Among People Living With HIV in Central Uganda

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Background: Dolutegravir (DTG) in combination with Tenofovir and Lamivudine (TLD) is the recommended first-line treatment for people living with HIV (PLHIV). DTG has a superior rapid viral suppression. Mildmay Uganda has transitioned all eligible PLHIV to a DTG-based regimen (DBR) in eight districts of central Uganda. However, we observed viral load (VL) non-suppression among some PLHIV who transitioned to DTG. We described demographic characteristics and assessed the factors associated with VL non-suppression among PLHIV who were transitioned to DBRs.

Material and Methods: We conducted a cross-sectional review of program data for PLHIV at 80

public health facilities in the Central region of Uganda who transitioned to DTG between 2019-2020. We included PLHIV with at least one VL result before and after transitioning to a DBR. We obtained data on baseline characteristics and ART regimen, dates of ART start and transition to a DBR, and VL results before and while on the DBR. Multilevel mixed-effects logistic regression models were used to assess the association between VL non-suppression and characteristics of study participants. Formal statistical tests were based on Likelihood Ratio Tests. STATA version 17.0 was used for data analysis.

Results: A total of 34,470 PLHIV (69% women) were included in this analysis. Overall mean age was 39.0(SD±12.8) years and the median duration on non-DBR ART was 5.6 ((IQR): 3.7-7.8) years overall and 0.9 (IQR: 0.6-1.4) years on DBR. Seventy eight percent (78%) had been on a Tenofovir (TDF) backbone regimen at initiation. The VL non-suppression rate was lower after DTG transition than the prior period [1.8% (95% CI: 1.7-1.9) versus 2.7% (2.6-2.9), p-value<0.001]. VL non-suppression post-DTG transition was positively associated with pre-DTG VL non suppression [adjusted Odds Ratio (aOR)= 2.19(95%CI: 1.59-3.02) in 200-999 cells/μL; 10.88 (95%CI: 8.65-13.67) in >999 cells/μL; p-value<0.001], being male [aOR=1.49 (95%CI:1.25-1.77); p-value<0.001], age <20 years [aOR=2.8 (95%CI: 2.06-3.91); p-value<0.001] current non-TDF ART regimen[aOR=3.41(95% CI: 2.35-4.94);p-value<0.001] and being on ART for <5 years [aOR =1.25 (95%CI;1.05-1.48);p-value=0.04].

Conclusion: Children, adolescents, men and PLHIV on ART for <5 years were more likely to be non-suppressed following transition to DBRs. Tailored interventions to improve VL suppression are needed among these populations.

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HIV Drug Resistance Surveillance Leveraging on Routine ART Programme Monitoring in South Africa

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Background: To maximize the long-term effectiveness of antiretroviral treatment (ART), it is essential to monitor and minimize the spread of HIV drug resistance (HIVDR). In South Africa, HIV viral load (VL) monitoring is performed through a national network of 17 laboratories with VL testing coverage rates exceeding 80% across all provinces. We implemented nationally representative surveillance of HIVDR in adults with VL>1000 copies/mL, using routinely obtained VL specimens.

Material and Methods: Sampling was performed using a two-stage approach. Firstly, every 7th VL specimen was selected over a random consecutive five-day period per laboratory. Viral load information and patient age was extracted from the laboratory information system. Secondly, a proportion-to-size sampling was conducted, including specimens from adults (>18yr) with VL >1000 copies/mL. Selected specimens were screened for protease, reverse transcriptase and integrase mutations using next generation sequencing. Information on prescribed ART regimens was not available, therefore drug level testing (DLT) using liquid chromatography mass spectrometry, was used as a proxy for ART exposure.

Results: Between August and September 2021, 7008 specimens were selected during the first sampling stage. In the second sampling stage, 621 specimens with VL >1000 copies/mL were selected for testing. Half of the specimens (323, 52%) had detectable ART levels. Dolutegravir was detected in 45 (7%) specimens. HIVDR testing was successful in 538 (87%) specimens. Overall, resistance was detected in 68% of specimens. Non-Nucleoside Reverse Transcriptase resistance was detected in

66% of specimens compared to 41%, 4% and 0.2% Nucleoside Reverse Transcriptase, Protease and Integrase resistance respectively. One patient with detectable dolutegravir levels presented with dolutegravir resistance. Overall resistance prevalence was significantly higher in specimens with detectable ART levels (78%) versus those without (56%, $p < 0.0001$).

Conclusion: The observed HIVDR levels in this survey are similar to those observed prior to dolutegravir roll-out of with frequent (N)NNRTI resistance, but low prevalence of PI and INSTI resistance, which is in line with the high genetic barrier of dolutegravir and its recent introduction at large scale. However, the lack of clinical and socio-demographic information is a limitation of this survey approach. Routine surveillance efforts are recommended to monitor resistance, especially for new regimens.

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Factors Contributing to Loss-To-Follow-up From HIV Care Among Men Living With HIV/AIDS in Kibaha District, Tanzania

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Background: HIV/AIDS remains a public health epidemic disease in sub-Saharan Africa including Tanzania. With established care and treatment programs, HIV care yields promising outcomes in mortality and morbidity. However, retention of people, particularly men living with HIV/AIDS in their HIV clinics and adherence to lifelong treatment hinder zero HIV transmission. In order to reach 95-95-95 UNAIDS target by 2030, retention in HIV care should be emphasized. Despite the existing retention strategies in Tanzania, loss to follow-up (LTFU) from HIV care among men living with has remained to be a common challenge. With limited studies focusing on men as a population, little is known on their experience and perspectives on factors contributing to LTFU. Therefore, this

study aimed at exploring factors contributing to LTFU from HIV care among men living with HIV in Kibaha District, Tanzania.

Material and Methods: The phenomenological qualitative study was conducted to collect data among 16 men with experience in LTFU from three HIV care and treatment clinics located in Kibaha district. Purposive sampling was used to select informants for semi-structured in-depth interviews from August to December, 2021. The interviews were transcribed, translated from Swahili to English and analyzed using thematic analysis approach.

Results: The findings appeared into three themes which highlighted the contribution of individual, socioeconomic and health system factors. The individual factors included perceived self-stigma, lack of disclosure of their HIV status, poor knowledge on HIV care, unbearable ART side effects, sharing of antiretroviral medications with their partners, perceived good health status, financial difficulties, work-related travels, demanding employment schedules, negative spiritual beliefs. The health system factors included poor conduct among healthcare workers and loss of Care and Treatment Clinic (CTC) cards that hindered their clinic visits.

Conclusion: While there is wide expansion of HIV care that has significantly improved retention in HIV care among women, men have still lagged behind. The findings of this study have enlightened the existence of multi-level and interlinked factors contributing to LTFU among men which require tailored interventions to reduce incidences of LTFU among men.

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Baseline HIV Drug Resistance Among Children Living With HIV Enrolled in the Caps Trial, North-Central Nigeria

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Background: HIV drug resistance (HIVDR) threatens epidemic control, especially for children, who have poorer virological suppression compared to adults. We evaluated HIVDR among children living with HIV (CLHIV) enrolled in an implementation research study in North-Central Nigeria.

Material and Methods: We assessed baseline HIVDR among CLHIV aged 6 months to 10 years enrolled in the IAS CIPHER-funded Caregiver Peer Support (CaPS) trial, implemented at six clinics in the Federal Capital Territory and Nasarawa State. Blood samples indicating virologic non-suppression (VL \geq 1000 copies/mL) underwent HIVDR testing. Data was analyzed using the Stanford HIV database algorithm and scored for resistance to nucleoside reverse transcriptase inhibitors (NRTIs), non-NRTIs (NNRTIs), protease inhibitors (PIs) and integrase strand transfer inhibitors (INSTIs).

Results: Among the 96 CLHIV enrolled, 54 (56.3%) were female, mean age was 6.7 (SD 2.5) years with 72% between 5-9 years old; 89% were on 1st-line regimens (ABC/3TC/DTG or TDF/3TC/DTG) and 11% were on 2nd-line regimen (ABC/3TC/LPVr). Mean duration on ART was 3.7 and 0.5 years for CLHIV on ABC/3TC/DTG and TDF/3TC/DTG respectively, and 3.3 years for those on LPV/r. Thirty-three (34%) CLHIV had virological non-suppression, among whom 66.7% (22/33), 75.6% (25/33), 9.1% (3/33)

and 18.2% (6/33) had at least one major HIVDR mutation for NRTIs, NNRTIs, PIs and INSTIs, respectively. M184V was the most frequent (19/22, 86.4%) among samples with \geq 1 NRTI mutation. K103N was the most identified NNRTI mutation (13/25, 52.0%). The most common PI mutations were I54V and V82A, found in all 3 samples with \geq 1 PI mutation. Among 6 samples with \geq 1 INSTI mutation, we found major mutations R263K (n=3), G118R (n=2), E138K (n=2), T66A (n=1), G118GRS (n=1); and minor mutations E92P (n=1).

Conclusion: Given the high utilization and low genetic barrier to resistance, the high prevalence of mutations for NRTIs/NNRTIs is expected. PI resistance remains low, but LPV/r is less prescribed. For INSTIs, there is a concerning emergence of HIVDR, which threatens dolutegravir-based pediatric 1st-line ART, which is being scaled up in Nigeria and LMICs globally. Larger studies across Nigeria are needed to corroborate these finds. Routine HIVDR surveillance and data dissemination must accompany new ART drug/regimen scale-up for children.

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Case Management Intervention Improves HIV Clients' Retention in Care. Retrospective Data Analysis of Eight Districts of Malawi

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Background: One of the challenges in the HIV management program is retaining people living with HIV (PLHIV) in care. In order to increase retention in our ART cohorts, we implemented a case management intervention where a risk stratification tool (RST) was used to enroll four different categories of PLHIV, namely: defaulters brought back to care (DBB2C), clients with high viral Load (HVL), clients initiated on ART for the first time (FT), and clients who declined same-day initiation (CDSA). We present data from eight districts in Malawi collected from January to September 2022.

Material and Methods: We trained expert clients (EC) and treatment supporters (TS) to work as case managers. Using the RST, clients stratified as low-risk (LR) clients were managed by ECs, while moderate-risk (MR) and high-risk (HR) clients were managed by TS. Data was collected during each encounter with a client, and their outcomes were also documented in a register. A descriptive data analysis was then conducted.

Results: A total of 57,238 clients were enrolled in case management. 33,770 (59%) were females, while 23,468 (41%) were males. Based on the risk category, the program enrolled 39,216 LR clients and retained 38,431 (98%) into care; enrolled 9,231 MR clients and retained 8,536 (92%); and enrolled 8,791 HR clients with 91% retention. Based on case type, FT clients were 14,699 and retained 87%; 9,064 were HVL clients and retained 97%; 33,418 were DBB2C and we achieved a 100% retention while retention in CDSA was the lowest at 79%.

Conclusion: The findings demonstrated that case management with RST and peer-delivered counseling using a case manager improved retention.

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Managing Pediatric and Adolescent Treatment Failure in Seven Sub-Saharan African Countries

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Background: Children and adolescents living with HIV (CALHIV) experiencing treatment failure (TF) face prolonged viremia and delayed transition to optimal regimens. The New Horizons Collaborative (NH) is a multisectoral partnership to donate Darunavir/ritonavir (DRV/r) and Etravirine (ETR) for treatment of children and adolescents with TF aimed to improve their health outcomes. The objective of this analysis is to describe the

continuity of the TF management cascade among CALHIV in NH-supported countries.

Material and Methods: Country data from Cameroon, Eswatini, Kenya, Lesotho, Nigeria, Uganda and Zambia were obtained from national reports during the annual NH workshop in October 2022. Descriptive statistics and qualitative assessments were extracted from Ministry of Health guided presentations on the TF management cascade for CALHIV.

Results: Among countries participants, most CALHIV with TF received enhanced adherence counseling and had viral resuppression rates ranging from 42.1% (Cameroon) to 87.6% (Eswatini). A majority of CALHIV with continued viremia despite adherence interventions were referred to technical working groups (TWGs) for review and drug resistance testing (DRT) approval. TF cases discussed at the national/regional TWGs varied widely by country, from zero (Eswatini and Cameroon) to 202 (Uganda) and 318 (Nigeria); capacity building among health care workers to make treatment switch decisions was identified as an ongoing challenge. Uganda (95.2%) and Cameroon (67.0%) had the highest rates of DRT approved, although in both countries less than 60% of approved DRT samples were collected. NH countries continue to face challenges with DRT including suboptimal sample submission and amplification capacity, low DRT laboratory capacity, and long turnaround times for results. Uganda is the only country that has created a national DRT database for tracking clients with TF and has implemented a decentralized model of advanced TF management. This allowed Uganda to transition the highest number of CALHIV clients to third line DRV/r-based regimen (41, 78.8% of those selected to switched regimens).

Conclusion: We observed high variability in the TF management among CALHIV by country and ongoing challenges with accessing DRT. NH continues supporting countries with decentralizing TF management and improving DRT access and will use Uganda as an example of decentralization and data management best practices.

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A Site-Driven CQI Intervention Improves Advanced HIV Disease Screening Coverage Among Newly Diagnosed People Living With HIV in Malawi

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Background: Universal ART has dramatically reduced mortality for people living with HIV, but advanced HIV disease (AHD) amongst those newly diagnosed continues to cause unacceptably high mortality. Malawi Ministry of Health (MoH) HIV care and treatment guidance emphasizes routine advanced HIV disease screening of all newly diagnosed people living with HIV to help reduce mortality. Implementation of AHD screening in Malawi has been suboptimal with low rates of screening coverage. We conducted a brief, continuous quality improvement (CQI) intervention to improve AHD screening.

Material and Methods: Fourteen high-volume health facilities were selected for site-led targeted CQI interventions with supervision by program leadership. The CQI was implemented at targeted sites (N=7) in February 2022 with others serving as controls (N=7). Introductory lectures reviewing AHD best practices were followed by site-level planning to identify and address implementation gaps. Exemplary interventions included optimizing clinic flow, clarifying provider roles, and addressing AHD testing commodity supply chain gaps. Impact on the number of newly diagnosed people living with HIV screened for AHD was assessed using deidentified program data and the difference-in-differences (DD) method implemented via Tobit regressions incorporating district random-effects and year fixed-effects.

Results: Before CQI implementation, the proportion of people newly diagnosed with HIV completing AHD screening was significantly lower in intervention versus control sites (68 vs. 92%) ($p<0.001$). After CQI implementation, AHD screening coverage improved at all sites, with a greater increase at target sites with the new proportions now similar (98% vs 99%). The DD estimate or the effect attributable to the CQI was +24 percentage points (95% CI=3.06, 45.2) ($p=0.025$).

Conclusion: A site-led CQI intervention to address gaps in AHD screening resulted in a significant increase in coverage to near universal screening. Followup of outcomes for clients screened is ongoing. Continuous attention to CQI cycles is critical to ensure sustained AHD screening and that gaps are quickly identified and addressed.

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Client Cohorting, Community Outreach, and On-site Sample Preparation increase HIV Viral Load Coverage in Western Zimbabwe, 2022

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Background: Adult and pediatric viral load (VL) coverage in Chegutu, Kadoma, and Mhondoro districts of Mashonaland West province in Zimbabwe ranged from 80.2% to 87.8%, below the PEPFAR program target of 95% within 3 months. Contributing factors include limited reminder systems for routine VL and long turn-around times (up to 3 months) In June and July of 2022 Zimbabwe Ministry of Health and Child Care (MOHCC) Quality Improvement Unit implemented pragmatic interventions to better identify clients needing annual VL, efficiently collect and process specimens, and improve documentation of results in these three districts.

Material and Methods: VL interventions in the three districts included: 1) Reviewing and organizing clients' charts by cohorts using month of antiretroviral therapy initiation; 2) Flagging clients without current VL results using designated stickers; 3) Increasing proactive contacting of clients to attend VL collection in collaboration with community health workers; and 4) Using mobile laboratory equipment to collect and prepare both plasma and DBS samples on-site prior to transporting and processing at central laboratories. Clients could choose between sample collection at facility or during community outreach closer to their homes, including as part of differentiated service delivery models, such as community and family ART refill groups.

Results: On-site sample processing increased number of samples suitable for VL testing at central laboratories. Turn-around time between laboratory and facility decreased from an average of 90 days to 1 day. The availability of dedicated VL mobile phones at facility level improved turn-around time. Overall, after 2 months implementation the proportion of clients with a current VL increased by 5% - 16% across the three districts, resulting in each district achieving coverage within reach of the 95% target (Table 1).

Conclusion: An intensive two-month effort reorganizing existing program resources improved VL coverage and resulted in more timely feedback on viral suppression. Augmenting routine quality improvement efforts with periodic catch-up campaigns increases program performance.

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'Active' on Treatment and Virally Suppressed Clients Are Still Dying; A Descriptive Analysis of Deceased People Living With HIV on Anti-retroviral Therapy in Lagos State, Nigeria

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Background: Globally, People Living with HIV (PLHIV) are now living longer with a steady decline in HIV related deaths due to the scale up of antiretroviral therapy (ART), as many regions and countries, including Nigeria, approach HIV epidemic control. Despite this shift, there are now documented deaths from possible non-HIV related conditions which current surveillance systems in most sub-Saharan African settings fail to detect. As a result, ART programs are unable to optimally screen and promptly manage emerging diseases among PLHIV. This study reports the documented clinical profiles of deceased PLHIV from 36 comprehensive ART centers in Lagos State, Nigeria.

Material and Methods: We analyzed programmatic data of 1,112 PLHIV, who were documented as dead, over three years (October 2019 – September 2022) from electronic medical record database covering 36 facilities. PLHIV that were on ART for less than 3 months were excluded from the analysis and the dates that outcomes were documented were referenced as the date of death. Descriptive analysis was used to report the treatment profiles of PLHIV at the time of death.

Results: The mean age at death was 44±15.4 years with female PLHIV constituting 58% (649) of all deaths. About 34% (372) of all deaths occurred among 50+ years old clients. There were 79 pediatrics and adolescents (0-19 years) among the documented death; 28% (22) occurred among the 5-9years old. Fifty-nine percent (654) of the clients were 'active' on treatment (i.e., having antiretroviral medication at hand for usage and not missing refill appointments for more than 28 days) as at time of death. Of these active clients, 573 (88%) had no tuberculosis/HIV (TB/HIV) co-infection. Among the active clients that had viral load results (469/654), 82% were suppressed (<1000copies/ml).

Conclusion: A substantial number of deaths were recorded among PLHIV despite been retained on treatment, virally suppressed, and with no TB/HIV co-infection. As PLHIV continue to live longer, disease and mortality surveillance systems must be strengthened to better detect non-HIV related

diseases and causes of death among PLHIV. This will enhance program quality, promote and strengthen integration, especially for non-communicable diseases, across HIV care and treatment programs.

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A Comparative Study of the Viral Load Outcomes of People Living With HIV (PLHIV) Newly Placed on a Dolutegravir (DTG) and Efavirenz-Based Regimen in Akwa-Ibom State, Nigeria

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Background: Nigeria adopted a dolutegravir-based regimen, Tenofovir-Lamivudine-Dolutegravir (TLD), as the preferred first-line treatment for HIV in 2018. This study aims to evaluate and compare the viral load (VL) outcomes of PLHIV newly started on TLD and Tenofovir-Lamivudine-Efavirenz (TLE) after six months.

Material and Methods: This retrospective cross-sectional comparative study evaluated data on PLHIV newly started on TLD and TLE between October 2018 to March 2020 in six health facilities providing ART services in Akwa-Ibom state, Nigeria. The VL outcomes (Suppressed \leq 1000cp/ml, unsuppressed $>$ 1000cp/ml) and associations with sociodemographic data on both arms were compared and tested using One sample T-test. Data were analyzed using SPSS 28.0.

Results: A total of 569 patients were enrolled, 166 (29%) on the TLD arm and 403 (71%) on TLE. Females accounted for 70.5% of the population, while male was 29.5%. On marital status, 68.5% were married, while 26.7%, 3.7%, and 1.1% were single, widowed, and divorced, respectively. Most PLHIV had primary and secondary education (91.6%), while 8.4% had tertiary education. Eighty-five percent of all enrolled patients were virally suppressed after six months of ART initiation. The viral suppression rates for patients with TLD (88%) were significantly higher than TLE (83%). $P=0.004$.

The viral suppression rate for males (87%) and females (86%) was not statistically significant ($P=0.696$). Adolescents had the least viral suppression rate (73%) compared to adults and the elderly population, which ranged from 84% to 93%. The viral suppression rate was not significantly different ($P=0.679$) across the level of education; primary (87%), secondary (85%), and tertiary (88%). The suppression rate for single, married, widowed, and divorced was respectively 85%, 86%, 90%, and 100%, but not significantly different ($P=0.676$).

Conclusion: Dolutegravir has a superior viral suppression rate to efavirenz and should continue to be recommended as the preferred first-line drug. While there is no significant difference in suppression rate across the sociodemographic variable, adolescent suppression was the least and this population should be prioritized for active case management.

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Achieving Positive Outcomes: Investigating the Factors that Impact HIV Treatment Continuity Among Young Adults in Western Region, Ghana

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Background: HIV treatment continuity is crucial for long-term health outcomes among people living with HIV. In this study, we investigated the factors associated with HIV treatment continuity among young adults (15-24 years) living with HIV in the Western region of Ghana.

Material and Methods: A retrospective analysis of secondary data with 2,589 young adults (ages 15-24) living with HIV in the Western Region of Ghana was conducted. On January 15, 2023, data was extracted from the national HIV database (E-tracker). We were using clients' most recent facility visit dates. The outcome variable was HIV

treatment continuity, defined as the ability of young adults living with HIV to remain in care and continue taking their medication as prescribed. We analyzed the data using Pearson's Chi-square and stepwise multiple-logistic regression.

Results: Of the 2,589 young adults recruited for the study, 2,041 (79%) were females with a mean age was 21yrs. In this study population, 1,099 (43%) were currently on HIV treatment, of whom 78% were initiated on treatment at a hospital. This included 861 (78%) females and 238 males (22%), with no statistical significance between sex and young adults' treatment continuity. However, the association between being on multi-month dispensing (MMD) and treatment continuity was statistically significant ($p < 0.001$). Young adults on EFV-based treatment were 0.01 times less likely to be on treatment compared to those on DTG-based treatment (OR:0.01, CI=0.001-0.05, $p < 0.001$). MMD clients were 3.4 times more likely to be on treatment compared to those not on MMD (OR=3.4, CI=2.8-4.0, $p < 0.001$).

Conclusion: These findings suggest that young adults on DTG-based treatment and MMD regimen were more likely to remain on treatment. Those on the MMD regimen were also more likely to be on treatment compared to those not on MMD. The analysis suggests that the type of HIV treatment regimen, specifically MMD, is a critical factor in determining treatment continuity among young adults living with HIV. Overall, the study supports that the type of treatment regimen was a significant predictor of treatment continuity. This conclusion could inform interventions to improve treatment continuity in this population.

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Factors Associated With HIV-Infection Amongst Child Birthing Women at Selected Rural and District Hospitals in Mozambique: A Cross-Sectional Study Covering 2016 to 2019

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Background: Pregnant and child birthing women who access health facilities in Mozambique would be previously screened for HIV infection or are at the time of delivery. Those HIV positive would be offered prophylaxis of vertical transmission in the form of antiretroviral treatment in accordance with the policy "test and treat" universally. Characterizing levels of HIV infection among child birthing women, and the obstetric characteristics associated with the infection is key to inform peripartum period health care practices adjustments.

Material and Methods: This is a retrospective quantitative observational cross-sectional study on the obstetric profile of delivering women in selected hospitals in Niassa, Nampula, Zambezia, Tete, Sofala, Inhambane, Gaza and Maputo provinces. Clinical records were systematically selected and data was extracted for women aged between 15-49 years, who were at least 28 weeks pregnant, and gave birth between 2016 and 2019. Obstetric characteristics and HIV infection status are described by relative and absolute frequencies distribution, and backward conditional binary logistic regression analysis estimates odds ratio (OR, 95% CI > 1) of the association between women's profile with HIV infection.

Results: We analyzed 14018 cases, 25% were preterm pregnancy, 18% had high clinical obstetric risk, 14% had pre-eclampsia, 27% gave birth by cesarean section, 15% were HIV-positive HIV positive, of which 95% in antiretroviral therapy, 90% of newborns received vertical transmission prophylaxis, 14% had HIV-status missing information. Higher likelihood of HIV is associated with the newborn normal Apgar index (OR=1,665; 95%CI:1,294-2,144) and High Obstetric Risk prior to admission (OR=1.49, 95%CI:1,297-1,732); reduced likelihood of HIV is associated with preterm gestational age (OR=0.723, 95%CI:0.618-0.845) and pre-eclampsia (OR=0.822, 95%CI:0.685-0.985) on admission to maternity ward.

Conclusion: The proportion of HIV-positive and unrecorded HIV-status amongst child birthing women at first-referral rural hospitals are high in Mozambique. High frequencies of missing HIV

information may denote lost opportunities for HIV prophylaxis and treatment. However, HIV-positive parturient benefit from high antiretroviral treatment coverage. Gestational age, high obstetric risk, and vitality profile of newborns predicts HIV seropositivity, with diverging directions, so there is a need for consecutive studies to understand underlying predicting mechanisms.

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Readiness for Sustainability – A Comparative Study of Nigeria and South Africa’s HIV Financing Landscape

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Background: Domestic financing for HIV/AIDs is critical to sustaining the HIV response at country levels. However, international funding remains the highest contributor to the HIV/AIDs response in developing countries. This can potentially threaten the sustainability of HIV programs globally, particularly with the ongoing impact of COVID-19 disease on global economies and increasing pressures on international budgets. Nigeria and South Africa account for at least 60% of the economy of their respective sub-regions in Africa. Thus, we aimed to compare HIV funding sources in the two countries vis-à-vis the HIV Key Performance Indicators (KPIs).

Material and Methods: A desk-based comparative analysis of financial and program performance data obtained from UNAIDs and other sources was conducted to categorize funding contributions for HIV programming into domestic and international sources. Electronic search engines were also searched to locate studies or reports that describe the HIV financing landscape in both countries.

Results: The analysis of financial data for a five-year period (2017-2020) revealed that domestic funding contribution to the HIV funding pool in South Africa (69-77%) was about 4-6 times higher than in Nigeria

(12-17%). While over 80% of HIV funding in Nigeria was from international sources, less than 30% of the HIV funding pool in South Africa was from international sources. Further review also showed a decline in international funding for HIV in Nigeria. In terms of KPIs, Nigeria performed better across the UNAIDs 95-95-95 cascade.

Conclusion: Nigeria’s seemingly higher achievements on HIV KPIs compared to South Africa can be threatened by the country’s current over dependence on dwindling donor funds. The significant contribution of domestic funding to the total HIV expenditure in South Africa demonstrates a high level of local ownership that better positions South Africa for sustainability. Therefore, Nigeria must reinforce policies and strategies to increase domestic funding for improved sustainability of the HIV program.

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Pilot Results of Advanced HIV Disease Implementation in Three Provinces in Mozambique

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It is estimated that between 25% and 30% of HIV care beneficiaries will have advanced HIV disease (AHD). In Mozambique that means approximately 380,000 cases of the 1.9 million ART beneficiaries, which if untreated can lead to significant increased mortality. The AHD package was introduced to Mozambique in early 2022, and focused on providing treatment guidance and expanding accessibility to specialized medication. During introduction, a register instrument was created and piloted in three provinces for longitudinal tracking of beneficiaries diagnosed with AHD. The evaluation of the pilot, 6 months after launching the ADH package, collected data on the eligibility for ADH, number of people in treatment follow-up, and eligibility tests.

In each of the health facilities visited an eligibility screening and update analysis was done, with 78%

of the eligible beneficiaries (with CD4 <200 or WHO Staging of 3 or 4) enrolled in the AHD program. In the province of Manica and Maputo City there was a 100% and 95% inclusion, respectively, while in Gaza there was a 65% inclusion, which may have been the result of almost double the number of eligible beneficiaries found. The visit included a secondary analysis of the correct use of AHD screening tests, with 85 beneficiary files reviewed for CD4 results, CrAG, and TB-LAM. Of the total charts reviewed, 95% had a CD4 result, 81% CrAG, and 86% TB-LAM, tests which are critical to the successful treatment of DAH.

Despite the delay between the launch of the AHD package and the evaluation, there continues to be gaps in the uptake and screening testing for ART beneficiaries. Compared to the total eligible population, there is a relatively low uptake of the ADH package, and when enrolled there was a low adherence to the recommended screening tests. Improvement of these two aspects is essential for improved treatment. In the coming months the ADH package will be expanded to a second phase of health facilities, which will include locations outside of the provincial centers. The expansion should focus on the identification and enrollment of eligible beneficiaries and increased fidelity to the recommended screen tests after enrollment.

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Poorer Self-Reported ART Adherence Among Adolescents in Boarding School Compared to Day School

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Background: Adolescents living with HIV (ALH) have poorer adherence to antiretroviral therapy (ART) than adults. Many ALH in sub-Saharan Africa (SSA) are enrolled in boarding schools. Understanding school factors associated with adherence may help develop interventions.

Material and Methods: We collected sociodemographic data, school information, medical history, and viral load (VL) data from ALH ages 14–19 in 25 HIV clinics in 3 counties in Kenya. Using generalized estimating equations, we compared ART adherence in ALH attending day and boarding schools.

Results: Of the 880 ALH, 798 (91%) were enrolled in school, of whom 189 (24%) were in boarding school. Of those in school, the median age was 16 (IQR: 15, 18), 55% were female, 78% had a parent as a primary caregiver, and 74% were on DTG-based ART. The median age at ART initiation was 6 years (IQR: 3, 10). Overall, 227 (29%) ALH self-reported missing ART when school was in session. After adjusting for sociodemographic and HIV care characteristics, ALH in boarding were significantly more likely to self-report missing ART than those in day school (OR: 1.44, 95% CI 1.01, 2.06, $p=0.043$). Being in boarding school was associated with a higher odds of a higher stigma score in the public attitudes' domain (OR: 1.11, 95% CI 1.00, 1.23, $p=0.040$) while being in day school was associated with a needing to attend clinic when school was in session (OR: 0.62, 95% CI 0.44, 0.87, $p=0.006$). Common reasons for ART non-adherence among all ALH were related to school/medication schedules (59% for day and 45% for boarding). Among ALH in boarding school, stigma (30%) and lack of access to medicine (18%) were reasons for ART non-adherence; these were not reported as reasons for non-adherence among ALH in day school. Among 194 ALH with VL data, 60% had undetectable viral load (62% for day and 51% for boarding school); with no significant differences in viral suppression by day or boarding school.

Conclusion: ALH attending boarding schools need tailored interventions to support to maintain ART adherence. Schools remain a critical, untapped potential resource to improve outcomes for ALH.

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Acceptability, Feasibility, and Preliminary Effectiveness of a Courier HIV-Treatment Delivery Intervention for Young People Living With HIV in South Africa During the COVID-19 Pandemic

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Background: Young people living with HIV (YPLWH) have historically experienced worse virological suppression outcomes compared to adults. Differentiated service delivery models directed specifically to YPLWH are urgently needed to address this disparity.

Material and Methods: We conducted a longitudinal pilot study among YPLWH (13-24 years) to examine the acceptability, feasibility, and preliminary effectiveness of courier ART delivery and SMS support interventions to retain YPLWH in HIV care during the COVID-19 pandemic. Participants were recruited from an HIV treatment clinic near Cape Town and enrolled into the study from February to October 2021. All YPLWH had the option to enroll in the courier ART delivery service and were randomized 1:1 to receive weekly SMS support. Modified Poisson regression was used to estimate the preliminary effectiveness of each intervention on viral suppression (HIV-1 RNA <200 copies/mL) at months 3 and 6.

Results: A total of 227 participants were screened, of which 215 were eligible and enrolled. Participants were a median of 19 years and 58% female. There were 110 participants assigned to the SMS support intervention arm and 105 to the control arm. Among all 215 YPLWH, 82% elected to enroll in the courier service at baseline, 41% reported receiving a delivery of their ART in the past three months at month 3, and 49% reported receiving a delivery at month 6. Among those who reported receiving an ART delivery, most (91-100%)

rated the intervention as highly acceptable across three questions. The SMS intervention was also rated as highly acceptable by 75-84% of participants. Participants who reported receiving a delivery in the past three months at month 3 were 1.26 times as likely to have a suppressed viral load at month 3 (95% CI 1.05-1.54). Further, participants randomized to the SMS intervention were 1.34 times as likely to have a suppressed viral load at month 3 (95% CI 1.05-1.70). No effects on viral suppression were observed at month 6.

Conclusion: Findings reveal high uptake and acceptability of a courier ART intervention among YPLWH, as well as promising evidence for intervention effectiveness in increasing viral suppression. A fully powered effectiveness-implementation hybrid trial is warranted.

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Viral Load Suppression Among Children Aged 0-14 Years Improved by Community Art Distribution in Rural Uganda

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Background: Ministry of Health Uganda has a goal of achieving HIV viral load suppression of 95% by 2030. However, viral load suppression among the 0-14-year old children was as low as 79% by June 2022 at Anyeke HCIV. The processes to successful community Antiretroviral Therapy (ART) service delivery for children were unclear and instead provided monthly facility visits. Children often missed their facility appointments thus missed opportunities for ART, viral load monitoring and other services. Major access barriers were long distances to the facility, expensive transport costs and absence for community ART delivery.

Material and Methods: Community ART delivery was started and children were profiled based on age and address. Groups of 3-6 children based on age and proximity by address formed. These were

meaningfully attached to a counsellor and community health worker (CHW) positively living with HIV for follow up. Clinic preparations a day before to the scheduled community visits at preferred venues. This preparation consisted pre-clinic file retrieval, service gap identification tags of masking tape on the retrieved files using the service layering package and pre-filing of viral load forms. Clear role assignment for attending staff team who used a checklist to assemble required commodities. Weighing scales carried for weight-based ART dosing. Intensified Adherence Counselling was done at the community. When community visit was missed, a counsellor and CHW proceeded for a home visit. Weekly update and review of the children's audit tool supported performance monitoring.

Results: Viral load suppression improved from 79% in June 2022, 81% in September to 94% in December 2022 for children 0-14 years due to community service delivery model of care. There was improved access to ART services and adherence.

Conclusion: Viral load suppression can be achieved using community service delivery models of care in low income settings. Proper ART service layering is achievable with proper preparation and clear role assignment. Community ART service delivery once adopted and scaled can be a game changer to Pediatric HIV management.

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Family-Centered Care: A Collaborative Approach to Addressing Persistent Viral Un-suppression amongst Family Units on HIV Treatment in Selected Facilities in Benue state, Nigeria

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Background: Despite the significant role of caregivers in managing HIV treatment for children

living with HIV, achieving viral suppression in some families where both parents and children are assessing care in the same facility has been a challenge using the traditional facility care model. Two high-volume facilities in Benue with a combined treatment number of 10,056 clients have 42 identified family units assessing HIV care, of which 11 family units have 28 members (11 adult parents and 17 children/adolescents) with constant unsuppressed viral load. APIN implemented family-centered care, a holistic approach which ensures all-inclusive client management by a multidisciplinary team, leveraging all avenues to engage the entire family for ownership of their health and well-being, targeting the 11 family units with virally unsuppressed members.

Material and Methods: Between October 2021 and September 2022, a multidisciplinary team comprised of a clinician, pediatrics focal person, Orphan and Vulnerable Children (OVC) case manager, nurse adherence counselor, and retention officer, carried out home visits to the families, where they carried out a household assessment, identified and addressed all barriers to medication adherence and viral un-suppression, provided household economic strengthening, nutritional support, and treatment of opportunistic infections.

Results: By the end of September 2022, 23 (82%) of the 28 un-suppressed family members achieved viral suppression, with 5 family units achieving complete viral suppression (all family members suppressed). All the parents (11) achieved viral suppression, while 12 (71%) of the children/adolescents achieved viral suppression.

Conclusion: The family-centered care approach through a multidisciplinary out-of-facility intervention improves viral suppression rate among family units with persistent high virally un-suppressed members, and should be explored for scale-up to other sites.

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Glucose Intolerance Among Persons Living With HIV on DTG Based Antiretroviral Regimen: Outcomes From a Longitudinal Cohort Study in Ghana

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Background: HIV programmes in sub-Saharan Africa are switching to dolutegravir (DTG) based antiretroviral therapy. Emerging evidence suggests some association between DTG and glycemic control. This study assessed cumulative incidence and risk of glucose intolerance (GI) among adult PLHIV initiated on DTG in Ghana.

Material and Methods: A prospective multi-center observational cohort study was conducted among PLHIV in Ghana from August 2020 and September 2022. We recruited patients with normal fasting blood glucose level and not known diabetics and followed for 72 weeks. GI was defined as fasting blood glucose levels >5.6 mmol/l. Person-time and incidence rate (IR) were estimated using “stptime” function in STATA. Cox proportional hazard model with robust standard error was employed.

Results: A total of 1356 patients were recruited with 78.1% being female. Mean age was 44.4 ± 11.9 years. The estimated total person-months of DTG exposure was 8049 with overall GI IR of 101.7 (95% CI: 95.0-109.0) per 1000 person-months. The GI IR at 3, 6 & 12 months were 289.7 (95% CI: 264.5 – 317.3), 218.5 (95% CI: 202.2 – 236.1) and 151.3 (95% CI: 141.0 – 162.3) per 1000 person-months respectively. The GI IR among males 137.0 (95% CI: 119.3 – 157.3) per 1000 person-months was significantly higher than that for females 93.9 (95% CI: 86.8 – 101.6) per 1000 person-months. For age, the highest GI IR was among 50-59 years [114.0 (95% CI: 99.1 – 131.1) per 1000 person-months] and the lowest GI IR of 96.6 (95% CI: 88.5 – 105.5) per 1000 person-months among those aged 18-24 years. GI IR among ART naive patients was 107.2 (95% CI: 85.4 – 134.7) and among those previously

on ART was 101.2 (95% CI: 94.2 – 108.8). Males had 1.3 (95% CI: 1.2 – 1.4) times higher risk of developing GI compared to females. Having comorbid conditions at the time of recruitment was associated with 1.2 (95% CI: 1.1 – 1.3) times higher risk of developing GI.

Conclusion: The cumulative GI IR was found to be 101.7 (95% CI: 95.0-109.0) per 1000 person-months. Being male and having a comorbidity was associated with a higher risk of GI.

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Virological Dynamics Among Children Living With HIV Transitioned to a Dolutegravir-Based Regimen in Nigeria

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Background: Nigeria adopted the use of dolutegravir (DTG)-based regimen as the preferred first line ART regimen for children living with HIV (CLHIV) in July 2021 and immediately commenced transitioning those on protease inhibitor (PI)-based regimen to DTG. This paper aims to assess virological dynamic upon transitioning from PI- to DTG-based regimen amongst CLHIV in Nigeria.

Material and Methods: We conducted an institutional-based retrospective cohort study using data from the electronic medical records from 155 health facilities in Akwa Ibom and Cross River States support by PEPFAR through United State Agency for International Development (USAID). The cohort included CLHIV (<=9years) who were transitioned from PI-based to DTG-based regimen between July 2021 and December 2021. The baseline viral load at transitioning and 12months after transition was abstracted and categorized as undetectable viral load (<=40copies/ml), low-level viremia (41-999copies/ml), or unsuppressed) viral load (>=1000copies/ml). Chi-square statistics was

used to compare proportional difference in viral load change using STATA version 14 with statistical significance set at $p < 0.05$.

Results: A total of 2,358 CLHIV were transitioned to DTG-based regimen as of December 2021. Median age was 6 years [IQR: 4–7 years], and 51.0% ($n=1,203$) were females. At baseline 81.6% ($n=1,924$) were undetectable, 14.6% ($n=345$) had low-level viremia while 3.8% ($n=89$) were unsuppressed ($>=1000$ copies/ml). Of the 2,148 (91.1%) CLHIV who remained on ART 12 months after transitioning, 90.6% ($n=1,947$) were undetectable, 7.0% ($n=150$) had low-level viremia while 2.4% ($n=51$) were unsuppressed ($>=1000$ copies/ml). There was no sex difference in virological dynamics [Male=91.7% versus Female = 92.5%; $p = 0.374$].

Conclusion: Children living with HIV achieved favourable virological changes when transitioned to DTG-based regimen. Programs should prioritize DTG-based regimen in children in order to improve their treatment outcomes.

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Utilising Community HIV/AIDS Service Agents to Find, Link, and Retain in Care Pregnant, Breastfeeding Mothers and Children Aged 0-14 Living With HIV

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Background: Despite efforts to end the AIDS epidemic by 2030, pregnant, breastfeeding mothers, children, and young adolescents continue to face barriers to accessing HIV and other health-related services. The Zimbabwe National Network of People Living with HIV (ZNNP+) collaborated with communities in four (4) districts of Zimbabwe to improve service access for these groups by increasing awareness of available services and referring who have interrupted treatment into

care. Furthermore, community cadres met with community leaders to discuss barriers identified during their work.

Material and Methods: As a community partner the Zimbabwe National Network of People Living with HIV compliment the Ministry of Health and Child Care in ensuring that pregnant and breastfeeding women and children aged 0-14 are linked and retained in care. The organisation trained and deployed 40 mentor mothers and 40 young Community HIV/AIDS Service Agents (yCHASAs) in the community who helped to track and trace those not in care. Each month the cadres submit data on their activities electronically to the central server where it is analysed, and insights generated to inform advocacy at the facility or community.

Results: Between Jul 2022-September 2022, the mentor mothers referred 1612 individuals for HIV services, 52 (3%) who had an unknown HIV status got tested and had a positive result. The newly diagnosed were initiated on treatment and linked to support groups, while community cadres continued to provide adherence counselling. During the same time, 48 (3%) of those who had been interrupted in treatment (IIT) successfully returned to care. Ten survivors of gender-based violence (GBV) were linked to appropriate services. The cadres coordinated three community dialogues, which were attended by 90 community leaders, to discuss feedback from recipients of care to jointly find solutions to structural barriers that prevent people from accessing services.

Conclusion: With proper training lay cadres can identify peers who are not on treatment and those who have been interrupted in treatment and successfully navigate them back into care. If properly engaged community leaders are willing to offer cadres a platform for them to air concerns from their peers and help break down barriers to service access.

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Gender Difference Exist in the Incidence and Mortality Among People Presenting With Advanced HIV Disease in Nigeria

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Background: Globally, about 50% of people living with HIV (PLHIV) present with Advanced HIV Disease (AHD) and these clients are at a higher risk of mortality. This paper assesses the gender difference in the prevalence and mortality of PLHIV presenting with Advanced HIV Disease (AHD) in southern Nigeria.

Material and Methods: Routine program data was collected retrospectively for a cohort of adults (>14years) newly diagnosed with HIV between January to June 2022 from 155 facilities receiving support from PEPFAR through USAID Accelerating Control of HIV Epidemic (ACE-5) project in Akwa Ibom and Cross River State. AHD prevalence was defined by clients with CD4 cell count of <200cell/ml, while and mortality defined as proportion of PLHIV who died after antiretroviral therapy initiation; and was determined at the end of 6months in December 2022. Logistic regression analysis was used to compare differences in outcome by gender using STATA ver. 14 at significant p-value <0.05.

Results: A total of 6,185 (M 2396: F 3789) PLHIV were initiated on ART within the period, median age was 35years (IQR 28-41). Of these persons, 57.9% [3581 (M 1324: F 2257)] had CD4 test done and 24.9% [893(M 322: F 571)] were diagnosed with AHD (CD4 <200). At 6months follow-up, overall mortality among PLHIV was 3.4% and 1.7 times higher among clients with AHD compared to those without AHD [AHD:4.8%: non-ADH:2.7%; AOR 1.7, 95%CI [1.17-2.51]]. By sex, mortality was 8.4% among men and 2.8% among females. Men

with AHD were three times more likely to die than females with AHD [aOR 3.1,95%CI [1.68-5.98]] compared to the insignificant sex difference in mortality among those without AHD [aOR 1.5,95%CI [1.0-2.48]].

Conclusion: Mortality among newly identified clients with AHD was significantly high, and its impact higher among men with AHD. This calls for more innovative approaches to early case identification and fidelity to the management of AHD among men.

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Out of the Shell: Impact of Peer-to-Peer Mentorship on Adolescents Living with HIV Through the Operation Triple Zero Programme in Benue State

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Background: Adolescents living with HIV (ALHIV) like other adolescents face developmental challenges in the transition from childhood to adulthood. Both adolescents who acquired HIV perinatally and during childhood or adolescence may encounter issues pertaining to HIV prevention, care, and treatment such as interruption in treatment, stigma (including self-stigma) and discrimination, poor adherence to Antiretroviral therapy (ART), viral un-suppression, and non-disclosure. PEPFAR supports 10,108 ALHIV on treatment in Benue State. Operation Triple Zero (OTZ) as an asset-based approach to HIV programming nurtures their potential and empowers them to be self-health managers.

Material and Methods: Since its inception in the state in 2020, 106 facilities have been activated for this OTZ program. Adolescents were enrolled based on certain criteria (voluntary, full disclosure, commitment to the three zeroes: zero missed

appointment, zero missed drugs, zero viral load). Members, through comprehensive treatment literacy, were inspired to take charge of their health, become resilient, interact, connect, and receive support from their peers. In addition, peers assist in HIV testing and enrolment processes, disclosure, psychosocial support, and coordination of monthly OTZ meetings.

Results: As of December 2022, a total of 7,027 (70%) ALHIV have been enrolled in the program. The program has led to an increased number of adolescents who are comfortable disclosing their HIV status without fear of judgment or stigma. It provided a platform through which adolescents meet peers who are facing similar challenges and learn how best to tackle them. Through self-reports, there was improved treatment adherence, dignity, confidence, and active participation in matters of their health. Viral suppression has increased from 75% to 90%, while interruption in treatment dropped from 5.1% to 0.5%.

Conclusion: ALHIV can enjoy a quality life through positive living. There can be improved self-esteem and confidence when peers serve as role models. Peers should be recruited to assist in the tracking and enrolment of those not yet in the program.

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Review of Clinical Records: A Case for Advanced HIV Disease Screening

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Background: Approximately 20,950 people living with HIV (PLHIV) are receiving treatment in Liberia. The World Health Organization (WHO) defines advanced HIV disease (AHD) as CD4 cell count <200cells/mm³ or WHO stage 3 or 4 and recommends early screening to ensure prompt treatment and improve patient outcomes. AHD screening using CD4 count, TB-LAM and Serum

CrAG is not implemented in Liberia therefore a review of PLHIV WHO stage will help to build a case for AHD screening.

Material and Methods: The Meeting Targets and Maintaining Epidemic Control (EpiC) project supports HIV services in 21 health facilities in Liberia. We reviewed records of PLHIV (n=16,224) with documented WHO stage in October 2021–November 30, 2022. Data was cleaned and deduplicated using STATA, and a chi-square test was used to determine the association between population type, age, sex, and WHO stage. A multivariable logistic regression model was used to determine factors that are associated with higher WHO stage (3 or 4).

Results: Of the 16,224 PLHIV records reviewed, the majority (72%) had WHO stage 1. Of those, 87% were from the general population (GP) and 13% identified as key population (KP). Twenty percent had stage 2 (82% GP and 18% KP). Seven percent had stage 3 (92% GP and 8% KP). Only 1% had stage 4 (95% GP and 5% KP). In multivariable analysis, factors associated with higher WHO stage were PLHIV from the general population [OR=2.0; 95% CI= (1.6-2.5)] compared to KPs and those more than 14 years old [OR=19.0; 95% CI 2.7-135.7].

Conclusion: Although 8% of PLHIV were captured through WHO staging, (stage 3 (7%) or stage 4 (1%)), additional WHO recommended AHD screening using CD4 count, serum cryptococcal Antigen and TB-LAM antigen should be advocated for in Liberia to identify more people.

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Improving 6-Month Retention for Newly-Initiated HIV Clients Through Differentiated Dispensing of Antiretroviral Therapy at Initiation In Western and North-Rift Kenya

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Background: In March 2020, COVID-19 mitigation strategies among People Living with HIV (PLHIV) on Antiretroviral Therapy (ART) in Kenya included offering all PLHIV a form of Differentiated Service Delivery that included Multi Month Dispensing (MMD). Prior to that, PLHIV starting treatment received no more than two-weeks of ART at initiation. We sought to determine the effect of the longer ART dispensing at initiation on the 6-month retention of PLHIV newly-initiated on ART.

Material and Methods: Patient-level records of adult PLHIV (aged ≥ 18 years) newly-initiated on treatment between April-June 2019 (pre-COVID period) and April-June 2020 (COVID period) were extracted from the electronic medical records system. Each client starting ART during the stated periods was followed up for one year and assessed if in care at their respective 6-month mark as per the PEPFAR guidance. Their first viral load within the first year after initiation was also reviewed. Logistic regression was used to determine the effect of the policy shift on 6-month retention.

Results: A total of 3255 records (1713 from the pre-COVID period) were reviewed, 65.5% of whom were females. Those receiving more than 14-days of drugs at initiation increased from 549 (32.1%) during the pre-COVID to 739 (48.1%) during the COVID period. There was a significantly increased likelihood of same-day ART initiation during the COVID-19 period than the pre-COVID period {adjusted Odds Ratio(aOR) 1.46; 95% Confidence Interval (C.I) 1.19-1.80}. Those in care at 6 months were 1255(73.3%) and 1125(73.0%) during the pre-

COVID and COVID periods, respectively. The 6-month retention was significantly associated with receiving ART of more than 14 days at initiation (aOR 1.37; 95% C.I 1.15-1.58) and with being male (aOR 1.27; 95% C.I 1.07-1.50). Viral load suppression rates were similar between the two periods (aOR 1.23, 95% C.I 0.85-1.79), with no difference between sexes and age-groups.

Conclusion: Despite shifting to longer ART dispensed at initiation, 6-month retention of newly-initiated PLHIV significantly improved. Viral load suppression between the two periods under comparison did not vary significantly. This gives confidence for a policy shift for differentiated dispensing, including MMD, for new clients at ART initiation.

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Socio-Demographic Predictors of Treatment Outcome Among Adult PLHIV (APLHIV) In Nigeria

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Background: One of the primary measures of treatment efficiency and the quality of the ART program is client continuity on treatment with a suppressed viral load. Client's unique characteristics play a role in determining their treatment outcomes. This study looked at the socio-demographic predictors of treatment outcomes.

Material and Methods: A cross-sectional study of 81055 APLHIV aged ≥ 18 years, being treated with antiretroviral medications from 2018-2022. HIV treatment data were collected from multiple ECEWS SPEED Project CDC-funded supported treatment sites. Descriptive statistics were used to characterize participants' socio-demographics. Chi-square and multiple logistic regression were employed to identify socio-demographic factors

associated with participants' treatment outcomes at $p < 0.05$ using Statistical Package for Social Sciences 23. We defined treatment outcome as being active on treatment with a suppressed viral load as adequate and inadequate for lost to follow-up without a viral load status.

Results: The overall median (IQR) age of participants was 37(15) years with 52093(64.3%) being males and 41979(51.8%) having a senior secondary education. Study shows significant associations between all explanatory factors including sex, occupation, education, age, marital status, care point of entry ($X^2 = 22.602, 204.603, 5114.511, 288.639$ and $3956.416, p < 0.001$), and treatment outcome. Adjusting for age, sex and other potential predictors, (Adjusted Odds Ratio AOR=95% Confidence Interval (CI) for age (years): <24 vs >64 (AOR=0.53, 95%CI: 0.40-0.70), 25-34 vs >64 (AOR=0.47, 95%CI: 0.36-0.60) 35-44 vs >64 (AOR=0.52, 95%CI: 0.41-0.67), 45-54 vs >64 (AOR=0.53, 95%CI: 0.41-0.68), 55-64 vs >64 (AOR=0.57, 95%CI: 0.43-0.70), male vs female (AOR=1.11, 95%CI: 1.03-1.19), none vs senior secondary(AOR=0.51, 95%CI: 0.44-0.60), junior secondary vs senior secondary(AOR=1.35, 95%CI: 1.02-1.73), post-secondary vs senior secondary education(AOR=1.29, 95%CI: 1.15-1.44), primary vs senior secondary education (AOR=0.87, 95%CI: 0.79-0.95), qur'anic vs senior secondary education(AOR=0.47, 95%CI: 0.17-1.00), being married vs widowed(AOR=1.33, 95%CI: 1.02-1.19), community vs facility (AOR=0.42, 95%CI: 0.39-0.45), retired vs unemployed(AOR=1.63, 95%CI: 1.05-2.53), students vs unemployed(AOR= 1.19, 95%CI: 1.02-1.39) were significant predictors of adequate treatment.

Conclusion: Using a client-centric model that put into consideration the unique socio-demographic characteristics of clients is essential to achieving an adequate treatment outcome, hence facilitating epidemic control.

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Monitoring of Mozambique National CD4 Testing for Advanced HIV Disease

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Though CD4 testing initiated in Mozambique in 2003, with the approval of the National Acceleration Plan for the HIV Response in Mozambique in 2013, CD4 testing entered a usage acceleration phase, becoming widely available for HIV care initiation. This approach to HIV care was practiced until the adoption of Test and Start in late 2016 that shifted the testing importance away from CD4 and towards Viral Load. Starting in 2021 demand for CD4 increased to provide further analysis for newly initiated beneficiaries of care and for the Advanced HIV Disease (AHD) care model implemented March in 2022.

An analysis using the electronic patient tracking systems was conducted to improve understanding of the current CD4 testing situation. The review collected all CD4 results for all newly initiated beneficiaries from October 2021 until September 2022. Of those 250,000 newly initiated beneficiaries during this period, only approximately 17,000 had CD4 tests nationally mandatory test for new initiates on HIV care. The number of tests almost doubled from the first quarter (October to December 2021) until the last, going from 2,585 tests to 4,800. In the 31 health facilities (HF) in the first phase of AHD expansion, there is a clear increase in percentage new initiated tested, from only 5% in the last quarter of 2021 to 21% in quarter 3 of 2022. In the HF for the next planned expansion, the coverage increased from 9% from December 2021 to 12% to September 2022, and for the remainder of the health facilities reported the coverage increased from 3 to 5%.

Despite the increasing numbers of CD4 tests for diagnosis of AHD, Mozambique is still a long way from reaching universal coverage for CD4 testing in new ART initiates. Within the national increase,

there is a clear focus on the health facilities that are part of the AHD implementation.

Despite the increase in CD4 testing, new approaches are needed for increasing CD4 availability, including CD4 point of care testing, that would allow a increased access to reagents as well as reducing the laboratory response time and delivery of the result to the beneficiary.

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Low Level of HIV-1C Integrase Strand Transfer Inhibitor Resistance Mutations Among Recently Diagnosed ART-Naive Ethiopians

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Background: With the widespread use of Integrase strand transfer inhibitors (INSTIs), surveillance of HIV-1 pretreatment drug resistance is critical in optimizing antiretroviral treatment efficacy. However, despite the introduction of these drugs, data concerning Integrase strand transfer inhibitors resistance mutations (INSTI RMs) is still limited in Ethiopia. Thus, this study aimed to assess INSTI RMs and polymorphisms at the gene locus coding for Integrase among viral isolates from ART-naive HIV-1 infected Ethiopian population.

Material and Methods: This was a cross-sectional study involving isolation of HIV-1 from plasma of 49 newly diagnosed drug-naive HIV-1 infected individuals in Addis-Ababa during the period between June to December 2018. The integrase region covering the first 263 codons of blood

samples was amplified and sequenced using an in-house assay. INSTIs RMs were examined using calibrated population resistance tool version 8.0 from Stanford HIV drug resistance database while both REGA version 3 online HIV-1 subtyping tool and the jumping profile Hidden Markov Model from GOBICS were used to examine HIV-1 genetic diversity.

Results: Among the 49 study participants, 1 (1/49; 2 %) harbored a major INSTIs RM (R263K). In addition, blood specimens from 14 (14/49; 28.5%) participant had accessory mutations. Among these, the M50I accessory mutation was observed in a highest frequency (13/49; 28.3%) followed by L74I (1/49; 2%), S119R (1/49; 2%), and S230N (1/49; 2%). Concerning HIV-1 subtype distribution, all the entire study subjects were detected to harbor HIV-1C strain as per the Integrase gene analysis.

Conclusion: This study showed that the level of primary HIV-1 drug resistance to INSTIs is still low in Ethiopia reflecting the cumulative natural occurrence of these mutations in the absence of selective drug pressure and supports the use of INSTIs in the country. However, continues monitoring of drug resistance should be enhanced since the virus potentially develop resistance to this drug classes as time goes by.

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Measuring the Impact of Teen Club in Mwanza, Tanzania: Preliminary Results for Medication Adherence and Clinical Markers

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Background: Adolescents living with HIV are a key population affected by HIV and face unique challenges to successful long-term management of their infection. Psychosocial interventions to support teens are common among clinics and organizations caring for ALHIV, however evidence for the impact of such programming on clinical outcomes is lacking. Baylor Center of Excellence

(COE) in Mwanza, Tanzania conducts a Teen Club program that has served over 700 adolescents over the past 5 years. The aim of this study is to evaluate whether Teen Club improves adherence and clinical markers such as CD4 and viral load among ALHIV.

Material and Methods: Retrospective chart review of teens (age 13-18) with ≥ 3 clinic visits at Baylor Mwanza COE during 2021 was conducted using electronic medical records and Teen Club attendance records. Patients were classified as attending Teen Club if they attended ≥ 5 Teen Club meetings January-December 2021. Data collected included age, sex, medication adherence, CD4, and VL. Clinical and adherence data were collected for the period May 2021-April 2022. Adherence measured as proportion of visits with 'good' adherence (pill count 95-105%). Most recent CD4 and VL results measured during the study period were recorded. Adherence, CD4, and VL outcomes were compared between those attending and not attending Teen Club.

Results: Of 353 adolescents meeting inclusion criteria, 62% (218/353) attend teen club. Mean age was 15.2 years and 48% (168/353) of patients were female. The average proportion of visits with good adherence was 87% for the attendees and 86% for non-attendees. Nine percent of those with results available (30/328) had CD4<250 for both attendees and non-attendees, 18% (58) had CD4 of 250-499 for attendees and 17% for non-attendees, 73% (240) had CD4 \geq 500. 77% of patients with results available (202/242) had VL<1000. Adherence, CD4, and VL were not different between those attending and not attending Teen Club.

Conclusion: Medication adherence and clinical markers were not different between those attending and not attending Teen Club. An ongoing study will use surveys and focus groups to measure additional outcomes including quality of life and possible confounding patient factors such as ART regimen, caregiver status and level of education.

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Evaluation of Health Literacy and Medication Regimen Complexity Index Among PLHIV: A Cross-Sectional Study

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Background: A limited number of studies have explored the association between health literacy (HL) and health outcomes. Effectively managing HIV infection expects from the patients the ability to seek medical help, understand the instructions provided by the healthcare professionals, and adhere to the treatment plans. This study aimed to evaluate the HL and medication regimen complexity index (MRCI) among people living with HIV and determine the associated factors.

Material and Methods: This was a prospective, cross-sectional study. Each study participant was assessed using the HIV literacy test (HIV-LT). The complexity of the prescribed drug regimen was measured using MRCI. Changes in HL and MRCI with age, gender, and educational status of the individual were assessed. The presence of any correlation between HL and MRCI scores was assessed using Spearman's correlation coefficient test.

Results: Of the 285 patients with HIV infection studied, 51.6% were males and 48.4% were females. The median HIV-LT score was 3 (out of 10) (interquartile range [IQR], 0-6), and the median MRCI score was 8 (6-12). A statistically significant increase in the HL scores based on the educational status of the participants was seen ($\chi^2 = 87.324$, $p < 0.001$).

Conclusion: Our study reveals that the majority of the HIV-infected patients studied had inadequate HL as measured using the HIV-LT tool. Those with poor HL did not receive more number of drugs as

compared with those with higher HL. Strengthening the counselling and supportive care in patients with HIV, particularly among those with poor HL, is necessary.

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A Successful National Strategy to Improve Viral Load Monitoring of PLHIVs on Treatment in Liberia

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Background: Liberia has an estimated 40,000 persons living with HIV (PLHIV), 13,891 of whom were on antiretroviral therapy (ART) in 2018, and 23,701 in 2022. The national viral load (VL) testing coverage rate was below 21% in 2018, and the viral suppression rate among those tested was only 49%, making treatment monitoring sub-optimal. We share our experience at improving national VL monitoring through a nationwide VL coverage acceleration plan.

Material and Methods: From April to October 2019, the National AIDS Control Program (NACP) partnered with key stakeholders, notably US Government development partners, Global Fund and the Liberia Network of People living with HIV (LibNep+) to introduce specific strategies to address VL testing supply and demand issues. A central ABBOT-2000 and 20 GeneXpert machines were procured and linked by a hub-and-spoke system to better distribute testing volume according to lab capacity. A directory guides health workers on the nearest laboratory location. In addition, a laboratory information system (e`lab) was integrated in the network to speed up VL result turnaround time between the laboratory

technician and the ART clinicians for quick clinical decision making; and to track and provide intensive support to PLHIV with non-suppressed VL through home visits and phone calls. Virally suppressed and consenting PLHIVs were transitioned to less intensive longer dispensing treatment models by 2020. A quarterly meeting of clinic and lab staff facilitated review of the intervention to quickly address upcoming issues.

Results: National VL testing coverage increased from 2,884 tests in the year preceding the intervention (December 2018) to 11,491 in December 2021 (53%). The increase in testing coverage also corresponded with an improved viral suppression rate, from 49% to 83%. Demand for VL testing increased among PLHIV and, with better VL coverage and results utilization, more PLHIV have been transitioned to more convenient differentiated ART services.

Conclusion: A national approach to improving VL coverage and suppression is possible. A hub-and-spoke system helped distribute VL workload between limited labs to ensure effective coverage. These strategies would be scaled to all facilities to sustain national VL monitoring in Liberia.

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Factors Influencing Adherence to Anti-retroviral Treatment (ART) Among HIV Positive Adolescents in Ntungamo District, Rural Uganda: A Cross-Sectional Study

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Background: With the advent of HAART, HIV is becoming a manageable disease. However, the effectiveness of HAART relies on strict adherence. Globally, 43.8 million people were living with HIV at the end of 2021, yet up to 54% of People living with HIV who need treatment aren't receiving any. Africa remains the most severely affected, with 1 in every

25 adults living with HIV, and Sub-Saharan Africa carries 22.5 million people who continue to suffer limited access and poor adherence to HAART. Annually, an estimated 2.6 million people are newly infected, and 1.8 million lose their lives due to AIDS, which deaths could be avoided by HAART and strict adherence. The Ministry of Health Uganda recently implemented the 95-95-95 strategy for ensuring individuals live longer, near normal and quality lives. However, there is an increase in the incidence of opportunistic infections, persistently high viral load and low levels of CD4 count among adolescents, which are pointers to poor adherence. Rushooka Health Center IV, Ntungamo district has continuously recorded increasing markers of poor adherence among adolescents. Objective: To establish the factors influencing adherence to anti-retroviral drugs among adolescents in Ntungamo district, rural Uganda.

Material and Methods: This study adopted a descriptive cross-sectional design using both quantitative and qualitative methods, involving 384 HIV positive adolescents obtained through simple random sampling.

Results: Our study found out that 96.7% reported to have ever failed to take their medication, 16.7% expressed that they felt ashamed being seen in the ART clinic, 80% stated that they missed picking medication in time due to lack of transport fare, since 50% traveled more than one kilometer to the health facility, 36.7% declared that health workers have ever been rude to them, something that discouraged them, as 45% blamed absence of health worker as the reason for missing medication. Up to 36.3% stated that they did not get any family / social support in taking drugs from their families.

Conclusion: Negative attitudes from health care workers, stigma, lack of family / social support and socio-economic challenges were seen as contributing factors towards poor adherence among adolescents.

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Feasibility and Performance of the VISITECT CD4 Test Among Children Screened for Advanced HIV Disease in Programmatic Setting in Tanzania

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Background: Measuring CD4 count remains critical in identifying HIV clients with advanced HIV disease (AHD); however, access to conventional CD4 testing services remains a challenge. The VISITECT CD4 test is a point-of-care test that indicates whether the level of CD4 count is above or below 200 cells/mm³. As a new innovative technology, we evaluated the performance and feasibility of using VISITECT CD4 tests among youth under 18 years old in routine programmatic settings.

Material and Methods: A retrospective accuracy study was embedded in a large evaluation study for use of VISITECT CD4 test in routine HIV programs among all clients eligible for CD4 testing in 20 health facilities in Tanzania. Our analysis included HIV clients under 18 years old who were screened for AHD in April-September 2022. Capillary blood samples were tested using the VISITECT CD4 test and venous blood from the same client using Alere PIMA CD4 count or BD FACS CD4 count depending on the standard of care at the facility. The sensitivity and specificity of the VISITECT CD4 test were determined using the Alere PIMA or BD FACS CD4 count as the reference standard.

Results: During the pilot period, 1,370 HIV clients suspected of AHD were tested using VISITECT CD4; of these, 77 were children under 18 years. Of the children tested using VISITECT CD4, 66% were tested by non-laboratory healthcare workers, 50.6% were newly diagnosed with HIV, and 25%

were under 5 years old. Overall sensitivity and specificity of VISITECT compared to standard CD4 testing among children were 70.0% (95%CI: 34.8% – 93.3%) and 100% (73.5% – 100%) respectively. The Sensitivity was 40% (95%: 5.3% – 85.3%) and 100% (95%CI: 47.8-100%) when the VISITECT test was performed by non-laboratory and laboratory-based healthcare workers, respectively.

Conclusion: The use of the VISITECT CD4 test for AHD screening in children was feasible among non-laboratory healthcare workers. Suboptimal sensitivity of VISITECT CD4 was observed when the test was performed by non-laboratory healthcare workers. Regular training on job aids for non-laboratory healthcare workers who perform VISITECT CD4 will likely improve the sensitivity of VISITECT CD4 in routine settings.

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Using Human Centered Design and Marketing to unpack U=U in Zimbabwe

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Background: Undetectable=Untransmittable (U=U) remains abstract in Zimbabwe. We used human centred design to inform a multi-level marketing campaign to articulate the benefits of HIV treatment and viral load suppression (VLS) in a way that resonates with U=U among clinical providers and people living with HIV.

Material and Methods: Job aids complemented the campaign to help providers communicate VLS. 3 “Be OK” bead bottles adapted from South Africa’s ‘Coach Mpilo’ demonstrate how HIV treatment works with illustrations attached to each bottle to guide provider interpretation of client viral load (VL) test results. A ‘wheel’ illustration helps providers identify treatment knowledge gaps. 37 ART Champions living with HIV were trained to inspire ART adherence among their peers by sharing HIV treatment testimonies. Three pilot

facilities implemented between September 2021 and September 2022.

Results: VL testing at pilot sites increased by 164% during the pilot. Providers cited increased efficacy to communicate results. “I have seen these tools work and they simplify my way of counselling. Before these tools, I wasn’t as confident to explain viral suppression.” [Clinician] ART Champions reported increased understanding of VLS among their peers. “Before these tools, people were not aware that adhering to ART would lead to TND (Target Not Detected) which means you are less likely to pass HIV to others. When you use these tools, you can give vivid examples. I use 3 bead bottles and each bottle represents my body.” [ART Champion] ART Clients expressed motivation to achieve VLS. “After the demonstration, I understood that I was in the first bottle and I was motivated to move to the third. I wanted to experience the benefits of being virally suppressed.” [ART Client]

Conclusion: Combining marketing and human centered design drove simple, relatable messaging and uptake of the communications interventions. Simplifying complex medical concepts helps providers and recipients of care to communicate benefits of VLS. Effectively communicating U=U in Zimbabwe and beyond requires relatable language and models to unpack VLS and create demand among recipients of care, potentially reducing provider follow-up burden. The campaign and tools could be adapted for implementation in other contexts.

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Improving Adverse Drug Reaction Reporting for HIV Infected Pediatric and Adolescent Clients on Antiretroviral Therapy in Nigeria

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Background: Adverse drug reactions (ADRs) associated with antiretrovirals can hinder treatment adherence, resulting in virological/treatment failure. Routine ADR monitoring ensures early detection, documentation, and provision of adequate interventions. From 2018-2020, the Nigeria HIV program only reported 8 ADRs. This analysis evaluated the Faith-Based Action for Scaling Up Testing and Treatment for Epidemic Response (FASTER) activities to improve ADR surveillance for children and adolescents living with HIV (CALHIV).

Material and Methods: FASTER trained healthcare workers (HCWs) across 57 sites on pharmacovigilance, disseminated national ADR screening and reporting tools, instituted surveillance systems, and established pharmacovigilance committees. The National screening tool outlines possible adverse events due to antiretrovirals and was utilized during clinic visits to assess ADRs CALHIV experienced. We analyzed data from January-December 2021 regarding drugs causing ADRs, incidence (number of ADRs reported/total CALHIV screened), ADR severity and patient outcomes.

Results: The HCWs screened 6,406 CALHIV; 62 ADRs were reported (1% incidence). Six regimens accounted for all ADRs with tenofovir (TDF)/lamivudine(3TC)/dolutegravir (DTG) (TLD)

(n=26; 42%) reporting more ADRs i.e., dermatitis (31%), dizziness (27%), abdominal pain (19%), nausea (19%), vomiting (15%), and hyperpigmentation (15%). Those on Abacavir (ABC)/3TC+DTG (n=18; 29%) reported nausea (22%), vomiting (22%), dermatitis (17%) as the main reactions. Others had fewer ADRs; ABC/3TC+lopinavir/ritonavir (LPV/r) (n=14; 22%), LPV/r 200/50mg (n=2; 3%), TDF/3TC+efavirenz (EFV) (n=1; 2%), Atazanavir/ritonavir (n=1; 2%). Severity ranged from mild (n=23; 37%), moderate (n=16; 26%), serious (n=18; 29%), and life-threatening (n=5; 8%). TLD accounted for 48% of serious and life-threatening cases (n=11), ABC/3TC/DTG 26% (n=6), ABC/3TC/LPV/r 17% (n=4) and LPV/r 200mg 9% (n=2). Most CALHIV (n=41; 66%) recovered fully within 2months; 12 (19%) experienced progressive symptoms, and 9 (15%) had a disability or fatality. Two patients received a drug-substitution; others were counselled and monitored for changes in symptoms. Some cases had laboratory investigations conducted, hospital admissions or medications prescribed for ADR management.

Conclusion: Training of HCWs and instituting surveillance systems across selected facilities helped to improve ADR reporting and quality of care for patients with ADRs. Findings from this analysis show that ADR surveillance is critical for better health outcomes among CALHIV especially as ADRs could have worsened without proper interventions.

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Performance of Cobas® PSC for HIV-1 Viral Load Testing in Cobas® 6800 System

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Background: Viral load (VL) is the best parameter for the Antiretroviral therapy (ART) monitoring and is best achieved in liquid plasma specimen. However, it requires cold chain for transportation and storage, which is a major limitation in resource-limited health systems. The cobas® PSC is a blood collection and plasma stabilizing novel device that

can be stored and transported at ambient temperature. This card was recently demonstrated to be feasible for VL determination using the Roche CAP/CTM 96 HIV-1 Quantitative Test v2. Our study aimed at evaluating the performance of cobas® PSC to identify patients with VL <1000 copies/ml using the Roche Cobas 6800 system in patients attending primary health care facilities in Mozambique.

Material and Methods: A total of 613 HIV-1 infected adults on ART were enrolled consecutively in two health facilities in Mozambique, between June 2021 and January 2022. From each patient were collected 6.0 ml of whole blood, which was used to prepare venous cobas® PSC and to obtain fresh plasma. All specimens were tested for VL using the Roche cobas® 6800 System. The fresh plasma specimen results were used as reference and a threshold of 1000 copies/ml was considered for the analyses. Sensitivity, Specificity, False Positive and Negative and misclassification rate was estimated. Bland-Altman analyses were performed to determine agreement of VL values generated by the various methods.

Results: Of the 613 participants enrolled, 63.3% (388/613) were females and 36.7% (225/613) males, with a median age of 40 year. 66.1% (406/613) had VL below 1000 copies/ml. A total of 523 paired results were analysed. The sensitivity, specificity of venous cobas® PSC specimen compared to plasma was 99.2% and 96.4% respectively. The misclassification rate observed was 1.5%, with false positive of 2,2% and false negative of 1.2%. A mean difference between plasma and PSC was 0.164 copies/ml (95% CI, -0.873 to 1.2). This difference is in line with the manufacturer's definition of acceptability (0.3 copies/ml).

Conclusion: The cobas® PSC in Roche Cobas 6800 showed good performance compared to the gold standard (fresh plasma) to identify patients with VL <1000 copies/ml and provide reliable and adequate results.

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HIV Differentiated Service Delivery Coverage, Quality and Impact in Mozambique

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Mozambique started implementation of the National HIV DSD Guide in 2018, in all health facilities providing ART services. The objective of this approach is to reduce the burden of the HIV disease for the clients and for the health system. The country is implementing less intensive models (models which its implementation culminates with reduction of clients frequency of visits to the HF) and more intensive models (models which its implementation do not reduce the frequency of visits to the HF). The less intensive models in place in the country are: 3MMD, 6MMD, community drug dispensation by community health workers, community adherence groups and drug dispensation at private pharmacies. The more intensive models in place are: one stop shop models, mobile brigades, mobile clinics, community drug dispensation by providers.

The Ministry of health conducted in 2022 a retrospective quantitative evaluation of implementation of HIV differentiated service delivery, to assess its coverage, quality and impact in HIV services. The evaluation took place in 18 health facilities distributed in all the 3 regions (south, centre and north), and to ensure representativity, HF of all contexts (rural and urban) were included. In total, were included 1596 clinical charts of HIV clients who initiated ART 24 months prior to the evaluation. We found that after 12 months of ART, 76% of the HIV clients were receiving 3 months drug dispensation model, 12% were receiving their services at MCH one stop shop and 6% were receiving 6 months drug dispensation. Only 51% of the HIV clients enrolled on at least one less intensive DSD had one follow up viral load result, but among them 94% was viral suppressed, 5% more when we compared with all clients (regardless of enrolment on DSD). 93% of the clients enrolled on less intensive models was retained after 24 months of HIV treatment.

In conclusion, 3MMD is the most implemented model. There is a big challenge on the viral load coverage on clients enrolled on less intensive models. There is a good impact of less intensive models on viral suppression and retention on care.

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Factors Contributing to Poor Adherence to Highly Active Antiretroviral Drug Therapy (HAART) in Nigeria

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Background: At approved medical institutions in Nigeria, highly active antiretroviral medication treatment (HAART) is the sole officially accessible method for the management of human immunodeficiency virus (HIV) infection. However, there is a need to understand the reasons for the variable outcomes in the effectiveness of HAART in relation to adherence in health facilities in Nigeria. This study investigated the level of adherence to HAART and factors influencing poor adherence in a cohort of HAART patients in southeastern Nigeria.

Material and Methods: The study was a cross-sectional survey of patients (n = 220) on HAART at Bishop Shanahan Hospital, Enugu, Nigeria, conducted between May and November 2018. Adherence to HAART was assessed using the 4-item Morisky Medication Adherence Scale (MMAS-4). Data were collected using a well-structured and self-administered interview questionnaire. Chi-square and binary logistic regression were used to determine factors associated with poor adherence.

Results: Poor adherence was recorded in 55 percent of the participants. Participants aged 40 and above were less likely to adhere to HAART (OR = 0.7; 95% CI: 0.41–1.36). Participants who have been on HAART for more than 6 months (OR = 1.54; 95% CI: 0.48–3.53), those who provide for themselves (OR = 1.30; CI: 0.59–3.05), and those who have any sort of medication reminder (OR = 1.82; 95% CI: 0.71–3.19) were more likely to adhere

to HAART. However, participants who resided in impoverished areas (OR = 0.56; 95% CI: 0.35–1.41), those who take alcohol (OR = 0.49; 95% CI: 0.15–1.26), and those simultaneously taking herbal medicines (OR = 0.38; 95% CI: 0.18–1.37) were less likely to be adherent to HAART. Some of the reported reasons for poor adherence were forgetfulness (75.9%), side effects (12.3%), poor medical service (13.6%), financial constraints (19.1%), and misconceptions of the drug regimen (17.3%).

Conclusion: These findings reveal the prevalence of poor adherence to HAART in Nigeria. To ensure maximum success, health professionals should work closely with patients to devise measures to help them adhere to HAART.

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Drug Resistance Among Women Attending Hospital in the Era of COVID-19 In the Northern Part of Ghana

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Background: Initial evidence from resource-limited countries using the WHO HIV drug resistance (HIVDR) threshold survey suggests that transmission of drug-resistance strains is likely to be limited. However, as access to ART is expanded, increased emergence of HIVDR is feared as a potential consequence. We have performed a surveillance survey of transmitted HIVDR among recently infected persons in the geographic setting of Northern part Ghana.

Material and Methods: As part of a cross-sectional survey, 2 large voluntary counseling and testing centers in Temale enrolled 50 newly HIV-diagnosed, antiretroviral drug-naïve adults aged 18 to 25 years. Virus from plasma samples with >1,000 HIV RNA copies/mL (Roche Amplicor v1.5) were sequenced in the pol gene. Transmitted drug resistance-associated mutations (TDRM) were identified according to the WHO 2009 Surveillance DRM list, using Stanford CPR tool (v 5.0 beta). Phylogenetic relationships of the newly characterized viruses

were estimated by comparison with HIV-1 reference sequences from the Los Alamos database, by using the ClustalW alignment program implemented.

Results: Subtypes were predominantly D (39/70, 55.7%), A (29/70, 41.4%), and C (2/70; 2, 9%). Seven nucleotide sequences harbored a major TDRM (3 NNRTI, 3 NRTI, and 1 PI- associated mutation); HIVDR point prevalence was 10.0% (95%CI 4.1% to 19.5%). The identified TDRM were D67G (1.3%), L210W (2.6%); G190A (1.3%); G190S (1.3%); K101E (1.3%), and N88D (1.3%) for PI.

Conclusion: In the Northern part of Ghana, we found a rate of transmitted HIVDR, which, according to the WHO threshold survey method, falls into the moderate (5 to 15%) category. This is a considerable increase compared to the rate of <5% estimated in the 2006-7 survey among women attending an antenatal clinic in Temale. As ART programs expand throughout Africa, incident infections should be monitored for the presence of transmitted drug resistance in order to guide ART regimen policies.

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Association Between Mental Disorders With Detectable Viral Load and Poor Adherence to Antiretroviral Therapy Among Adolescents Infected With Human Immunodeficiency Virus on Follow-up at Chantal Biya Foundation, Cameroon

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Background: Adolescents living with Human Immunodeficiency Virus (ALHIV) are more likely to experience mental health challenges. In resource-limited countries, co-morbid mental health trouble in ALHIV is the most neglected condition in the HIV care package. The majority of Antiretroviral Therapy (ART) patients affected by mental health problems remain undiagnosed and untreated. Mental health disorders may lead to poor HIV treatment outcomes. This study aimed at identifying mental health conditions associated with detectable viral load or poor ART adherence among 10-19-years old Cameroonian adolescents.

Material and Methods: This was a cross-sectional study which enrolled adolescents perinatally infected with HIV, aged 10-19 years, on follow-up in a referral hospital in Cameroon. Structured questionnaires were administered to the study participants. The primary outcome was detectable viral load, defined as elevated viral load >40 copies/mL in plasma in a person with HIV who has been on ART for at least six months. The secondary outcome was poor ART adherence, defined as > 1 missed dose of ART drugs within the last three days before screening.

Results: In total, 302 adolescents were recruited in the study at a median age of 15.2 years old, including 159 (52.7%) girls. Out of 302 adolescents who were enrolled in this study, 53 (35.0%) were poorly adherent to ART. Among the 247 adolescents with available viral load, detectable viral load was recorded in 33 (26.7%) of them. Low self-esteem was strongly associated with higher risk of poor adherence to ART ($p=0.022$). However, poor ART adherence was slightly less frequent when the adolescent was living with the father ($p=0.085$) or the household was equipped with a television ($p=0.069$). Having both parents alive ($p=0.031$) or receiving efavirenz or dolutegravir-based ART regimen ($p=0.047$) were strongly associated with a lower likelihood of detectable viral load. Moreover, detectable viral load was slightly less frequent in adolescents whose household was equipped with a television ($p=0.084$) or who were completely disclosed for HIV status ($p=0.070$).

Conclusion: This study found that co-morbid low self-esteem had higher odds of poor ART adherence

in ALWHIV. Moreover, both poor ART adherence, and detectable viral load were associated with impaired life conditions in ALHIV.

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Comparison of Clinical Outcomes of Children and Adolescents Living With HIV by Type of Caregiver in Faith-Based Facilities in Nairobi

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Background: Caregivers' role in comprehensive management for children and adolescents living with HIV (CALHIV) is critical for optimal outcomes. This study sought to determine clinical outcomes among CALHIV living with a primary caregiver (their biological parent/s) to those living with a secondary caregiver (any other caregiver besides their biological parent/s).

Material and Methods: A retrospective analysis of active CALHIV living with a primary caregiver compared to those living with a secondary and aged 0-15 years was reviewed for a period 1 year (October 2021 to September 2022). Data included; demographic, valid viral load results (VL done within the last 12 months), Viral load (VL) suppression (VL ≤ 50 copies/ml), clinical appointments data which was critical in establishing the interruption to treatment. Data was analyzed in tables and charts using SPSS.

Results: A total of 177 (M,81 F,96) CALHIV of median age 10 years were analyzed. Among them, 103 (58%) lived with a secondary caregiver while 74 (42%) lived with a primary caregiver. Child HIV status disclosure rate for CALHIV with primary caregiver was 45%, compared to 55% for CALHIV with a secondary caregiver. A total of 161 (91%) had a valid viral load (VL) results while 16 (9%) did not. The overall CALHIV VL suppression rate was 81% (131), with 7% (11) having a VL of 51-400 copies/ml and 19 (12%) having a VL of ≥ 400 copies/ml. Among 74 children living with a primary caregiver, 56 (76%) had a suppressed VL of ≤ 50 copies/ml (LDL) while

4(5%) had VL of 51-400copies/ml and 8(11%) had high VL result ≥ 400 copies/ml while 6(8%) lacked valid VL results. Among the 103 CALHIV living with a secondary caregiver, 75(73%) had suppressed VL ≤ 50 copies/ml, 7(6%) had VL 51-400 copies/ml, 11(11%) had high VL ≥ 400 copies/ml while 10(10%) lacked valid VL results.

Conclusion: The VL uptake and suppression rates for CALHIV with primary caregivers were comparable to those with secondary caregivers. Having a primary caregiver may not always improve CALHIV clinical outcomes, but this study recommends more research to determine the impact of education levels, caregiver age, economic status, distance from the facility, and other distinguishing caregiver characteristics.

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Analysis of Expansion of Multi-Month Dispensing of up to Six Months of Antiretroviral Therapy in Four Provinces in Mozambique: A Mix-Methods Study

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Background: Multi-month dispensation (MMD) of antiretroviral therapy (ART) medicines is a differentiated service delivery (DSD) approach that has proven to reduce the cost of medical travel, reduce burden among patients and providers, and improve adherence and viral load (VL) suppression. In June 2022, the USAID-implemented and PEPFAR-funded Efficiencies for Clinical HIV Outcomes (ECHO) project worked with the Ministry of Health to extend dispensing intervals to up to six months, starting with 30 high-volume health facilities across the four provinces supported by ECHO. This study analyzed six-month drug distribution (6MDD) enrollment and evaluated providers' perspectives on 6MDD operationalization at health facilities.

Material and Methods: This mixed methods study used routine quantitative data collected from

electronic medical records of ART active patients up to December 20, 2022, and semi-structured individual interviews for qualitative analysis, focused on provider perceptions of implementation challenges and patients' uptake and acceptance of 6MDD. Data for the quantitative analysis came from the 30 HFs implementing 6MDD. Eligibility criteria included those aged ≥ 15 years old, on ART > 12 months, a VL of $< 1,000$ copies/ml, not being pregnant or breastfeeding, and not currently taking isoniazid or cotrimoxazole prophylaxis.

Results: This study included 17,626 patients; 57% were female, with a median age of 40 years (IQR 33-48 years), and 6 years median time on ART (IQR 3-9 years). 22.3% of the patients included were enrolled in 6MDD, 56% remained enrolled in three-month drug distribution (3MDD), and 21.7% in other DSD models. Patients enrolled in 6MDD represent 2.4% (3,935/162,075) of the cohort of adult patients (≥ 15 years of age) active on ART. ECHO interviewed 20 health providers from 8 HFs (5 urban and 3 rural), 12 ART clinicians, and 8 pharmacists. 75% of clinicians mentioned that a primary challenge to enrollment in 6MDD was the unavailability of VL test results, and 12% of pharmacists mentioned challenges with managing larger volumes of medicines as a barrier for patients.

Conclusion: 6MDD among eligible patients remains low, and from providers' perspectives, the main challenge is the unavailability of viral load results. Further studies are needed to quantify the clinical outcomes of six-month dispensing and its scalability.

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Improving Antiretroviral Treatment Continuation Among Children Living With HIV in Nampula, Mozambique

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Background: Mozambique faces challenges with timely HIV treatment initiation and continuation for children living with HIV (CLHIV), essential for prevention of disease progression and mortality. In 2021, treatment continuation at 3 months among CLHIV was 47% in Nampula Province. The aim of this abstract is to describe treatment continuation for CLHIV in Nampula province between October 2019 to September 2022 implementation.

Material and Methods: ICAP University of Columbia supports 59 health facilities (HF) in Nampula province and implements a set of targeted interventions to improve treatment continuation, including 1) linking CLHIV initiating antiretroviral therapy (ART) with peers and mentor mothers; 2) phone reminders one and three days before appointments and immediate outreach for those missing appointments; 3) expansion of HIV services to the community level; 4) roll out of optimized ART regimens; and 5) intensive monitoring with weekly review, feedback and discussion of treatment continuation data with HF teams. We used routinely reported, aggregate, retrospective data to assess treatment continuation at 3 months and treatment interruption among CLHIV. Treatment continuation at 3 months was defined as the proportion of children newly enrolled on ART 5 months prior to the reporting period end date, who have a clinical consultation or ART pick-up between 61 and 120 days after ART initiation. Treatment interruption was defined proportion of CLHIV who have not returned within 60 days of their expected clinical consultation or ART pick-up, which includes those who were reported as dead by end of reporting period. We report data from the 59 HF for the period from October to December 2019 (pre-intervention) and July to September 2022 (post-intervention).

Results: Pediatric treatment continuation at 3 months increased from 57% (130/228) in the pre-intervention period to 90% (276/308) in the post-intervention period. During the same period, treatment interruption reduced from 27% (61/208) to 2% (6/308), and death reduced from 4% (8/228) to 2% (5/308).

Conclusion: Implementation of targeted interventions, combined with intensive monitoring and data use, led to improvement in treatment continuation outcomes among CLHIV. ICAP will continue to assess gaps and design contextualized

interventions to address remaining challenges for treatment continuation in this vulnerable group.

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Medium-Long Term Impacts of Antiretroviral Drugs on Arterial Blood Pressure in People Living With HIV in Malawi

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Background: We aimed to explore the medium-long term impacts of Anti-Retroviral Treatment on Hypertension in a sample of HIV-positive in Malawi.

Material and Methods: This was a retrospective case control study carried out at "DREAM" health Centre in Blantyre/Malawi on enrolled and followed up patients from 2005-2019. Information about age, gender, blood pressure, ART regimen, BMI, CD4 count, Viral load, Biochemistry, hemoglobine, marital status, education, survival and period on AntiRetroviral drugs were retrieved from data base from 01/01/2006 to 31/12/2015. In total, we enrolled (alive and on HAART) 1350 patients > 18 years (mean age: 43.4 and the SD was ±10.7 with 1031 (65.9%) females who were taking ARVs over 6 months at the date of enrollment. The mean observation time from the HAART initiation was 77 months per person (SD±40).

Results: Among patients with hypertension, 30/675 (4.4%) developed a stage 3 hypertension, 154 a stage 2 (22.8%) and 491 a stage 1 (72.8%). Hypertension stages were not associated to statistic significant differences of age and/or gender ($p=0.422$, $p=0.281$ respectively). At baseline, patients who developed hypertension showed higher (hemoglobin, CD4) and lower VL ($P<0.001$). Patients on AZT-based regimen and TDF-based regimen were at high risk to develop hypertension while PI-based regimen was protective to hypertension ($P<0.001$). In a multivariate analysis, factors independently associated to Hypertension were higher CD4 count and BMI at the visit-date, while Baseline Viral Load and PI-Including regimes were protective factors. Education level was inversely associated with risk of

hypertension, while being married was associated of risk of hypertension ($p<0.001$). Mortality rate among hypertensive patients was 1.6% for those treated for hypertension against the 3.6% for those not treated.

Conclusion: We found a protective action of PI-including regimens compared with AZT based regimen that is associated to an increased risk of hypertension. Factors related to a better general health status are associated to a higher risk of hypertension as well as lower education, older age and male gender. Treatment should be started as soon as Hypertension stages 2-3 are reached and control by behavioral factors is no longer effective.

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Human Immunodeficiency Virus Drug Resistance (HIVDR) and Baseline Characteristics Among Antiretroviral Therapy (ART) Human Immunodeficiency Virus Drug Resistance (HIVDR) and Baseline Characteristics Among Antiretroviral Therapy (ART) Experienced Children and Adolescents Under the Care of Chidamoyo Christian Hospital in Hurungwe, Zimbabwe

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Background: Human Immunodeficiency Virus (HIV) remains a persistent global public health challenge. In 2020 approximately 37.9 million individuals were living with HIV globally, including 1.7 million children <15 years old, with a global HIV prevalence of 0.8% among adults. A larger portion of people

living with HIV are found in low- and middle-income countries, and Sub-Saharan Africa (SSA) is home to about 68% of people living with HIV in the world. Strikingly, with increased uptakes in PMTCT, challenges in ART programs, and high viremia among children and adolescents in SSA, the success rate of ART might be quickly compromised, with possible HIVDR emergence, particularly after years of paediatric ART exposure. Therefore, monitoring ART response in children and adolescents in terms of HIVDR patterns and other socio-economic determinants of disease progression might help achieve better treatment outcomes at individual levels. At a programmatic level, this can guide further optimization of treatment options for SSA especially Zimbabwean rural where there is paucity of information on HIVDR prevalence in children and adolescents.

Material and Methods: We enrolled 89 children and adolescents experiencing virologic failure from Chidamoyo Christian Hospital in Hurungwe. We managed to amplify all the 89 using nested PCR and 32.5% (29) had resistance to at least one ART drug and analysis was done using the 29 samples.

Results: Among the 89 participants with virologic failure, 29 were resistant to at least one of their ART drugs. 39.2% of males and 23.07% of females had HIV-1 with resistance to at least one medication. Among 29 participants with HIVDR mutations, the prevalence of at least one HIVDR mutation to protease inhibitors (PIs), Nucleotide Reverse Transcriptase Inhibitors (NRTI), and Non-Nucleotide Reverse Transcriptase Inhibitors (NNRTI) were 6.47%, 46.76% and 46.76% respectively. Of the 29 participants who had HIVDR 19 (65.5%) had resistance to a drug they were currently taking and they needed to be switched to a better effective ART regimen

Conclusion: Use of HIVDR testing in guiding and monitoring development of HIVDR at the start of ART or at 1st failure can be very important in treatment options and patient management.

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Abstract 328 was withdrawn.

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Optimizing Program Viral Load Outcomes Using Community Monitoring Teams as a Strategy Across 3 States in Nigeria: Lessons From the ECEWS SPEED Project in Nigeria

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Background: Viral load monitoring is an approach which is essential for Antiretroviral treatment failure detection. After 6 months on ART, routine testing of viral load is conducted and repeated 12 monthly onwards. This acts as a motivation for optimized adherence amongst clients taking ART, and further aids in creating an understanding of the HIV infection and implications on individual health as posited by the World Health Organization. Unfortunately, most recipients of care do not have access to viral load testing creating missed opportunities for adequate monitoring. The Sustainable Programs for HIV Epidemic Control and Equitable Service Delivery (SPEED) Project being implemented across Delta, Osun and Ekiti states in Nigeria, initiated a ramp-up of viral load monitoring across supported Local Government Areas.

Material and Methods: Recipients of care who have been on ART for 6 months and above, eligible for viral load sample collection within the period of October to December 2022, were line listed. Tactical coordination teams made up of multi-disciplinary service delivery providers, who drive community client tracking and monitoring were set up in late October 2022. The eligibility list was generated from the Electronic Medical Record and distributed to viral load champions. Clinical information were collated and summarized using proportions. Chi-square test was used to compare variables categorically.

Results: In October 2022, a sample collection rate of 51% was recorded. The collection rate hit its peak in November 2022 (19814 bled which accounted for 63% of sample collection effort). Statistically it showed that the result return rate was significant across project states as reflected in the high value of significance of p (0.000). With reference to the UNAIDS 3rd 95, adults reported a good suppression rate of 95%, with pediatrics and adolescent sub populations recording poor suppression rates that ranged from 67% to 89% except for the male 1 – 4 years having a 100% suppression rate.

Conclusion: Focused viral load monitoring programs aid in optimized quality of care. Viral load suppression will be achieved with robust enhanced adherence counselling. Continuous follow-up mechanisms to the PCR lab will aid improved turnaround time for viral load results.

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Profile of Patients Living With HIV Who Are Absent From Care at the Yalgado Ouédraogo University Hospital in Ouagadougou

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Background: Despite the fact that HIV patients receive free care, the cohorts are confronted with the problem of lost to follow-up. The aim of this study was to determine the proportion of patients absent from eye care services and to analyze the reasons.

Material and Methods: This was a cross-sectional study. It consisted in searching for patients living with HIV who were absent from health care services for their follow-up and to describe the profile and search for the reasons for their absence.

Results: A total of 5935 patients were followed up at the Yalgado Ouédraogo University Hospital. Among them, 190 (3.2%) were absent from the care services at the time of our study. The mean age of the patients was 42.7±11.7 years and a sex ratio of

0.7 in favor of women. The patients were unemployed in 43.2% and not in school in 54.8%. The majority (85.3%) resided in Ouagadougou and 55.3% did not share their serological status. Of the 99 patients interviewed, the reasons for absence were death (32.1%), travel (14.2%), stigmatization (2.1%), and deterioration of general condition limiting travel (2.1%).

Conclusion: This study shows the interest of reinforcing therapeutic education in order to have a high rate of adherence to ARV treatment and the implementation of an effective system of early detection and active search for patients absent from care services.

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The Role of Mass Media Campaigns in Improving Adherence to Antiretroviral Therapy Among Adolescents Living with HIV in Southwestern Uganda

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Background: Globally, about 1.8 million adolescents between the ages of 10 and 19 were living with HIV by close of 2021, of these, about 1.5 million were living in sub-Saharan Africa. This study explored the influence of mass media campaigns in promoting adherence to antiretroviral therapies among adolescents living with HIV in southwestern Uganda.

Material and Methods: We conducted a phenomenological qualitative study design that was adopted to explore the role of mass media campaigns on adherence to antiretroviral therapy among adolescents at the adolescents' HIV clinic Mbarara Regional Referral Hospital. The FGDs were conducted in Runyankole-Rukiga, and they were transcribed verbatim and later translated to

English. Data were analyzed using thematic analysis.

Results: We conducted 7 Focus Group Discussions with adolescents living with HIV aged 10–19 years and 5 key informants' interviews with the health care providers. Results from the analysis were grouped into three broad themes: awareness of mass media HIV campaigns promoting adherence to ART, influence of mass media campaigns on adherence to antiretroviral therapy, and preferred mass media mode of delivery by adolescents' living with HIV. Participants preferred broadcast media channels and messages that featured success stories of people living with HIV.

Conclusion: HIV mass media campaigns influence adherence to antiretroviral therapy among people living with HIV. It is recommended that HIV-related media campaign designers consider the unique needs of adolescents while designing and airing out various media campaigns. This will influence their positive living and thus lead to their increased health life expectancy.

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Determinant of Viral Load Suppression Amongst Clients Accessing HIV Care and Treatment in ECEWS SPEED Project Supported Sites in Southern Nigeria

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Background: One primary goal of the HIV epidemic control program is to stop the transmission of the virus and reduce morbidity and mortality of people living with HIV. Viral load suppression remains a unique indicator that addresses both the issues of reduction in transmission rate and improved quality of life of Recipients of Care (RoC). This study seeks to assess the factors that affect clients' viral load suppression in the ECEWS US Centers for Disease

Control and Prevention (CDC) funded Sustainable Programs for HIV Epidemic Control and Equitable Service Delivery (SPEED) Project.

Material and Methods: A retrospective cross-sectional study of 34,998 adult Recipients of Care aged ≥ 18 years. HIV treatment service delivery data was extracted from the electronic medical record (EMR). Descriptive statistics were used to characterize participants' socio-demographic characteristics. Chi-square and t-test were employed to assess the association between viral load suppression and other related variables at $p < 0.05$ using Statistical Package for Social Sciences 23.

Results: 34998 clients (60.7% female & 39.3% males, with a mean age of 38 years and mean weight of 64.12. 77.2% of clients access drug refills at the facility while 22.8% are in the decentralized drug delivery model (DDD), 95% of the clients (33,445) were virally suppressed. There is a significant association between viral load and sex ($X^2(1) = 18.540$, $p < 0.01$). There is a significant difference between the age of the patients whose viral load was suppressed ($M = 37.86$, $SD = 12.92$) and those unsuppressed ($M = 37$, $SD = 14.948$). ($p < 0.01$), $t(1641.4) = 2.208$, $p < 0.05$, there is a significant association between viral load and DSD Model ($X^2(1) = 359.333$, $p < 0.01$). There is a significant difference between the weight of the patients whose viral load was suppressed ($M = 64.417$, $SD = 15.12$) and those unsuppressed ($M = 57.697$, $SD = 18.05$). ($p < 0.01$), $t(1648.9) = 14.420$, $p < 0.01$.

Conclusion: The demographic characteristics of Recipients of Care and decentralized drug delivery plays a significant role in viral load suppression. Consequently, program optimization of person-centered care is essential to achieving viral load suppression.

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Experience of Ondo State HIV Surge Program Using ASPIRE Strategy: An Analysis of the Fiscal Year 2022

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Background: Over the last three decades, Human Immuno-Deficiency Virus (HIV) remains a compelling public health threat leading to concerted efforts aimed at achieving epidemic control globally. The collaborative efforts aligns to the three (3) United Nations Programme on HIV/AIDS (UNAIDS) 95-95-95 goals and the ten (10) Sustainable Development Goals (SDGs) for improved health service delivery. In addition, these concerted efforts expressly resonate the HIV/AIDS response, aimed at achieving epidemic control globally. However, Nigeria is the third country with the highest burden of people living with HIV among other countries in the globe, as expressed by United Nations Office on Drugs and Crime (UNODC), 2018. Furthermore, the 2019 Nigeria National AIDs Indicator and Impact Survey conducted in 2018 reported HIV prevalence to be 1.4%, with over 1.9 million persons on antiretroviral treatment (ART), and Ondo State is one of its South Western States. "ASPIRE" stands for Active Case finding, Sub-population focus, Prevention surge, Innovative data systems, Revamped program integration and Extensive stakeholders' engagement. This study describes Ondo State's experience using the consolidated strategies coined "ASPIRE" for its HIV Surge program.

Material and Methods: "ASPIRE" is an approach coined to drive a client-centric, age-specific, gender-sensitive, integrative, and culturally diverse system for improved program service delivery and sustainable wins across the three (3) UNAIDS HIV targets. Data from the Fiscal year (FY22) {October 2021 to September 2022} were analysed using Microsoft excel and presented in charts and tables.

Results: In FY 22, a total of 7058 newly identified clients were enrolled in ART, with a matching increase in treatment growth. Ondo State's treatment saturation improved from 53% as at the end of FY 21(September 2021) to 78% in FY 22 of the same period, with a corresponding unmet need of 5,948 clients. Interruption in treatment (IIT) and viral suppression improved to 0.3% and 94% respectively. There was also improvement in indicators' performance across the three UNAIDS 95s for all sub-populations.

Conclusion: The ASPIRE model offers a comprehensive and integrative HIV prevention, treatment and care services without compromising fidelity and quality of program service delivery.

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Differentiated Care as a Panacea for Improving Retention of Adolescents and Young People Living With HIV in Anambra State Nigeria

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Background: Globally, Adolescents and young people (AYP) constitute a high HIV burden of 34.1%. FHI 360 through the Global Fund (GF) utilized Differentiated models of care (DMoC), a patient centered strategy that ensures efficiency of service delivery at the health facility (HF) and community. It involves decentralization of drug refills, clinical care and viral load services to clients living with HIV and on treatment. The paper reviews the effect of DMoC on retention of AYP in GF supported HFs in Anambra, Nigeria.

Material and Methods: A retrospective cohort review of AYP (10-24yrs) on Facility and community DMoC before December 2021 and retention in care observed between December 2021 and December 2022. The facility DMoC included Adolescent clubs,

Family, Health worker (HW)-led and Fastrack models. While Community models include HW-led community groups, Client led Community refill, Home based refills and community ART refill clubs. Secondary data was obtained from the Retention and Audit determination tool (RADET). The t-test statistic was applied to understand the effect of DMoC on retention of AYP.

Results: A total of 2264 (1119M, 1145F) clients 1132 who were placed on DMOC and 1132 who were never placed on DMOC) as of December 2022, reveals that those never on DMOC as at December 2021 had a retention of 84% by December 2022, those on DMOC between December 2021 and December 2022 had a retention of 93.2% as at December 2022. Those on DMoC included Community 21% (N = 806) and Facility 79% (N = 326). Those on Facility and Community DMoC had suppression rates of 95% and 87% respectively. A statistically significant difference was observed in the retention outcome for AYP on DMoC, when compared to those not on DMoC, using the t-test ($t = 12.636$; $p = 0.000$).

Conclusion: DMoC is effective for improving retention in care of AYP on ART by improving medication adherence, reducing missed appointments, and lost to follow up. It provides for psychosocial care and support among the AYP peers for optimal treatment outcomes and is recommended for all programs that experience low retention for AYP living with HIV and on ART in other regions.

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Factors Associated With Readiness to Start Antiretroviral Therapy (ART) Among Young People (15-24 Years) at Four HIV Clinics in Mulago Hospital, Uganda

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Background: Globally, the HIV burden continues to rise among young people despite the discovery of ART. This study assessed demographic and psychosocial factors among young people associated with readiness to be initiated on ART.

Material and Methods: A quantitative cross-sectional study was conducted among newly diagnosed HIV positive young people aged 15-24 years at 4 HIV clinics at Mulago Hospital. Readiness was measured as a self-report by the individual to the question, "How ready do you feel to start ART?"

Results: Of the 231 young people enrolled, the mean age (SD) was 20.7years (+/-2.8) and most were female (66.2%). Majority were very ready (53.3%) and very motivated (51.1%) to start ART. Higher treatment readiness was associated with being female (95% CI [5.62, 8.31], $p=0.003$), thinking that ART cures HIV (95% CI [0.43, 0.86], $p=0.005$), history of having unprotected sex (95% CI [0.79, 0.87], $p<0.001$), anticipating negative HIV results (95% CI [0.26, 0.88], $p=0.017$), internalized stigma (95% CI [0.83, 0.98], $p=0.018$) and knowledge of positive ART effects for others (95% CI [0.84, 0.93], $p<0.001$).

Conclusion: Understanding the underlying factors associated with ART readiness among young people can inform strategies to support and increase individuals' readiness to initiate ART and early engagement in care.

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Experiences of Caring for Adolescents Living with HIV (ALHIV): A Qualitative Interview with Caregivers

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Background: This study aims at exploring experiences of people caring for adolescents living with HIV, here in this study also known as caregivers. By 2020, 150000 adolescents were living with HIV. 32000 adolescents were dying of AIDS related causes. HIV/AIDS remains one of the most serious public health problems, especially

among the adolescents. This has placed a heavy burden on many caregivers, yet they are essential in caring for ALHIV. However, focus of all interventions has excluded caregivers of ALHIV. Thus, this is the reason why this study is being conducted to find out caregivers' experience in caring for ALHIV.

Material and Methods: A phenomenological study was carried out. Purposive sampling was used to select a total of 15 caregivers to participate in the study. These participants were subjected to in-depth semi-structured interviews. Their responses were recorded, transcribed and translated for thematic analysis.

Results: while analyzing the results, six themes emerged. They include: diagnosis and reaction to diagnosis, experiences on adolescent's HIV serostatus disclosure, stigma and discrimination, care disengagement, and lastly, challenges during care and coping strategies. Caregivers experienced feelings of fear, Guilt, suicidal thoughts after diagnosis. Stigma and discrimination of adolescents living with HIV which was common at school and from the neighbors and the adolescent stage were some of the challenges experienced by the caregivers and it makes it hard to retain ALHIV in care.

Conclusion: Families are the main source of caregiving to the adolescents living with HIV (ALHIV). The study's findings indicate that caregivers experience challenges related to family needs, and psychological challenges resulting from the adolescence stage. So, families should not be left to shoulder the burden of caring for ALHIV. As a way forward, social network support should also be strengthened for most caregivers as a coping strategy.

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Adherence and Retention: Long-Term Care Challenges for Adolescents and Young Adults Living in Pakistan With HIV

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Background: To achieve successful virologic suppression and treatment results, antiretroviral medication (ART) adherence and retention in treatment programmes are necessary. More data on adherence and retention trends during and after the shift from child- to adult-centered care is needed in Pakistan to assure high-quality treatment and to support the development of tailored interventions to enhance patient outcomes in this vulnerable group. We aimed to study long-term challenges in adherence, retention, in adolescents and young adults receiving antiretroviral treatment.

Material and Methods: Prospective longitudinal study was conducted among the patients receiving antiretroviral medication treatment. Questionnaire was distributed among individual voluntary patients taking antiretroviral treatment. Data was collected, coded, and analyzed using SPSS version 26. Descriptive statistics was used to compute patients' attributes. Multiple regression analyses were used to assess association between medication possession ratio, virologic suppression and factors.

Results: Among the total of 384 participants, 79% of them were male and average age was 17.5 years. Virologic suppression rate was 62% and 76% of patients had $\geq 90\%$ medication adherence. Most common co-morbidities were mental illness and substance abuse. While emotional trauma was majority causes that effect patient's adherence and retention with antiretroviral treatment.

Conclusion: The results conclude significant ratio of adolescents and young adults lost to follow up throughout the antiretroviral treatment. Lowest virologic suppression rate and antiretroviral treatment adherences remain a major concern. Considerable attention alone with targeted interventions needed to improve adherence and retention to antiretroviral treatment to achieve global goals.

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Incidence, Predictors and Reasons of Attrition of Patients on Antiretroviral Therapy for HIV in Eight Large-Cohort Sites in Conakry

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Background: The purpose of this study was to estimate the incidence of attrition (death and lost to follow-up) among patients living with HIV on ART and to identify key predictors of this attrition. It also described the reasons why some patients are lost to follow-up.

Material and Methods: This was a historical cohort study of patients living with HIV put on ART between January 1, 2015 and December 31, 2020 in 8 large cohort sites in Conakry. An additional cross-sectional survey in the form of an investigation was conducted to describe the final status of patients reported lost to follow-up by the sites, as well as to describe the reasons for their loss to follow-up. Kaplan Meier techniques were used to estimate cumulative incidence, and the multivariate Cox proportional model was used to identify predictors of attrition.

Results: The cumulative incidence of attrition was 19.50 over a median follow-up time of 2.5 years, for an overall attrition rate of 7.79 years per 100 person-years. Factors significantly associated with attrition were: Age 15 - 24 years [aHR = 2.212; 95% CI (1.321 - 3.704)], age >35 years [aHR = 1.723; 95% CI (1.041 - 2.852)], viral load >100,000 copies/ml [aHR = 2.056; 95% CI (1.668 - 2.534)], patients not on the 3-month or 6-month appointment system [aHR = 3.031; 95% CI (2.603 - 3.531)].

Conclusion: This study showed that the incidence of attrition increases with increasing follow-up time. Investigation of lost to follow-up reduced the estimated number of patients considered lost to follow-up and increased the number of deaths that

were previously underreported. A prospective mixed study including many more variables would allow a better understanding of the attrition phenomenon among people living with HIV on ART in Guinea.

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Tracking Therapeutic Failure Through the Transition From TLE to TLD

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In November 2019 Mozambique started the transition from TDF/3TC/EFV (TLE) to TDF/3TC/DTG (TLD) for adult beneficiaries of ART in the country which at the time numbered 1,243,020. The new medication brought many benefits, including a low profile of drug resistance. As part of the monthly monitoring of beneficiaries of HIV care, the Ministry of Health also had established a suspected therapeutic failure system that submitted cases to the national level for review and approval. Though not specifically designed to track the impact of the transition to TLD, during the transition the platform registered a significant decline in the number of suspected therapeutic failure cases from Out 2019 to April of 2020 when the transition was completed.

When taken as a three-month rolling average, before the initiation of the TLE to TLD transition there was consistently above 1000 cases of suspected therapeutic failure in the 15+ population, with a three month average max of 2,118 in July 2019. Starting in November submitted cases decreased to 1,195, until April when the transition finished it dropped even further to 561 average cases. During 2020 the cases continued to drop, with the year closing with a three month average of 130 cases per month. The impact of this transition, which is the only medication change during that time, is clear from these data. During the year of 2021 the number of suspected therapeutic failure remained below 190, with that trend continuing until June of 2022. Starting in July 2022 it is possible to see drug resistance starting to occur across the country, with an increase from 206 cases in July to 344 in December.

New HIV medication combinations can significantly impact the number of suspected therapeutic failure cases owing to their novelty in the prescribed regimes. The transition of TLE to TLD improved the quality of beneficiary care throughout the country, decreasing suspected therapeutic failure cases from consistently over 1,000 cases to slightly above 150 cases in three-month averages. The increase of suspected cases toward the end of 2022 should be followed to ensure identification of any resurgence of suspected therapeutic failure.

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Trends in Non-adherence Rates for ART Services, a Review of Evidence From Mozambique

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Background: In Mozambique there are approximately 1.9 million people living with HIV on ART treatment, of which approximately 35% are men. As the country nears the UNAIDS 95-95-95 targets for 2025 there has been an increased focus on improving adherence and retention. In Mozambique, the current definition for non-adherence is a beneficiary that has missed their appointment by more than 7 days, which according to a national reporting system makes up approximately 25% of active ART users monthly.

Material and Methods: To better understand the factors that can negatively or positively influence adherence status a report was created in the electronic patient tracking system. This report disaggregates the non adherence beneficiary population into the age groups <10, 10-14, 15-24, 25-49, >=50 as well as by gender. An analysis was done to help inform priority intervention areas, focusing on gender differences in the data.

Results: Overall, men had a higher non-adherence than women, with a six-month average of 34% vs 27%. When comparing the age groups, children 0-9 had the least difference between male and female, (0.7%), followed by 10-14 age group (2%). In the 15-

24 age group there increasing is a gap between men and women in the rate of non-adherence, 30.6 % and 33.8% respectively, which continues to increase in the 25-49 age group. In this group men have a 9.6% higher nonadherence rate over the last 6 months than women, with a six-month average of 37% of all scheduled pickups defaulting.

Conclusion: Finding and retaining men has been a challenge in Mozambique, especially due to the high mobility of job-seeking men in the southern half of the country. In 2018 the National Male Engagement Guide was launched, with the aim of specifically creating interventions and programs for men. Despite this approach these data show that men continue high rates of non-adherence. Adhesion is an important indicator of the HIV care and treatment system in the country, and the high percent of defaulters seen in men 25-49 is worrying. The level of engagement and quality of services offered to adult men should be reviewed and reinforced at all levels.

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Age-Adjusted Association Between Differentiated Model of Care (DMOC) (Dmoc) and Treatment Outcome Among Adult PLHIV in Nigeria

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Background: With the gains of the PEPFAR ART program that has resulted in an increasing number of clients on treatment and the challenges of available human resources in the health facilities, DMOC has proven to be an efficient model of reducing the burden on the health system. This study reviewed the age-adjusted association between DMOC and treatment outcome.

Material and Methods: A cross-sectional study of 81055 adult PLHIV (APLHIV) aged ≥18 years, being treated with antiretroviral medications from 2018-

2022. HIV treatment data were collected from multiple ECEWS CDC-funded supported treatment sites. Descriptive statistics were used to characterize participants' socio-demographic characteristics. Chi-square and multivariable logistic regression were employed to assess the association between DMCO and treatment outcome among APLHIV at $p < 0.05$ using Statistical Package for Social Sciences 23. We defined treatment outcome as being active on treatment with a suppressed viral load as adequate and inadequate for lost to follow-up without a viral load status.

Results: The overall median (IQR) age of participants was 37(15) years with 52093(64.3%) being males. The most requested DMCO was DARF 15411(19%) followed by Fast Track 11986(14.8%) and most APLHIV 527772(65.1%) were considered to be adequate in their treatment. The study showed a significant association between DMCO and treatment outcome ($\chi^2 = 4171.312$, $p < 0.0001$). Age-Adjusted Odds Ratio (AOR), 95% Confidence Interval (CI) for age (years) <24 vs >64 (AOR=0.63, 95%CI: 0.49-0.82), 25-34 vs >64 (AOR=0.53, 95%CI: 0.42-0.68) 35-44 vs >64 (AOR=0.59, 95%CI: 0.47-0.75), 45-54 vs >64 (AOR=0.59, 95%CI: 0.46-0.75), 55-64 vs >64 (AOR=0.60, 95%CI: 0.46-0.80) and DMOC (CARC vs S-CARG (AOR=3.71, 95%CI: 2.21-6.22), Adolescent Refill Club vs S-CARG(AOR=5.6, 95%CI: 3.20-9.80), CPARP (AOR=5.06, 95%CI: 2.92-8.76), DARF (AOR=3.62, 95%CI: 2.16-6.06), Fast Track(AOR=11.62, 95%CI: 6.95-19.44), MMD(AOR=8.18,95%CI:5.18-14.87), MMS(AOR=27.04,95%CI:12.02-60.84) and F-CARG(AOR=11.97, 95%CI: 6.72-21.30) were significantly associated with inadequate treatment outcome.

Conclusion: With the aging population of PLHIV and the gains from the over two decades of the PEPFAR Program, decentralization of ART refill sites while putting into consideration age appropriate DMOC is essential to achieving adequate treatment outcomes.

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Factores Associados ao Abandono no Tratamento Anti-retroviral dos Pacientes Jovens com HIV+ em Quelimane, 2022

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Introdução: O HIV/SIDA ainda representa um problema de saúde pública, mundial e em moçambique, para além de que, constitui um problema social dado as suas características epidemiológicas peculiares. Em Moçambique o número de abandonos tem aumentado significativamente, cerca de 60% de pacientes abandonaram o TARV, colocando um novo desafio à saúde pública. No nosso país, o nível de retenção continua elevado, sendo que, cerca de 68% dos pacientes que iniciam o tratamento permanecem activos, após aos 12 meses depois abandonam o tratamento. Objectivo: Compreender os factores associados ao abandono no tratamento anti-retroviral dos pacientes jovens com HIV+, em Quelimane, 2022.

Metodologia: Foi feito um estudo descritivo de abordagem qualitativo, usando um guião de entrevista semi-estruturado. Foram incluídos 17 pacientes em TARV e 6 profissionais de saúde, usando a amostragem intencional. O estudo foi realizado em Quelimane no ano de 2022. Para análise de dados recorreu-se a análise do conteúdo.

Resultados: Do total de 17 pacientes em TARV entrevistados, maior parte (n=10) tinha idade compreendida entre 18 a 21anos, com o nível secundário (n=9) e maior parte (n=7) eram domésticas. A maioria dos pacientes revela saber da importância do tratamento anti-retroviral, contudo o abandonam pelos seguintes factores: Factores estruturais: falta de acompanhamento médico, demora nas filas da farmácia para aquisição dos medicamentos e incapacidade do serviço em responder à demanda com qualidade. Factores individuais, relacionados ao medo que os pacientes têm de lhe dar com a doença, a não

aceitação do seu estado de saúde, e a forma como contrária a doença. Factores económicos como sendo: a falta de dinheiro de transporte para chegar ao centro de saúde, e a falta de alimentação adequada. Factores socioculturais, o caso da discriminação, prática de procura dos medicamentos tradicionais e de outros medicamentos sem a prescrição médica para o tratamento do HIV.

Conclusão: Os resultados mostram que os entrevistados compreende dos factores associados ao abandono no tratamento anti-retroviral e sabem da importância do tratamento anti-retroviral, assim como as consequências do abandono, justificam-se por diversos factores associados ao abandono, como sendo: factores estruturais, factores individuais, factores económicos e factores socioculturais.

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Case Study on Rescue Raltegravir-based Antiretroviral Regimen Introduced During Late Pregnancy with Unsuppressed Viral Load to Prevent Mother-to-Child Transmission of Human Immunodeficiency Virus: Catholic Relief Services Experience in Zambia

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Background: In Zambia, HIV viral load (VL) testing during pregnancy is performed quarterly. Some women present with unsuppressed VL (defined as VL of >1000copies/ml) in late pregnancy. This poses a high risk of mother-to-child transmission (MTCT) of HIV. We describe a case study of a pregnant woman who presented in third trimester with series of unsuppressed VL.

Material and Methods: We present a 27-year-old pregnant woman who we first encountered in 2019 at 36 weeks and 5 days gestational age. She was diagnosed HIV-positive at 13 years and was initiated on D4T/3TC/NVP. She had series of unsuppressed VL results, the highest being 254,500 copies/mL (August 2019). In 2016, she was switched to TDF/3TC/LPV-r due to treatment failure (VL was 30,646). She presented in ART at 36 weeks + 5 days gestation age. We formed a multi-disciplinary team (MDT) to manage her unsuppressed VL. She had poor adherence to ART. We enrolled her in enhance adherence counselling (EAC) program. The genotypic resistance testing revealed high level resistance to Lamivudine and Emtricitabine, other drugs were susceptible. We boosted the ART regimen with Raltegravir 400 mg twice daily and set weekly reviews coupled with VL testing. One week post introduction of Raltegravir, VL dropped from 254,500 to 11,097 copies/mL and 620 copies/mL two weeks later. We enrolled the mother-baby pair for follow up for 24 months. Baby's last HIV test done 6 weeks after breastfeeding cessation was non-reactive.

Results: Poor adherence led to unsuppressed VL. MDT EAC approach and rescue regimen were key in re-suppressing VL and averting MTCT.

Conclusion: Conducting MDT EAC sessions in unsuppressed VL pregnant woman coupled with potent ART regimen introduction is effective in averting MTCT of HIV. Raltegravir-based backbone may offer an effective option for preventing MTCT, especially when VL needs to be suppressed rapidly prior to delivery.

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Factors Influencing Self-Management in Youth Living With HIV in Lesotho

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Background: Many adolescents and youth live with the human immunodeficiency virus (HIV) worldwide. HIV treatment goals and health outcomes of adolescents and youth living with HIV (YLWHIV) are lagging. One way to improve

outcomes is through supporting YLWHIV to acquire self-management (SM) skills. SM is a youth's ability to take control of their health and adopt good health practices. Although SM is associated with improved health outcomes, condition-specific, environmental, individual and family contextual factors influence SM. Knowledge of contextual factors influencing SM of YLWHIV in Lesotho could assist in tailoring SM support strategies. Aim: The study aimed to describe the factors that influence SM of YLWHIV in Lesotho.

Material and Methods: An exploratory-descriptive, cross-sectional quantitative research design was used. The data were collected through a validated self-report questionnaire available in English and Sesotho. Data analysis was done using the Statistical Package of Social Sciences (SPSS) version 27 to obtain descriptive and inferential statistics.

Results: Participants had high SM scores (mean 92.7%), which corresponded with their treatment outcomes. All the participants (100%; n=183) had viral load values of less than 1000 copies/ml. Although SM scores were high, YLWHIV had lower item mean scores in relational and participatory components, which are crucial for their transitioning to adult care, negotiating condom use and accessing community services. High SM scores in this sample could be attributed to condition-specific factors, including once-daily doses (100%; n=182) and a longer duration on treatment (81.4%; n=149 on ART for more than 10 years).

Conclusion: The study supports the notion that uncomplicated treatment regimens, longer duration on treatment, access to adolescent-friendly services, and stable living conditions may lead to better SM. However, further exploration of factors influencing SM across various healthcare settings and with more diverse YLWHIV are needed to contextualise SM support interventions for YLWHIV, particularly those transitioning to adult care, to ensure meeting global targets.

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Determinants of Survival in Treatment Among Adults Living With HIV on Antiretroviral Therapy in Bauchi State, Nigeria

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Background: Antiretroviral therapy (ART) has greatly improved the survival and quality of life for individuals living with HIV. However, challenges in prevention of HIV-related mortality and poor retention of patients in ART treatment pose threats to effective ART interventions. This study investigated the determinants of survival and retention in care of adults living with HIV on ART treatment in Bauchi state Nigeria.

Material and Methods: A retrospective cohort study was conducted to investigate antiretroviral treatment outcomes in a sample of 6,748 HIV-positive clients from two clinics over a 3-year period from Jan 2020 to Nov 2022. Data was extracted from the Lafiya Management Information System and analyzed to assess survival outcomes including mortality, interruption in treatment (missed ART pickup after 28 days of appointment) and lost-to-follow-up (never returning for ART after 28 days of appointment). Clients enrolled in the last 6-months were excluded from analysis. Participants baseline demographic characteristics, clinic, pharmacy, and laboratory data were also extracted to examine associations with survival outcomes. Cox proportional hazard was modeled to identify independent predictors of survival.

Results: The likelihood of interrupting treatment was lower among males (HR: 0.86) compared with females. Offer of isoniazid preventive therapy at commencement of treatment (HR: 2.80) and having high diastolic blood pressure (≥ 90 mm Hg) (HR: 1.42) showed higher likelihood on interruption in treatment compared with those who did not receive isoniazid prophylaxis, and those with lower

diastolic blood pressure (80-89 mm Hg) (HR: 0.9), respectively. Clients who had viral load status less than 1000 c/ml were less likely to be lost-to-follow-up (HR: 0.20) and to experience mortality (HR: 0.36) than clients with higher viral load status. Clients who were recommended for post-enhanced adherence counselling for viral load suppression testing were more likely to experience mortality (HR: 29.1) compared with those who were recommended for the routine viral load testing.

Conclusion: Despite receiving recommended treatments, interruptions in antiretroviral therapy can still occur among patients with poor health conditions. Although viral load suppression is the main protective factor against mortality, enhanced patient-centered approaches may be needed to monitor and optimize care and to prevent defaulting in treatment.

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Incidence and Types of Adverse Drug Reactions to First-Line Antiretroviral Therapy in Nigeria

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Background: Individuals react differently to medicines, and adverse drug reactions (ADR) can affect an individual's adherence to treatment. The study aims to determine the rate, severity, types and timing of ADR among people on fixed-dose Tenofovir/Lamivudine/Dolutegravir antiretroviral regimen in Nigeria.

Material and Methods: This retrospective study involved people receiving a fixed dose of Tenofovir/Lamivudine/Dolutegravir (300mg/300mg/50mg) in 53 health facilities in Cross River State, Nigeria. Drug prescriptions were done in line with the national treatment guidelines. Clients were routinely monitored and screened for

ADR at every clinic encounter, and all identified ADRs were reported using a national reporting form. Data on the number, type, severity categories, dates of onset of ADR, and drug commencement were abstracted between June 2020 and August 2022. Outcomes analyzed include ADR rate (proportion of those screened who experienced ADR), ADR severity (graded based on severity into mild, moderate, severe, and life-threatening), type (classified based on organ or system affected), and time to ADR (time between drug commencement and the onset of ADR, in days). Data were analyzed and summarized using frequencies on SPSS version 26.

Results: A total of 32,304 clients (M:10300, F:22004) were screened for ADR with a median age of 39 years [IQR 31-47] and 97.0% (n=31322) were adults. 233 clients (M:58, F:175) reported experiencing ADR (0.7% ADR rate), and 95.3% of them were adults (>15years). ADR rate was higher in females (0.8%, 175/22004) than males (0.3%, 58/10300). The median time to ADR was 7 days [IQR 2-92 days]. There were 79 different types of ADRs (n=361) reported with 55.4% affecting the Central and Peripheral Nervous System, 14.1% with dermatologic symptoms, 12.7% with gastroenteric symptoms, 8.9% with systemic symptoms (e.g. body weakness, body pains, oedema, etc) and 8.9% with other organ affectations. 60.9% of ADRs were mild, 32.6% moderate, 6% severe and 0.4% life-threatening.

Conclusion: ADRs are rare among clients receiving fixed-dose Tenofovir/Lamivudine/Dolutegravir and are usually life-threatening when it occurs. Active screening and close monitoring, especially within 92 days of commencing treatment are important in ensuring optimal treatment outcomes for clients.

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Incidence and Factors Associated With Viral Suppression or Rebound in Individuals Receiving Combination Antiretroviral Therapy in Marracuene District, Maputo, Mozambique

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Background: In Marracuene district, Maputo, Mozambique, limited information is available on the incidence and factors that contribute to viral rebound among individuals receiving antiretroviral therapy (ART). Furthermore, the duration of viral suppression among these individuals is unknown. Understanding the incidence rates and factors associated with viral rebound, as well as the durability of viral suppression, can improve the long-term management of individuals living with HIV and contribute to exploring approaches for long-term HIV remission.

Material and Methods: A retrospective study was conducted involving 735 individuals living with HIV receiving ART and enrolled in a comprehensive care center (CCC) at Marracuene Level 2 hospital. The laboratory data of the individuals including ART adherence, ART type, duration on ART, and sociodemographic data were extracted from the laboratory information system. They were grouped into those who experienced viral suppression (viral loads lower than the detection limit) and those who experienced one or more detectable viral load measurements >40 copies/ml following the initial low detection limit. Durable viral suppression was defined as all viral load values being below the detection limit over a 2-year period (2018–2020). Univariate and multivariate regression analyses were performed to assess the rates of viral rebound and to investigate the factors associated with it, using only ART adherence, ART type, duration on ART, and sociodemographic data.

Results: Out of 735 individuals living with HIV, 560 (76%) achieved HIV viral suppression. The overall

viral rebound rate was 24%. Good ART adherence ($p = 0.0001$), age ($p = 0.0062$), and World Health Organization stage I ($p = 0.0002$) were associated with viral suppression, while poor ART adherence ($p < 0.0001$), WHO stage II ($p = 0.0023$), and duration on ART of 36 months ($p = 0.0340$) were associated with viral rebound.

Conclusion: Although the rate of viral suppression in individuals receiving ART at the CCC did not reach the WHO's target, the study provides evidence of undetectable viral load levels for more than 2 years, indicating that the United Nations' 2030 objective of controlling the acquisition risk of HIV could be achieved.

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Impact of Low-Level Viremia on Viral Reservoir Size Among Patients Taking Antiretroviral Therapy in Ghana

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Background: Antiretroviral therapy is able to achieve viral suppression and drastically improve clinical outcomes in the majority of HIV patients. However, the presence of latently infected cells, called the HIV reservoir, is the main obstacle to HIV eradication. Based on WHO recommendation, viral load (VL) of <1000 copies/ml is accepted as suppression in resource-limited settings (RLS) compared to 50 copies/ml in developed countries. This low-level viremia may favour continuous viral replication, drug resistance, and an increase in reservoir size. However, these patients are regarded as virally suppressed and not given much attention to further reduce their viral loads. We,

therefore, investigated the impact of persistent low-level viremia (PLV) on the viral reservoir size by estimating the cell-associated DNA in patients with VL 50-999 copies/ml and <50 copies/ml.

Material and Methods: A total of 90 HIV-infected individuals were studied from two categories; 45 patients with PLV (VL = 50-999 copies/ml) and 45 patients fully suppressed (VL <50 copies/ml). HIV DNA was extracted from peripheral blood mononuclear cells and quantitative PCR was done to estimate and compare the reservoir size between the two groups.

Results: The median reservoir size was 682.65 viral copies (IQR: 451.04-1684.04) for the PLV group and 228.41 viral copies (IQR: 149.42-475.61) for the fully suppressed group. The median reservoir size was three times larger in the group with PLV compared to the fully suppressed. This difference was statistically significant [p-value<0.001].

Conclusion: Our finding calls for a redefinition of viral suppression in RLS and targeted efforts at reducing viral load and in effect the reservoir size in these patients to enhance HIV cure.

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Health Professionals' Level of Knowledge Regarding Integrating Mental Health Services With HIV Services at Primary Health Care in Maseru Lesotho

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Background: In most countries, the prevalence of MHPs among PLWH is over 78%. Given that anxiety, depression, and HIV are frequently co-occurring disorders, integrated intervention measures may be required. The elimination of treatment gaps and ensuring that patients receive the care they need are the main goals of this level of care improvement. The most frequent psychiatric side effect of HIV is a mood illness,

mainly depression. Anxiety and depression are two of the MHPs that are most frequently identified in PLWH. These can make treating HIV more difficult and confront the practitioner with many diagnostic and therapeutic hurdles. Concomitant psychiatric problems can significantly lower adherence to HAART. Undiagnosed and untreated MHPs may result in actions that increase the risk of contracting and spreading HIV. The aim of the study is to describe Health professionals' level of knowledge regarding integration of MHS into HIV services at primary health care.

Material and Methods: This study employed mixed methods, and makes use of quantitative (self-administered questionnaire) and qualitative (in-depth interviews). The quantitative data was analysed using an appropriate software package, in this case SPSS version 26. In quantitative design, descriptive statistics was used to summarize the data. To account for the possible factors, comparisons were made using Chi-square statistical tests for categorical data and t-test/Wilcoxon rank-sum test for numeric data. A p-value < 0.05 was considered statistically significant. In qualitative design, the transcripts were analysed by the researcher and reviewed by the study leader to ensure trustworthiness. Data was analysed using the thematic framework analysis method.

Results: 69.7%of respondents reported that they don't have knowledge to manage MHPs in PLWH. The qualitative findings also showed that majority of Health professionals do not have enough knowledge to identify sign and symptoms of MHPs in PLWH, no adequate knowledge to diagnose and manage all people presenting with MHPs and also living with HIV.

Conclusion: Health professionals are not providing mental health services in people presenting with MHPs and also living with HIV mainly because of lack of knowledge to identify sign and symptoms, diagnose and manage people presenting with MHPs in people living with HIV.

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Community HIV/AIDS Service Delivery Experiences Amidst Donor Transition Processes and Their Potential Influence on the Realisation of the Country's 95-95-95 Targets. Experiences From a Subnational Level in Uganda

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Background: With biomedical advances in the management of HIV/AIDS, it is increasingly becoming a chronic condition with PLWHA living healthier lives beyond the current nation's life expectancy. This has service delivery implications especially on delivery of community HIV/AIDS services where service users will require less of clinical and more of social behavioural interventions within the communities where they live for continued engagement in care. Amidst reduced donor support for HIV/AIDS services, it remains unclear how community HIV/AIDS services are prepared to take on this role. We aimed to examine the experiences of delivery of community HIV/AIDS services amidst donor transition of the same to government support.

Material and Methods: An exploratory qualitative study was conducted between November 2021 and January 2022 in three districts representing three regions of the country that received donor support. Interviews were conducted among a purposively selected sample of 25 health managers and providers. Data was collected using audio recorders and coded using Atlas.ti. Analysis was conducted following a thematic content analysis technique.

Results: Previously implemented community HIV/AIDS services during donor support were affected differently. Whereas some were recalled to the primary health facilities, others received mild interruptions. Counselling services were continued post donor transition amidst scarce resources, the mentor mothers' program was terminated in most of the regions where it was implemented. Intensity of implementation of the contact tracing activities were reduced with sexual partners identified through the index client given referrals to access facility level services other than following them within the communities where they lived. Psycho-social support although primarily delivered at the health facility were terminated due to the operational costs required to keep it running for which the health facility management could not readily identify alternative funding sources post transition.

Conclusion: Overall sustainability of community HIV services was greatly affected due to challenges aligning it with routine standard of HIV/AIDS services delivered at the health facilities. This calls for identification of potential sustainability strategies post transition such as designing of a lighter community HIV package that suits within the available PHC funding extended to health facilities.

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Receptiveness of Males and Females Towards HIV Self Testing Messaging Through the Lens of Community Mobilizers in Abuja, Nigeria

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Background: HIV self-testing (HIVST) offers consumers' confidentiality and convenience to promote self-care. A community mobilizer model was introduced to improve awareness, demand, and uptake of HIVST in the private sector through messaging. This study was aimed at assessing the

receptiveness of males and females to HIVST messaging in Abuja through community mobilizers.

Material and Methods: The strengthening HIV self-testing in the private sector (SHIPS) project conducted a pilot implementation between April-December 2022 through the deployment of 10 community mobilizers in Amac and Bwari area councils of Federal Capital Territory, Abuja, Nigeria. Eligible community mobilizers include resident of the community, ability to read and write, good interpersonal and persuasive communication skill. The community mobilizers were trained on how to use an interpersonal communication guide as talking point to provide general information on HIV, where to purchase HIVST, how to use HIVST and next step guidance after testing. The community mobilizers deployed one-one and group interactions as mode of delivery.

Results: Community mobilizers reached a total of 20,425 people, majority of whom were men (68%). The mobilizers reported that males were more receptive to HIVST messaging in both group settings and one-on-one interactions. During interactions, males engaged the mobilizers, made more inquiries about HIVST, and expressed a strong desire to purchase an HIVST kit. In interactions with females, community mobilizers reported that females were less receptive to HIV messaging and became defensive because they believe listening to HIV messaging implies that they are already sexually active and would label them as being promiscuous. Also, they appear less concerned and express low willingness to purchase an HIVST kit. However, 80% of pharmacies reported that more females purchased HIVST than males.

Conclusion: Females' receptiveness to HIVST messaging is affected by their fear of being labelled promiscuous by peers or revealing they are already sexually active. However, this does not deter their positive health seeking behaviour of purchasing HIVST from pharmacies to learn their status because of the confidentiality and privacy HIVST provides. To improve receptiveness, community mobilizers are encouraged to emphasize on other means of contracting HIV aside sexual contact.

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Identifying Barriers and Facilitators to Treatment Retention for Young Persons Living With HIV Using a Nominal Group Technique

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Background: Young persons living with HIV (YLHIV) struggle to remain engaged in HIV care and adhere to antiretroviral treatment (ART) due to a myriad of challenges. With support from the US President's Emergency Plan for AIDS Relief (PEPFAR) through USAID, the Accelerating Control of HIV Epidemic project in Nigeria assessed the barriers and facilitators to treatment retention among YLHIV to improve the quality of services to this group. This study summarizes the findings from the assessment.

Material and Methods: This mixed-method study using a Nominal Group Technique (NGT) was conducted among YLHIV aged 15-24 years receiving antiretroviral therapy who volunteer as peer supports in Akwa Ibom State, Nigeria. The participants were divided into four groups of 5-persons to discuss potential barriers and facilitators to retention on treatment among YLHIV. Each round consisted of discussion and individual ranking of ideas, clarification of the ranked responses between team members; followed by voting on the responses to prioritize ideas. Sessions were conducted in-person with two facilitators supporting group interactions. Qualitative (recordings of discussions) and quantitative (numerical rankings of ideas) data derived were summarized using descriptive statistics. Recommendations were adapted to the Expert Recommendations for Implementing Change (ERIC) taxonomy.

Results: 20 persons participated in the discussion, 75% were females (n=15) and 65% were aged 20-24 years (n=13). A total of seven barriers to care were highlighted: lack of support from peers and family arising from non-disclosure (8), perceived healing by religious leaders (6), lack of financial support (4), self-stigma worsened by unfriendly clinic environments (3), perceived ineffectiveness of ART (2), frequent relocation (1), and ignorance (1). The recommendations for the top three barriers include support for proper disclosure to family and friends; engagement and integration of peer supporters into service delivery; sensitization of religious leaders and their involvement in adherence messaging; formation of peer-led support groups to provide psychosocial support for YLHIV; and access to financial aid.

Conclusion: Adjusting treatment programs to fit the peculiar needs of YLHIV is a critical step in ensuring retention in care for this age group. Programs should continually engage YLHIV in the design, and implementation of strategies.

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Piloting Sustainable Community Led Demand Models for VMMC in Zimbabwe

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Background: Zimbabwe's INTEGRATE program seeks to strengthen Ministry of Health and Child Care managerial, financial, and operational capacity, and to transition from vertical partner-led VMMC programming to sustainable, horizontal and integrated biomedical prevention. VMMC demand creation during catch-phase has been vertical, partner-led, limiting community ownership. We piloted a Community-Led Demand (CLD) model to increase community ownership for sustainable demand.

Material and Methods: CLD phased in over 45 wards in nine districts at varying stages of saturation over 10 months, deploying interventions across the socioecological framework. CLD coexisted with vertical demand in separate wards within a district to cushion against a district drop in performance. Capacitated Community Based Organisations coordinated VMMC demand, rock leadership training for community leaders, village to village campaigns, male mentorship clubs, and linkages between community structures, schools and clinics. Income generating activities (IGA) were set up with vertical IPC agents to link incentives to a more sustainable, collective community business model. IGAs ranged from poultry, goat rearing, piggery with profit sharing guided by social contract.

Results: CLD struggled to drive outputs where neighbouring wards had vertical demand creation and IPC agents in IGAs migrated informally to those locations. To eliminate competition for clients, the model concentrated in October 2022 to 56 wards in 4 districts, with district-wide mandates in two districts, resulting in a nine-fold increase in model performance. Community demand capacity and ownership remains low due to overdependence on partner-led demand. Community learning curves for specialized demand creation are long so the model requires time to yield sufficient demand to sustain coverage. IGAs received one-time capitalization and show potential with modest routine recapitalization through demand incentives.

Conclusion: CLD requires an early start and a phased approach with ongoing partner support to strengthen community demand structures while maintaining coverage. The program will test linking IGAs to formerly vertical demand incentives and to a pilot of community results-based financing to moderate IPC agent losses in the transition to a collective financing model. A community RBF pilot will share incentives with facilities to increase clinic ownership of demand.

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What Really Is Meaningful Engagement of Young SRHR Advocates? The Case of Empowered for Change (E4C) Project Advocates in Kenya and Uganda

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Background: In both Kenya and Uganda, adolescents and young people (AYP) are more affected by HIV, GBV and SRH challenges associated with access and uptake of services in public health facilities. Mentorship and engagement of young advocates has been based on volunteerism and evidence generation minimal. LVCT Health (Kenya), CYSRA and PHAU (Uganda) and Frontline AIDS, implemented Empowered for Change (E4C) project that aimed at increasing access to HIV, SRH and GBV services for AYP through evidence-based advocacy conducted by remunerated youth advocates.

Material and Methods: The E4C project selected 29 AYP SRH advocates (15 Kenya, 14 Uganda). The selection was based on age (18-26years), availability, completion of high school education, evidence of advocacy work, public speaking and writing skills. The advocates were male and female selected from Nairobi, Homabay and Mombasa counties in Kenya and Busia and Luwero districts in Uganda. A baseline and endline assessment on SRH, HIV and GBV knowledge and advocacy skills was conducted. The baseline results were used to inform weekly mentorship conducted by the project team. The 29 SRH advocates were contracted, paid monthly allowance as per country rates and linked to advocacy platforms. Each advocate developed a personal growth plan that was monitored. An ethically approved qualitative

study was undertaken with advocates as co-researchers.

Results: Retention of advocates was 97%. The HIV, SRH and GBV knowledge levels increased from 49% to 80% in Kenya and from 60% to 96% in Uganda. Advocates championed advocacy at county, national and regional level. Kenya advocates presented three abstracts at the RHNK 2022 Conference in Kenya. The advocates implemented evidence-based advocacy from qualitative study findings on barriers and facilitators of access and uptake on services by young people. Personal growth of E4C advocates ranged from payment of college fee arrears and investment in businesses for sustainability and seven advocates being formally employed post project. The advocates are working with think-tanks to inform AYP interventions at technical working group level.

Conclusion: Meaningful engagement of young people needs to be structured and evidence based. The remuneration of advocates has proved to increase their retention, improve their career growth and economic empowerment.

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Efficacy of a Faith-Based Model for HIV-Related Stigma Mitigation

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Background: Stigma against persons living with HIV (PLHIV) has been reinforced by some erroneous religious narratives. However, there are reported success stories on how faith-based initiatives have been able to mitigate the stigma against PLHIV. The aim of this study was to assess the impact of a faith-based model for mitigating HIV-related stigma in Nigeria. The Project: The project “Strengthening Faith-based HIV Response” was a two-year project implemented in Benue and Kaduna States, Nigeria between 2017 and 2019. The intervention leveraged the moral authority of faith leaders to shape opinions, address stigmatizing narratives, and improved HIV literacy in faith congregations. A simplified version of the National HIV anti-discrimination Act was developed using verses from

the Bible and Quran and a sermon guide was produced also. Using both tools, a three-day capacity building was done for selected religious leaders on HIV-related stigma mitigation through sermons, HIV literacy, and messaging. The faith leaders were supported to hold dialogues with different groups in their congregations. They also facilitated HIV testing and set up confidential support groups for PLHIV in their congregations.

Material and Methods: The study compared data from a representative survey of 510 congregants in 20 intervention congregations and 500 in 20 control congregations in the same locations, and the baseline data. The outcomes of interest were: willingness to accept HIV results if tested positive, willingness to receive communion with PLHIV, knowledge of HIV prevention at baseline, project close, and follow-up.

Results: There were a total of 1010 respondents (52.6% female) in the post-follow-up survey and 430 (female 51,2%) in the baseline survey. There was a 26.7% increase in the likelihood to accept HIV-positive results at the stage of follow-up and an 18.3% increase in the control group at follow-up. There was a significant increase in willingness to receive communion with PLHIV in the intervention group (OR 0.6445, 95% CI: 0.5245to0.7920, P=0.0001).

Conclusion: The intervention was able to achieve a positive attitudinal shift and a significant impact in improving HIV literacy and in reducing community-level stigma. Replication of the initiative in other communities and for public health response is recommended.

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Creating a Community-Led Crisis Response to Support People Who Use Drugs and Are in Legal Custody in Southern Highland, Tanzania

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Background: People Who Use Drugs (PWUD), who commit legal offences and are detained, experience structural barriers that prevent them from accessing health and harm reduction services. Many PWUD lack legal support while in police custody, in court, or detained in prison. Of the estimated 500-800 PWUD living in the Mbeya and Songwe regions in Tanzania, 110 PWUD enrolled in opioid agonist therapy (OAT) have been experiencing barriers in accessing legal justice and support by 2022.

Material and Methods: In 2021, HJF Medical Research International conducted paralegal, and crisis response training for peer educators, empowering them to respond to the PWUD's unique legal, social and health challenges. About 20 peer educators were trained to support PWUDs and unsure their access to health services while waiting for their charges, bail, judgements from the police, prisons, and courts. Peereducators even escorted PWUD to the OAT facilities to get their medication and return to detention facilities.

Results: Between October 2021 and September 2022, 110 PWUD were in prison or police stations while waiting for their cases to be heard, 98% were men and 60% were at police stations. Through the established crisis response team, 100 PWUD received assistance, which included legal support and daily access to methadone through an escort system with peer educators and police or prison officers. Legal counsel and skilled peer educators responded to the crisis situations and followed up at police stations, prisons, and/or courts.

Conclusion: The intervention enhanced retention in harm reduction services for detained clients, while reducing the number of clients with treatment interruptions due to legal issues. Continuity on OAT potentially prevents drug relapse and is crucial to a comprehensive harm reduction strategy. In

addition, advocacy for structural change such as decriminalization of drug use through sensitization meetings to law enforcement officers to enhance human right plays significant role.

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Monitoring Service Delivery and Incorporating Client Feedback Into Quality Improvement Action Planning

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Background: Mozambique's national HIV Quality Improvement (QI) Program, stewarded by the MoH, has been in operation since 2016 and expanded so that at present 87% of the country's 1.9 million PLHIV on ART are accessing services at one of the 728 health facilities implementing QI strategy. Engagement of recipients of care as key stakeholders in quality of care is an integral element of Mozambique's existing national QI strategy for HIV. The National QI strategy recognize that recipient of care engagement represents an opportunity to know and successfully address the client's needs; however, the concept of client engagement was not being brought fully into fruition. Analysis of HIV-related programs identified the lack of community engagement as an area for improvement, along with critical gaps in HIV-related care.

Material and Methods: In collaboration with the clinical and community partners, the Mozambique's Ministry of Health designed and implemented a first phase of the client engagement approach at 15 health facilities (HF) from 5 provinces. A standardized tool was used to guide all 15-focus group discussion, with a total consensual participation of 219 clients. The clients were selected in order to have the participation of all population subgroups: key population 13%, teenagers 23%, pregnant women 10%, breastfeeding 21% and adults 33%. To ensures greater comfort for the focus group participants, the participation of health workers was excluded.

Results: The provider's communication was a root cause mentioned by the clients as a challenge for a clear understanding of the correct taking of medications, side effect and the correct clinical and laboratory follow-up. 36.4% of the clients were not aware about the medication side effects. 16.7% were not aware about the tuberculosis prophylaxis duration and 20% were not aware about the viral load test.

Conclusion: When interacting with patients, providers must use a more understanding language, avoiding the use of technical terms unfamiliar to clients and the QI actions plans have to consider the quality of communication as a key to improve the delivered service.

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'Nothing for Us Without Us' Engaging Communities in Pandemic Responses

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Background: Since the COVID-19 pandemic began, the African Alliance has undertaken a number of community engagement processes to ensure that the response effectively and meaningfully engages communities and their leadership. This has seen a series of COVID-19 conversations on key topics to build confidence in the response and create a platform for communities to engage with the science, as well as a series of accountability reviews to engage civil society leadership on perceptions of COVID-19; undertake a research accountability review of the TASK clinical trial investigating the Bacille Calmette-Guérin (BCG) vaccination in reducing the COVID-19 infection rate and/or disease severity in healthcare workers ; and assess the communication and community engagement strategies of the mRNA Hub model on the continent.

Material and Methods: A learning synthesis of the findings of each of these accountability processes has been undertaken, mapping key findings and seeking trends in key issues around engaging communities (or the lack of engagement). Each engagement consisted of a mixed methods

approach of desk research, semi-structured interviews and community consultations, and online surveys.

Results: Consistently, key concerns emerged related to research ethics, where there are clear guidelines regarding how participants should be informed, to what extent and when to ensure no harm, equality, transparency and protection, and respect are upheld throughout clinical research processes; lack of informed consultation – whether for a clinical trial, vaccine R&D (i.e. the mRNA Hub model) or in the provision of information about COVID-19 in general.

Conclusion: Across these processes, significant concerns around stakeholder engagement were reflected, where it should be promoted and maintained, even during a pandemic, just as a high Standard of Care for participants should be promoted and maintained, particularly in the context of an emerging pathogen clinical trial. The importance of engagement with stakeholders in research cannot be disregarded. This ensures research happens ethically and eliminates the impression that communities are exploited for extractive research and researcher's agendas, with no accountability to communities, particularly where the motivation for clinical trial participation or vaccine R&D is to be part of discovering solutions for COVID-19 to mitigate its impact on communities.

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Barriers and Facilitators of Male Engagement in Community Client-Led Antiretroviral Therapy Delivery Groups (CCLADS) for HIV Care and Treatment in Southwestern Uganda: A Qualitative Study

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Background: Male engagement in HIV program is a persistent challenge that results in poor utilisation of HIV care services. Differentiated service delivery models such as community client led antiretroviral delivery groups (CCLADs), provide an opportunity for male engagement in HIV care. In south western Uganda, few men living with HIV (MLWHIV) are involved in CCLADs. We aimed to identify facilitators, barriers and perceptions to CCLADs enrolment by MLWHIV at ART clinics in south western Uganda.

Material and Methods: A qualitative study was conducted among men living with HIV (MLWHIV) who were registered and receiving ART at two ART clinics/ health facilities in south-western Uganda, irrespective of their enrolment status into CCLADs. In depth interviews (IDI) were conducted among recruited HIV positive men, and the key informant interview (KIIs) among the clinic in- charges, women enrolled in CCLADs and counsellors using a semi-structured interview guide. We used thematic analysis to analyse data from the interviews.

Results: We conducted 16 interviews, 7 KIIs and 8 IDI. MLWHIV and key informants shared the facilitators and barriers. Men who were not involved in CCLADs shared barriers to joining the CCLADs. The themes identified included 1. Motivations to join CCLADs 2. Challenges related to CCLADs initiation 3. Perceived facilitators for male participation in CCLADs, 4. Perceived barriers for male participation in CCLADs 5. Proposed strategies for best implementation of CCLADs for better engagement. Overall, men liked the idea of CCLADs but they had preferences of how they should be implemented.

Conclusion: Men's enrolment into CCLADs is still low despite the benefits. Addressing the barriers to men's engagement and adopting proposed strategies may improve men's enrolment in CCLADs and thus improve their access to ART, adherence and quality of life.

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Reducing HIV among Adolescents and Youth (RHAY): A Mentorship Program for Novice Young HIV Researchers in Eastern and Southern Africa

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Background: Adolescents and young people (AYP) feel excluded from the HIV prevention and care response, yet bear the greatest burden. Reducing HIV in Adolescents and Youth (RHAY) provides a forum for capacity building, enhanced networking and continuous mentorship of AYP with innovative ideas on reducing the HIV burden among their peers.

Material and Methods: We sent out calls for abstracts and concept proposals inviting AYP to either participate in a youth conference or propose innovative ideas on how to address HIV among AYP. Submissions had to focus on 3 thematic areas: a) HIV advocacy and community engagement; b) HIV care and treatment; and c) HIV prevention (behavioural, biomedical and structural). Concept proposals were open to AYP under 30 years in ESA, under an initiative dubbed 30-under-30 (30-U-30) where 30 AYP under 30 years were to be competitively selected and awarded seed funds (≤US\$5,000) to pilot their ideas. The call was publicized through social, print and electronic media.

Results: We received 206 abstracts and 85 concept proposals. 52 reviewers (31 HIV research/program experts, 13 youth and 8 international committee members) reviewed, scored and selected top performers; 50 abstracts for the RHAY conference and 30 concepts for the 30-U-30 award. A 4-day hybrid RHAY conference was organized and run solely by young people in June 2022 with 375 in-person and 1,677 virtual attendees, 29 oral and 47 poster presentations made by AYP, 10 keynote speeches given by experts, experiences and best

practices shared by 4 AYP, and 4 training sessions on basic implementation science. The 30 awardees who were mentored to develop full proposals have all obtained IRB approvals. Of the 30; 16 have completed end-line surveys, 4 are conducting end-line surveys and 10 are implementing their interventions. Data analysis and manuscript writing workshop planned in late 2023, with publications in 2024.

Conclusion: The RHAY Conference and 30-U-30 initiative attest that AYP, regardless of education level and research experience, have ideas on how to address the HIV burden among their peers but lack opportunities to try them out. We envisage publishing results of the pilot studies and turning RHAY into a regional movement.

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Incorporation of HIV Testing Into Care and Treatment Differentiated Service Delivery Model; A Case Identification Strategy

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Background: Differentiated ART-care is a client-centered approach that ensures delivery of HIV-care and treatment services to stable clients with drug pick-up challenges in communities, without burdening the health system. Community Drug Distribution Point (CDDP) is one of the models used at AIDS Information center (AIC) Uganda as small clinics (one-stop centers) of convenience for HIV-testing services, PrEP, condoms, lubricants and general screening to key/priority (KP/PP) populations. AIC studied the significance of these service points in HIV case-identification in order to assess the need for integration of HIV-testing services into care and treatment interventions at all its CDDPs.

Material and Methods: A liaison between AIC as a CSO, with community clinics to ensure ART-refills resulted into a demand for HIV-testing, PrEP, condoms and lubricants by KP/PPs

geographically/socially challenged with access to services due to limited Drop-In-centres. We therefore availed HIV self-test (HIVST) kits at these points and data collected in July-September and October-December quarters in 2022 was analysed. Statistical facts on case-identification were discovered and compared to the overall number of positives attained at all HIV-testing entry-points at facility and community in the reporting periods.

Results: In July-September, AIC registered 2 positive cases from CDDPs contributing 4.2% to the positivity rate, however with intensified targeted distribution, there were 12(8female, 4male) HIV-positive cases from CDDPs tested via HIV self-testing in October-December, contributing 22% to the overall total positives. Identified cases included; 3-adolescent girls and young women, 5-sex-workers and 4-clients of sex-workers with 100% linkage to care and treatment: 23040 pieces of male condoms were distributed and 15 clients KP/PPs enrolled on PrEP as prevention services.

Conclusion: In order to improve the quality and efficiency of HIV-testing service delivery as well as support the attainment of the 1st and 2nd 95 UNAIDS target, replication of this practice will be a necessity to scale up HIV positive case identification and linkage as well as a conducive environment for quiet walk-ins to access testing services. Many HIV-positive cases among risky sub-populations are missed out due to their laxity seeking services at health facilities and limited organisation resources. HIVST offers them autonomy to test at their convenience.

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Integrating OVC Services in HIV Service Delivery to Achieve the 95.95.95 for Children and Adolescents

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Background: Despite the interventions delivered by the Ministry of Health, ART initiation for children and adolescents is still below 90% while viral suppression rates still remain at 77%. Among

children <5 years, ART initiation is lower at 60% while retention in care is 80%. Issues included living under secondary care givers, discrimination, and lack committed treatment supporters. The Ministry coordinated with PEPFAR's OVC program to deliver child-focused, family-centered interventions that seek to improve well being and mitigate the impact of HIV/AIDS on children and families. This effort involved working with health facilities to recruit case workers to screen, enroll children on OVC, conducting home visits to address social and economic barriers at household and immediate follow up of all children who miss appointment. The study explored areas of focus in strengthening OVC integration in HIV service delivery in Uganda.

Material and Methods: This was a rapid assessment, both qualitative and quantitative in districts across Uganda for a period of 8 months intended to pick early learnings in strengthening OVC integration in HIV services. Qualitative data collected was through coordination meetings at national and regional level while quantitative data was collected through health facility supervision and assessment reports which were analyzed to inform the results.

Results: Quantitative data collected from 27 districts and 603 health facilities showed that only 41% children are screened for OVC services and 66% enrolled on the OVC programs. Major reasons included poor documentation, weak linkages between the health facility and OVC partner. Regular coordination meetings at national level by line ministries of Health and Gender, PEPFAR, OVC and Clinical partners, joint supervision, performance review and data sharing between OVC and clinical partners strengthened coordination among them. The areas of improvement included: training of social workers and OVC officers in HIV services, strengthen documentation at health facility for services provided to children by OVC partners.

Conclusion: Integration strengthens retention and ART initiation if linkages are improved between OVC partners and health facilities, documentation, regular screening of children at each clinic visit, timeliness of OVC service delivery for non-suppressed clients to improve retention, viral load coverage and viral load suppression.

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Community Case Finding the Pathway to Achieving Unaided 1st 95; A Case Study of Ace 6 Project Implementation in Edo State Nigeria

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Background: Edo state in southern Nigeria has an estimated 42,071 persons living with HIV according to the 2018 Nigeria AIDS Indicator and Impact Survey (NAIIS) with a prevalence of 1.8%. An estimated 28,000 PLHIVs access treatment within the state, giving an unmet need of about 14,071. Achieving epidemic control within the state requires a scale-up of HIV Testing Services (HTS). The Accelerating Epidemic Control of HIV/AIDS cluster 6 which is implemented in the state by Heartland Alliance LTD/GTE via USAID support from the USG PEPFAR implemented community HIV testing services. This study aims to show the effect of community HIV testing services on HIV case identification.

Material and Methods: Between February 2022 and July 2022, 54 testers were deployed across 18 LGAs within Edo state. In addition, HTS continued to be offered across health facilities. To ensure efficiency in testing, community teams deployed risk screening tools, index testing approaches, and hotspot mapping.

Results: 86,803 individuals accessed HTS with 2109 newly identified as HIV positive (2.4% yield). 31047 people were tested in the facilities with 800 people newly identified as HIV Positive (2.6%), while in the community 55,756 accessed HTS, and 1331 new positives were identified (2.4%). Community testing contributed 64% of testing and 63% of positives while facility testing contributed 36% and 37% respectively. All identified positives across both the facilities and communities were linked to ART services (100% linkage).

Conclusion: HIV testing services remain the key entry point into HIV programs and complementing facility HTS services with community HTS services can improve both the volume of testing without compromising the yield as demonstrated by the ACE 6 program.

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Engagement of Peer-Led Community-Based Organizations (CBOs) For Distribution of HIVST Kits Among At-Risk, Unreached and Unengaged Males Aged 20-34

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Background: Knowledge of HIV status is critical to entry and initiation of lifelong ART which ensures quality of care for individuals who are HIV positive. It is also an avenue to reinforce combination prevention messaging In Kenya, 27.5% of men aged 15 to 64 living with HIV do not know their status compared to 17.3% among their female counterparts. HIV Self-testing is aimed at improving access for unreached populations groups with an innovative, convenient, user friendly solution to increase awareness of one's hence improving health outcomes of PLHIV not reached by conventional HIV Testing Services (HTS) through earlier diagnosis and uptake of antiretroviral therapy (ART). In an endeavor to reach UNAIDS 95-95-95 targets, PS Kenya's HIV Self-testing Challenge Fund Project funded by Children's Investment Fund Foundation (CIFF) and Elton John AIDS Foundation, was supporting the Ministry of Health to distribute HIVST kits in Kenya through the Community based organization.

Material and Methods: During implementation, the project in partnership with MoH, identified seven peer led grassroots organizations based in the community to collaborate. Data on HIV case identification was utilized to identify hot-spot areas where unreached men were high. The CBO members were trained on HIV Testing guidelines, basic counseling skills, client targeting and follow-

up and were issued the standard operating procedures developed by the project. They then conducted further mapping of hotspots, undertook demand creation activities and distributed of HIVST kits for free within hotspots. Demonstrations on kit usage was conducted and kits issued to eligible clients. Demand creation was done using various print materials and interpersonal communication. Those opting to test on-site were given private space and confirmatory testing conducted by HIV Testing Services (HTS) counsellors for reactive results.

Results: At the end of project period, a total of 305,263 HIV kits were distributed, an achievement of 125% against project targets. 77% of the kits were distributed to men against a target of 70%.

Conclusion: Community based organizations are key in increasing the uptake of health interventions especially among peers.

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Dynamic Partnership to Redefine Community Engagement in HIV Programming in Nigeria

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Background: Since 2007, Clinton Health Access Initiative (CHAI) has introduced several transformational interventions to improve access to optimal HIV diagnostics, treatment, and technologies. To enhance community engagement in HIV interventions, Unitaid and CHAI partnered with Afrocab Treatment Access Partnership (Afrocab) in 2016 to develop activities centered on improving treatment literacy among people living with HIV (PLHIV) and driving the uptake of optimal HIV products through the Optimal community advisory board (Optimal CAB).

Material and Methods: At the inception of the Optimal project funded by Unitaid, CHAI supported the Optimal CAB to implement community engagement activities across 56 health facilities in 12 states within Nigeria. The key deliverables of the Optimal CAB were (i) to facilitate optimal product adoption, (ii) to improve treatment literacy among PLHIV on optimal products to generate demand, and (iii) obtain feedback from PLHIV on optimal products to inform policy. CHAI provided evidence on optimal products while Optimal CAB members disseminated this information to the community.

Results: The Optimal CAB supported the adoption and uptake of 9 HIV products in Nigeria: Tenofovir-Lamivudine-Dolutegravir, Lopinavir/ritonavir pellets, Pediatric Dolutegravir (pDTG), Darunavir/ritonavir, Liposomal Amphotericin B, Flucytosine, VISITECT, CrAg Lateral Flow Assay, and TB-LAM. Optimal CAB advocacy contributed to the recommendation of DTG as the preferred first-line antiretroviral regimen, and over 1.6 million people are now on DTG-based regimens in Nigeria. On product uptake, the Optimal CAB has produced and disseminated 14 print and 5 audiovisual Information Education and Communication materials on HIV services to 54% (20) of states in Nigeria. Optimal CAB members trained 56 adherence counsellors on AHD and 148 mentor mothers on pDTG, disseminated information that debunked myths resulting in equitable and increased access to DTG among women, supported tracking of HIV services and facilitated drug delivery during the COVID-19 movement restriction. Optimal CAB observed low ADRs and OIs reporting rates, hence built PLHIV capacity to report these for appropriate management.

Conclusion: Community engagement has become a pillar of HIV programming in Nigeria and should be integrated into HIV interventions. More critically, the engagement should be targeted at treatment literacy on optimal HIV services to achieve better treatment outcomes.

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Yogourt Probiotique, Quel Effet sur l'Inflammation et le Stress Oxydatif (Cas des Patients Séropositifs sous Traitement Antirétroviral)

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Contexte : L'infection par le virus de l'immunodéficience humaine (VIH) et le traitement antirétroviral (TARV) ont été associés à un stress oxydatif élevé chez les patients VIH. La disparité des niveaux d'antioxydants ainsi qu'une inflammation secondaire due à une translocation bactérienne intestinale chez les personnes vivant avec le VIH cause principale d'une morbidité et de mortalité liée à l'infection au VIH. Le but de cette étude était d'évaluer la capacité du yogourt probiotique à briser le cercle vicieux inflammation -stress oxydatif -inflammation.

Matériel et méthodes : Par une randomisation simple 1:1, les patients sous traitement Antirétroviral (TARV) à base d'Éfavirens(EFV) et Lopinavir (LPV) ont été soumis, en plus à une supplémentation en yaourt probiotique puis suivi pendant 48 semaines et évalués dès l'inclusion, à mi et en fin parcours par le dosage des marqueurs : immunologique (CD4), virologique (Charge virale), inflammatoire (Hs CRP, CD14 et CD163 solubles) et du stress oxydatif [Superoxide dismutase (SOD, Glutathion peroxydase (GPx) et le Zinc] ainsi que les niveaux de 7,8-dihydro-8-oxoguanine (8-oxoG) en tant que marqueur des dommages oxydatifs à l'ADN et suivi son taux 48 semaines après supplémentation du yaourt.

Résultats : Les résultats confirment que l'infection par le VIH induit une inflammation par une augmentation très significative sCD14, sCD163 et la HsCRP ; et un effondrement du système protecteur antioxydant caractérisé par la diminution du taux de SOD, GPx, et du Zinc. Aux semaines 24 et 48, une inversion significative des marqueurs de l'inflammation et du stress oxydatif, est observée sous le bras TARV + Yaourt probiotique. Seule la valeur de Zinc est restée à un taux infranormal.

Tous les patients du même bras ont eu leur charge virale non détectée en depuis la semaine 24. Le niveau de de 8-oxoG sont accrus chez les patients infectés par le VIH. Une thérapie antirétrovirale hautement active a induit une normalisation du niveau de 8-oxoG chez certains patients.

Conclusion : La supplémentation en yaourt probiotique a réduit significativement l'inflammation et le niveau de 8-oxoG et a permis un accroissement de la capacité à réparer les dommages oxydatifs à l'ADN chez les patients infectés par le VIH.

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Frequência da Depressão, Ansiedade e Stress em Adolescentes Gestantes Portadoras de HIV/SIDA Atendidas nos Cuidados Primários na Região Centro de Moçambique

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Introdução: A fase de gravidez é considerada uma das fases importantes da sexualidade da mulher devendo fazer parte da sua vida como um acontecimento feliz e não como uma má recordação, porém torna-se preocupante quando a gravidez ocorre na fase da adolescência e quando a adolescente é portadora de HIV/SIDA. Objectivo: Determinar a frequência da Depressão, ansiedade e stress em adolescentes gestantes portadoras de HIV/SIDA atendidas nos cuidados primários na Região Centro de Moçambique.

Metodologia: foi realizado um estudo descritivo, transversal com uma abordagem quantitativa, com uma amostra de 92 adolescentes grávidas portadoras de HIV/SIDA atendidas nas consultas de SAAJ no segundo semestre de 2021 no centro de Saúde Urbano de Macurungo, cidade da Beira. Para a recolha dos dados foram utilizados o BDI, BAI e ILSS. A análise e interpretação foi feita através do

pacote estatístico EpiInfoTM versão 7 (CDC, Atlanta).

Resultados: os resultados indicam para 25% (n=23/92) para a prevalência da Depressão; 43,5% (n=40/92) para a prevalência de Ansiedade e 30,4% (n=28/92) para a prevalência do Stress. Em relação ao suporte social onde mostra que 19 (28) com stress tinham suporte social, 36 (40) com ansiedade tinham suporte social e das 23 com sintomas depressivos 21 (23) com depressão tinham suporte social.

Conclusão: Esses resultados desta pesquisa nos chamam atenção quanto a necessidade de haver maior atenção à saúde mental das adolescentes gestantes portadoras de HIV/SIDA, tentando-se identificar factores relacionados que possam ser efectivamente trabalhados, permitindo-se, assim, que estas possam viver essa fase tão importante da vida em sua plenitude.

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Perfil Clínico-Epidemiológico da Tuberculose em Pacientes Portadores de HIV no Distrito de Maringué na Província de Sofala: Análise de 5 Anos

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Introdução: A Tuberculose ainda é considerada um problema de grande impacto na saúde pública em Moçambique, sendo atualmente apontada como a principal doença infectocontagiosa que mais mata no mundo. A mesma quando associada ao HIV/SIDA, causa grande impacto na mortalidade, em razão da Tuberculose ser responsável por cerca de 50% de óbitos em pacientes imunocomprometidos. O objectivo deste estudo foi de conhecer o perfil Clínico-epidemiológico da Tuberculose em pacientes portadores de HIV no distrito de Maringué na província de Sofala nos últimos de 5 anos.

Metodologia: Tratou-se de um estudo descritivo, epidemiológico, realizado por meio de levantamento de dados. Foram coletados dados em Janeiro de 2023 referente aos anos de 2018 a 2022, utilizando as variáveis sexo, formas de TB, o desfecho e tipo de diagnóstico. Os dados foram retirados do SISMA (Sistema de Informação de Saúde, Monitoria e Avaliação), e nos relatórios anuais, em seguida foi realizada a tabulação no Excel e posteriormente os registos foram transportados para o SPSS para a análise e interpretação.

Resultados: Registrou-se 144 casos da coinfeccção da TB/HIV, que corresponde a 9,07% dos casos de pacientes diagnosticados com TB no distrito de Maringué. A partir da análise acerca dos casos reportados, em 2021 identificou-se a maior proporção de casos (54,37%), seguido de 2020 (16,18%). A TB pulmonar foi a mais prevalente (96,53%) quando comparada a TB extrapulmonar (3,47%), sendo a percentagem de cura elevada (96,53%). Dos casos notificados a maior (56,25%) parte foi com base no diagnóstico clínico.

Conclusão: Os dados obtidos a partir da análise indicam que no período vigente 9,07% dos pacientes apresentam coinfeccção da TB/HIV, o que evidencia a relevância clínico-epidemiológica como uma comorbidade de grande impacto na saúde dos pacientes.

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Pneumopathie à SARS-CoV-2 chez le Sujet Vivant avec le VIH/SIDA : Aspects Épidémiologiques, Cliniques Paracliniques et Évolutifs au SMIT du CHU de Treichville, à Abidjan (Côte-d'Ivoire)

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Contexte : Tout au long de la pandémie de COVID-19, les principaux facteurs de risques associés à la progression vers des formes graves ou le décès sont l'âge avancé, le diabète sucré, l'obésité ... Les sujets immunodéprimés au VIH pourraient avoir un risque plus élevé de présenter des formes sévères de cette maladie. Objectif : Etudier les aspects épidémiologiques, cliniques et évolutifs de la COVID-19 chez les sujets vivants avec le VIH/SIDA

Matériel et méthodes : Il s'agit d'une étude rétrospective à visée descriptive et analytique durant la période de 01 mars 2020 au 30 Octobre 2022. Ont été inclus, les PVVIH admis pour pneumopathie confirmée à SARS-cov2. La saisie et l'analyse des données ont été faites par les logiciels Word et EPI-Info.

Résultats : Au total nous avons 43 PVVIH admis pour COVID-19. Les antécédents pathologiques majeurs étaient HTA (31,03%), diabète (14,29%), aucun n'était vacciné contre la COVID-19. Les signes fonctionnels retrouvés étaient la fièvre (65,11%), la toux (60,46%), la dyspnée (37,21%). L'examen physique notait une polypnée chez (81,39%), une hypoxie chez 39,53 %, un syndrome de condensation chez 51,16 % des patients, une conscience altérée chez 21 % des patients. Les images d'opacités alvéolo-interstitielle étaient retrouvées chez 28 % des patients. Le taux moyen de leucocyte était de 6774,29 éléments /l, la valeur moyenne de CRP était de 83,85 mg/l. La tuberculose et le paludisme étaient les infections les plus associées avec respectivement 20,9 % et 18,6 %. Le taux de létalité était de 13,95 %.

Conclusion : L'expansion rapide et progressive de la pandémie à COVID-19 à l'échelle mondiale s'est déroulée au milieu de celle du VIH qui ne cesse de croître surtout de dans nos pays. Les effets de l'interactions de ces deux infections semblent être réels.

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Aspects Epidémiologiques, Cliniques et Thérapeutiques de l'Infection à SARS-CoV-2 chez le Personnel de Santé : Cas de Deux CHU de N'Djamena

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Introduction : La COVID-19 est une des pandémies pour laquelle le personnel de santé paie une lourde tribu dans le monde. L'objectif de cette étude était d'évaluer l'ampleur de l'infection à SARS-CoV-2 chez le personnel de santé au Tchad.

Matériel et méthodes : Il s'agissait d'une étude prospective, transversale, descriptive sur 2 ans du 01 mars 2020 au 01 Mars 2022. Les deux grands CHU (la Référence Nationale et la Renaissance) ont servi de cadre pour notre étude. Les données recueillies ont été saisies sur le logiciel Excel et analysées par le logiciel SPSS.

Résultat : Durant la période d'étude, sur les 891 agents que comptent les 2 CHU, 148 étaient infectés par la Covid-19, soit une prévalence de 16,6%. Sur les 148 agents infectés, 108 étaient inclus dans notre étude dont 75 du CHU-RN (69,5%). L'âge moyen était de 42,6 ± 9,1 ans et la tranche d'âge de 31 à 40 était la plus représentée (38,9%). On note une prédominance masculine (66,7%, n=76). Les infirmiers étaient les plus infectés (37%, n=40) suivis de médecins (26%, n=28). Les agents étaient mariés dans (88%, n=95). Les patients étaient symptomatiques dans 75,9% et le signe clinique le plus fréquent était les céphalées (50%, n=54), suivies de la toux (40,7%, n=44) et de la fièvre (36%, n=39). Le syndrome post-covid-19 était retrouvé chez 12 agents (11,11%). L'association Hydroxy chloroquine/chloroquine + Azithromycine était le schéma thérapeutique le plus prescrit (97,2%, n=104). Aucun facteur associé n'a été retrouvé après analyse multi variée.

Conclusion : la prévalence de la COVID-19 reste élevée chez le personnel de santé. La symptomatologie clinique reste similaire à celle de

la population générale. Aucun facteur associé à l'infection à SARS-CoV 2 n'a été retrouvé chez les agents de santé.

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Leucémies Diagnostiquées au Décours de la Maladie à Coronavirus : A Propos de Quatre Cas Colligés en 2021 à Abidjan, Côte D'Ivoire

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Contexte : La maladie à Coronavirus, réserve de nombreuses inconnues. Des complications métaboliques, infectieuses ont été rapportées sur les comorbidités incidentes mais peu de cas d'hémopathies malignes ont été décrits. Nous rapportons quatre cas de leucémies incidentes chez des patients présentant une maladie à Coronavirus. **Objectif :** L'objectif de cette étude était de rapporter quatre cas de leucémies diagnostiquées au décours d'une infection à SARS-Cov2 en 2021 à Abidjan.

Matériel et méthodes : Il s'est agi du rapport de cas de leucémies au décours de l'infection à SARS-Cov2 des patients qui ont été hospitalisés au Service des Maladies Infectieuses et Tropicales (SMIT) chez qui le diagnostic de leucémies incidentes a été posé.

Résultats : Il s'est agi de quatre patients dont deux hommes, âgés respectivement de 76 ans, 50 ans et deux femmes âgées respectivement de 41 ans et 33 ans hospitalisés au SMIT, à Abidjan pour Maladie à Coronavirus, sans antécédents connus de maladies hématologiques. A l'admission, la symptomatologie était dominée par la fièvre et la dyspnée. Une forte

hyperleucocytose a été constatée chez nos patients faisant suspecter une leucémie ayant nécessité des explorations. Un frottis sanguin et/ou un myélogramme et/ou l'immunophénotypage ont été réalisés confirmant ainsi pour chaque patient soit une Leucémie Lymphoïde Aigue, une Leucémie Myéloïde Aigue, et une Leucémie Lymphoïde Chronique et une Leucémie à cellules T. Le traitement de la COVID-19 a été instauré selon les directives nationales et celui de la leucémie par une chimiothérapie anticancéreuse. L'évolution a été fatale chez 02 patients.

Conclusion : La concomitance de la COVID-19 et des leucémies nouvellement diagnostiquées présente un défi extraordinaire de traiter deux maladies potentiellement mortelles en même temps. Ces cas suggèrent l'idée que dans tous les cas d'infection persistante et/ou compliquée, même pendant les pandémies, la présence d'une malignité hématologique sous-jacente doit toujours faire l'objet d'une investigation.

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Impact of COVID-19 on the Trends of Adherence of Adolescents in HIV Clinics. A Systematic Review of Current Evidence

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Background: Consequences of covid-19 in people living with HIV (PLHIV) has been assessed but its impact on adolescents living with HIV (ALHIV) remains unclear. Furthermore, assessment of adherence in the adolescent population is inconsistent. The purpose of this review was to systematically identify and assess the existing literature on implications of the pandemic on adherence in adolescents.

Material and Methods: A systematic literature search was done in the major databases identifying studies on adherence in ALHIV during the pandemic. The Cochrane Handbook for systematic

reviews and center for reviews and dissemination guidelines assessed the identified studies for eligibility. Data were extracted and categorized into various sections. After removing duplicates by mendeley software and performing full text reading of the articles, seven were included in the review. The protocol was registered in PROSPERO ID: CRD 42022346938.

Results: Of the seven studies, five were from Sub-Saharan Africa and two from USA with a total of 935 participants. Outcomes were categorized into: adherence to antiretroviral therapy (ART), sexual reproductive health behaviors, retention in care, linkage to care and others. Adherence was mainly affected by transportation challenges and restrictions that limited access to care with 17% failure to attend their regular clinics, 3% failure to get medical refills and more lost to follow up (LTF) (6.8% vs 0.7%, $p=0.010$). There was 90% decrease in family planning services but case finding rates for Chlamydia, gonorrhoea and syphilis were similar to pre-pandemic levels. There was a decrease in overall number of patients that could be served (1817 in 2020 vs 2227 in 2019) and clinical capacities to respond to adolescents needs were limited which was shown by 6% who reported missing ARTs for 2 or more days in a row. Two studies found few ALHIV with moderate to severe depressive symptoms. No studies reported trends of viral load or opportunistic infections.

Conclusion: There is a need to reinforce resilient and sustainable adolescent-friendly services. Such may include telemedicine, community-based programs, lay health worker delivery, remote peer support and mental health care, among others.

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Predictors of COVID-19 Vaccination Uptake Among Recipients of Care for HIV in RISE Program in Nigeria

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Background: Significant progress has been made towards the scale up of COVID-19 vaccination in Sub-Saharan Africa. However, vaccine rollout has been hindered by a variety of factors which includes unavailability of vaccines, limited shelf life of the vaccine and concerns around vaccine safety. The Reaching Impact, Saturation, and Epidemic Control (RISE) project, funded by the U.S. President's Emergency Plan for AIDS Relief through the U.S. Agency for International Development, conducted an analysis to determine the predictors of COVID-19 vaccination uptake among HIV recipients of care (RoC) enrolled in the RISE program in five states in Nigeria.

Material and Methods: This analysis uses routine data extracted from the electronic medical records of RoC who received ART in RISE facilities (October 2019 –September 2022). Multiple logistic regression was used to determine the association between sex, age, ART enrollment setting, the time on ART and determine association with RoCs receiving and those not receiving COVID-19 vaccination in RISE supported facilities.

Results: A total of 99,028 RoC are included in this analysis of which 65,387 (66%) were female. More than half of the RoCs were enrolled in ART care in the facility setting 59,390 (60%). The largest age group included in the analysis is 35-44 years old at 32,874 (65%). Thirty-eight percent of RoCs were on ART between 0 to 2 years at 37,551 (38%). Of the total dataset, 97,743 RoC received COVID-19 vaccination while 1,285 (2%) did not. Among unvaccinated clients, 869 are female and 416 are male. In multivariate analysis, enrollment setting ($p<0.001$) and duration on ART >10 years ($p<0.001$) were significant predictors of low vaccination uptake. RoCs enrolled in community had 60% increase in risk of not receiving COVID-19 vaccination compared to those in the facility. In addition, RoCs on treatment for >10 years had 35% increase in risk of not receiving COVID-19. Sex and age were not predictors of vaccination uptake among recipient of care for HIV in RISE.

Conclusion: Prioritizing the COVID-19 vaccination for RoCs enrolled in community and those receiving treatment >10 years could help improve the uptake of the vaccine in the RISE program.

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SARS-COV-2 AG-RDT Integration in HIV, TB, MNCH Clinics: Healthcare Worker Perspective

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Background: Integration of SARS-CoV-2 antigen rapid diagnostic testing (SARS-CoV-2 Ag-RDT) in maternal neonatal and child health (MNCH), HIV, and TB clinics could contribute to early COVID-19 diagnosis. We assessed healthcare workers' (HCW) perceptions of integrating SARS-CoV-2 Ag-RDT in these clinics in Kenya and Cameroon.

Material and Methods: A cross-sectional survey was conducted in October 2022 as part of a cluster randomized trial comparing the integration of SARS-CoV-2 Ag-RDT in MNCH, HIV, and TB clinics using two testing models in 20 health facilities. In each country, five facilities were randomized to a test all (TA) model (screening and testing all clinic attendees), and five others to a screen and test (ST) model (screening all attendees and testing only those eligible). HCWs who provided SARS-CoV-2-services in the study clinics completed a structured questionnaire. Data were collected using a five-point Likert-scale and results between two models compared using Chi2 tests.

Results: Surveys from 336 HCWs (186 ST and 150 TA) were done; 177 (52.7%) in MNCH, 121 (36%) in HIV, and 38 (11.3%) in TB clinics. SARS-CoV-2 Ag-RDT integration was considered useful, with 326 (97.0%) agreeing that it was important for early identification and treatment of those infected, and 318 (94.6%) agreeing on its utility to stop the spread of SARS-CoV-2. While 314 (93.5%) HCWs found it possible to test those symptomatic or at

high risk, and 239 (71.1%) found it possible to screen everyone who attends the clinic, only 193 (57.4%) found it possible to TA clinic attendees (40.3% ST and 78.7% TA, $p < 0.0001$). Only 210 (62.5%) agree they would be able to add SARS-CoV-2 screening and testing to their routine activities. HCWs expressed concern about inadequate staffing and infection prevention and control (IPC) measures and their risk of acquiring infection. More HCWs in the ST felt that people would avoid coming to the clinic if they know that coronavirus testing was being done than HCW in the TA (44.1% vs 24.0%, $p = 0.001$).

Conclusion: While HCWs found the integration of SARS-CoV-2 Ag-RDT in MNCH, HIV, and TB clinics important, several challenges related to staffing, IPC, and community sensitization should be addressed to improve integration strategies.

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COVID-19 Preventive Social-Behavioural Practices and Exposure to SARS-Cov-2 Among Residents in the City of Yaoundé: Lessons From the First Wave of the Pandemic in Cameroon

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Background: Non-pharmaceutical interventions remain key in mitigating the spread of SARS-CoV-2. We sought to assess COVID-19 preventive, social-behavioural practices, and SARS-CoV-2 exposure through IgG rapid tests.

Material and Methods: This was a cross-sectional survey among 971 respondents residing in 180 households within the "Cite Verte" health district of Yaoundé-Cameroon, from October to November

2020. Using a structured questionnaire, data on SARS-CoV-2 preventive and social behavioural practices were collected, while exposure to SARS-CoV-2 was determined by IgG profiling. Data were analysed using SPSS v.21; $p < 0.05$ was considered statistically significant.

Results: Overall, 971 participants were enrolled, among whom 56.5% (549/971) were females. The age group 15-29, 33.5% (325/971) and those with a secondary level of education, 44.7% (434/971) were the most represented. Regarding preventive and social behavioural practices, the least respected measure was "stopped work", 49.1% (477/971), while the most respected was "Respect basic rules of hygiene", 93.8% (911/971). Overall, 30.4% (295/971) reported having had Covid-19 related symptoms while 66.2% (643/971) considered healthcare facilities as high-risk zones for SARS-CoV-2 exposure. Women obeyed preventive measures more than men, with 87.6% vs 81.0% adhering to the lockdown, ($p = 0.005$) and 95.5% vs 91.7% to hygiene rules ($p = 0.017$). The age range 45-64 years (working population) was the least adherent to the lockdown rule, with 75.2% (38/153), $p < 0.0001$. Only 24.7% (73/295) and 6.1% (59/295) of the symptomatic individuals reported having sought medical consultation and Covid-19 testing respectively. Exposure to SARS-CoV-2 by IgG positivity was 31.1% (302/971), with men recording a higher proportion of viral exposure, 51.0% (154/302), $p = 0.021$

Conclusion: In this community of Cameroonian residents highly exposed to COVID-19 (one-third), many perceived healthcare facilities as high-risk zones for SARS-CoV-2 infection and consequently did not seek medical interventions. Thus, in the context of such a pandemic, advocacy on risk communication and community engagement for health-seeking attitudes should preferentially target men.

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Factors Associated With COVID-19 Vaccination Among Women of Reproductive Age in Mozambique

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Background: Vaccine hesitancy has become one of the biggest challenges in combating the COVID-19 pandemic globally. Existing literature has found reasons for COVID-19 vaccine hesitancy to include concerns about the vaccine's newness, safety, and potential side effects. With wide ranges of COVID-19 vaccine acceptance between and within countries, more research is needed to understand context-specific factors that affect COVID-19 vaccine acceptance and hesitancy. This paper aims to determine the factors associated with COVID-19 vaccination among women of reproductive age in Mozambique. The data for this study were collected through the Rapid Mortality Mobile Phone Surveys (RaMMPS) project in Mozambique.

Material and Methods: A cross-sectional mobile phone survey was conducted among women aged 15–49 years to test the use of mobile phone interviews to collect data on child and adult deaths and topics related to pregnancy, delivery care, women's empowerment, and COVID-19 vaccination. 13,307 completed interviews were included in the analysis. Descriptive statistics were presented as percentages. The proportion of vaccinated women were compared by demographic and residential characteristics using chi-square tests. Logistic regression models were used to investigate factors associated with COVID-19 vaccine uptake.

Results: Our findings showed high rates of COVID-19 vaccination (84%) among women ages 15–49. About 13% of unvaccinated respondents were hesitant to take the COVID-19 vaccine if offered. The primary reasons reported for not taking the vaccine were the dislike of needles (18%), COVID-19 vaccine safety concerns (17%), COVID-19 vaccine effectiveness concerns (7%), and medical reasons (7%). We found a significant association between COVID-19 vaccine acceptance and age, with 40 – 49-year-old women being the most likely to be vaccinated when compared to those under 20 years old. Delivery at a health facility was also significantly associated with increased COVID-19 vaccine acceptance. There are limitations in the generalizability and interpretation of the results because of coverage, non-response, and social desirability biases.

Conclusion: To increase COVID-19 vaccine coverage among women in Mozambique, more attention should be given to factors related to vaccine acceptance and hesitancy. Further research should contribute to a deeper understanding of the nuances surrounding acceptance and hesitancy towards COVID-19 vaccines in Mozambique.

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Knowledge, Attitudes, and Practices Towards COVID-19 and Vaccination Uptake Among Pregnant and Lactating Women in Priority High-HIV Burden Districts of Zimbabwe

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Background: The WHO recommends 70% COVID-19 vaccination coverage across all populations, yet by July 2022 Zimbabwe had achieved a first vaccination dose coverage of 53.7%. Furthermore, contrary to WHO guidance, vaccination coverage among pregnant & lactating women (PLW) in Zimbabwe was unknown given absence of policy encouraging this sub-population to get vaccinated, with a requirement to sign a consent form if one opted in. To tailor advocacy and communication strategies aimed at improving vaccination uptake among PLW, we set out to determine uptake of Covid 19 vaccines and knowledge, attitudes, and perceptions among PBLW from August-September 2022.

Material and Methods: Descriptive cross-sectional study conducted through an interview-administered questionnaires to PLW accessing services in 17 health facilities implementing the COVID-Go vaccination programme between August- September 2022.

Results: Of the 509 enrolled PLW, 232 (45.7%) were pregnant and 115 (22.6%) were HIV positive while 22 (4.4%) had unknown HIV status. Covid-19

risk perception amongst the participants was low with only 43 (8.5%) reporting high-risk perception. The mean knowledge percentage score was 75% for all questions assessing COVID-19 and vaccination knowledge levels with 259 (51%) indicating that COVID-19 vaccines were not safe for PLW. The mean attitude percentage score towards COVID-19 and vaccination was 74% with 147 (29%) indicating that the risks of getting a COVID-19 vaccination outweighed the benefits. Overall, receipt of the 1st-, 2nd- and 3rd- COVID-19 doses was 57%, 38% and 9% respectively was similar by HIV status [OR=0.81; (95% CI:0.5-1.32)]. Amongst the vaccinated mothers, 21% were vaccinated during pregnancy and 12% during lactation, while the rest were vaccinated prior to their current pregnancy. Fear of adverse events, myths and misconceptions were reported to be the major barriers to vaccination.

Conclusion: We observed low uptake of the COVID 19 vaccination among PLW due to fears of adverse events and associated myths and misconceptions on harm to them and their babies. There is need for tailored messaging targeting PLW which dispels misconceptions on COVID-19 vaccination during the pregnancy and lactating period and further emphasizes the benefits given their increased susceptibility to severe illness when compared to the general population.

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Identifying the Drivers and Influencers of COVID-19 Vaccine Hesitancy in Nigeria

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Background: COVID-19 vaccine hesitancy is a major challenge to public health globally, and it remains the main driver of the current global economic downturn. The current wave of COVID-19 vaccine hesitancy in Nigeria remained a major threat to the post-COVID-19 economic recovery efforts in the country. Though evidence has shown that none of the COVID-19 vaccines have 100% efficacy at building lifelong immunity in the host, the COVID-19 vaccines however prevent severe COVID disease

and mortality. This study aimed to identify the drivers and influencers of COVID-19 vaccine hesitancy among adults COVID-19 vaccine hesitant populations in Nigeria.

Material and Methods: In a nationally representative sampling of 3,000 randomly presenting COVID-19 vaccine hesitant adults across the six (6) geopolitical zones of Nigeria, a semi-structured questionnaire was administered to consenting participants in this clustered and randomized cross-sectional survey between the months of February and August 2022. Six (6) sets of trained volunteers administered 500 questionnaires each at six (6) selected representative cities in Nigeria. Participation in this survey was consensual and voluntary.

Results: Of the 3,000 participants in this study, 72% (2,160) were Christians, while 22.9% (840) practices the Islamic religion. 52% (1,560) were vaccine naïve or inexperienced; while 78% (2,340) regularly observes the COVID-19 IPCMs. A combined online sourcing of COVID-19 related information among the study participants was 92.3% (2,769/3,000) (Social Media platforms [1,530] and Internet Usage [1,239]). While 46.3% (1,389/3,000) of the participants were skeptical about the safety of the COVID-19 vaccines, 38.3% (1,149) also requires better information about the COVID-19 vaccines. Aside these major drivers of COVID-19 vaccine hesitancy identified, those who could influence the COVID-19 vaccine uptake among the hesitant populations in Nigeria includes: healthcare workers (48.6%), parents (27.6%), religious leaders (25.3%), and partners/spouses (8.3%) respectively.

Conclusion: The results obtained in this study are vital to the designing of new policy measures for the COVID-19 vaccination rollout in Nigeria. In addition, appropriate and tailored COVID-19 health educational programs, proper and adequate orientation of healthcare workers, and meaningful engagements of parents, and religious leaders in health promotion activities can help overcome the current challenge of COVID-19 vaccine hesitancy in Nigeria.

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Multisectoral Response to Mobilization for COVID-19 Vaccination That Results in Getting the Population to COVID-19 Herd Immunity the Case of Central Province in Zambia

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Background: The Zambian community has not been spared from COVID-19 Vaccination hesitance which caused it very difficult to reach 70% complete vaccination required to attain herd immunity. Since recording the 1st cases of COVID-19 on 18th March 2020, Zambia has recorded 4 waves going by the current global trends and received the first consignment of 228,000 doses of the vaccines from the COVAX facility on April 12 2021 and more than 1 million doses consignment were received. With the vaccinations that were received the country conducted over six country-wide vaccination campaigns. During the first two vaccination campaigns, the country struggled to get people vaccinated because of hesitance due to social and religious beliefs.

Material and Methods: On 2nd November 2022, the Zambian President led the country in celebrating the achievement of 70 Percent COVID-19 Vaccination. This all started with the development and testing of the multisectoral response to mobilization for the COVID-19 vaccination strategy in Central Province in the month of March 2022. This harnessed the leadership from different societies to get involved in the mobilization of eligible populations for vaccination within their social networks. This saw political, traditional, religious, civic, and professional leaders coming together under the guidance of the ministry of health to support mobilization. At the grassroots, leaders of social settings were used as entry points to mop and guide those yet vaccinated and those requiring second doses to be fully immunized.

Results: Before the multisectoral response strategy was introduced COVID Vaccination hesitancy was high in the two campaigns in March and April 2022. The months following acceptance levels sky located so much that in the next four months, Central Province reached 70% full vaccination status, making it the first province out of the 10 provinces to attain that status. Other provinces copied the strategy and by October 2022 Zambia reached 70% COVID-19 Full Vaccination status.

Conclusion: The Project demonstrated that by using a multisectoral approach to COVID-19 Vaccination, it is possible to leverage knowledge, expertise, reach, and resources, therefore benefiting from combined efforts and strength as they work towards achieving shared goals of producing better health outcomes.

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Use of Mobile Phone Text Messaging (SMS) In Combating COVID-19 Misinformation and Disinformation: Client Feedback Survey on COVID-19 Information Dissemination in Kenya

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Background: Implementation of disease prevention, and health promotion, including Covid-19, relies on targeted and effective public education and meaningful engagement with communities. The digital revolution provides innovative communication channels for prevention interventions. We utilized an interactive bulk SMS system to reach LVCT Health clients with timely and factual information on COVID-19. This paper explores the perceptions of recipients of COVID-19 educational and behaviour change information messages disseminated through an interactive bulk SMS platform.

Material and Methods: We conducted a cross-sectional survey administered through an interactive bulk SMS platform as part of routine program monitoring. We recorded participants' responses in RapidPro and Casepro platforms, where the data was retrieved and stored in MS Excel. We cleaned and analysed data with R Studio. We calculated frequencies and proportions to describe the sample's basic characteristics and response to COVID-19 related outcome variables.

Results: In total, 837 clients within LVCT Health programmes consented to participate in the survey. Our analytic sample includes 759 participants (482 females, 262 males, 15 other) who provided information on COVID-19 related questions, with 91.2% aware of COVID-19. In addition, most participating clients (57.5%) reported receiving information on COVID-19 through the interactive bulk SMS platform.

Conclusion: Integrating digital technology into pandemic response could be an innovative approach to disseminate timely information and evidence-based behaviour change messages. In addition, these digital chat solutions provide alternative avenues for reducing the burden to health care systems and call centres in addressing knowledge gaps, reinforcing behaviour change and enabling community mobilization and engagements.

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Assessing the Infection Prevention and Control Program During the COVID-19 Era in the Health Facilities of the COVIV (COVID-19/HIV) National Study in Mozambique, 2021-2022

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Background: The COVID-19 pandemic has had an important impact on healthcare services globally and in Mozambique. In June 2021, a cohort study ("COVid19-hIV") was initiated in three Mozambican provinces, evaluating the pandemic's impact on people with HIV, healthcare workers and the healthcare system. It included assessments of health facility (HF) fidelity to the national infection prevention and control (IPC) program and preparedness for future COVID-19 outbreaks.

Material and Methods: Between August 2021-November 2022, trained study staff performed serial assessments (with intervals of 2 to 8 months) of the preparedness and fidelity to IPC/COVID-19 guidelines at three selected urban HF in three provinces (Maputo City, Inhambane, Zambézia) using a structured instrument that was adapted from a Ministry of Health-approved checklist. The tool included questions on 4 key areas (general aspects, aspects per service, COVID prevention measures, material/waste management). Items in each area were scored according to the proportion of standards met (minimum recommended 80%).

Descriptive analysis was done using Microsoft Excel.

Results: Data from eleven assessment rounds were analyzed: Maputo City (four), Zambézia (three) and Inhambane (four). Adherence to IPC/COVID-19 standards ranged from 62% to 86.4%, with the highest score in the HF in Inhambane and the lowest in the Zambézia HF. Site adherence levels between baseline and final round assessments ranged from 72.3% to 80.3% in Maputo City HF, 61.7% to 62.0% in Zambézia HF, and 65.0% to 86.4% in Inhambane HF. Improvement between the first and last rounds was primarily seen in the following assessment components: compliance with prevention measures among healthcare staff and management measures such as making available protective personal equipment, hygiene material and consumables, sterilization of used materials, infectious waste management and preparedness to manage persons with COVID-19.

Conclusion: The improvement in adherence to national IPC/COVID-19 guidelines observed in two of the three health facilities participating in the COVIV study, reaching the minimal recommended standard over the evaluation period, is suggesting an effort by the healthcare system to address pandemic-related needs. However, the varying levels of improvement observed indicates a need for site-specific monitoring and support for IPC implementing guidelines.

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Scaling up COVID19 Vaccination Through Faith Base Structures and Integration of ART Services in Resource Limited Setting: CARES ACT/ARPA Project Experience in Abia State

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Background: The COVID-19 pandemic which began in 2020 was a most devastating pandemic in the last 100 years after Spanish flu requiring multiple approaches for competence to elicit protective immunity. This compelled the international scientific community to find therapeutic remedies and vaccines to control SARS-CoV-2. Vaccine hesitancy is a major barrier to vaccine uptake and the achievement of herd immunity required to protect the most vulnerable populations. It is unknown whether the COVID-19 vaccines provides equal immunity to persons living with HIV. This study aimed to share the experience of vaccine uptake in Abia state using faith-based structures and integration of community ART services.

Material and Methods: CCFN in collaboration with stakeholders such as Abia State Primary Healthcare Development Agency, religious and community leaders embarked on sensitization drive and demand creation in ART Clinics, churches, mosques, markets, and communities to correct myths and misconception on COVID-19 vaccination. Volunteers were engaged to mobilize communities, record, validate and vaccinate eligible persons in 38 comprehensive ART sites across 17 LGAs while COVID-19 vaccination was integrated into the community ART activities through the CBOs and group community testers. Data was retrospectively collected from the DHIS and kobocollect platforms between January 2022 and September 2022 and analyzed using descriptive statistics on Excel.

Results: In the period of March to December 2021, the state recorded a total vaccination of 158,138 (19%) from March to December 2021. The intervention by CCFN resulted in 1,288,485 persons reached with COVID-19 messages and additional 667,415 (81%) vaccinated between January and end of September 2022 leading to a total of 825,553 COVID-19 vaccinations. 368,415 (45%) were partially vaccinated, 352,128 (43%) fully vaccinated while 105,010 (13%) received booster doses. The clients currently on ART across treatment sites is 46,564, a total of 31,377 were elicited and 8,703 (19%) PLHIV received COVID-19 vaccination in Abia State.

Conclusion: We conclude that effective stakeholders' engagement and demand creation increased COVID-19 vaccination in communities with vaccine hesitancy and integration of COVID-19 activities with HIV services also helped to reach the PLHIV population. Further studies needed to

explore the level of immunity of COVID-19 in PLHIV cohorts.

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Genomic Epidemiology of SARS-CoV-2 During the First Four Waves in Mozambique

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Background: Genome sequencing has shown to be a powerful tool in identifying new variants, transmission chains, and viral outbreaks. In Mozambique, the first case of COVID-19 was identified in March 2020 and spread throughout the country resulting in four waves during the first two years. This study describes the genetic epidemiology of SARS-CoV-2 in Mozambique and highlights the importance of continued genomic surveillance.

Material and Methods: We characterize in detail the introduction and spread of SARS-CoV-2 in Mozambique. A total of 1142 genomes were sampled from all the provinces from July 2020 to April 2022 were used for analysis. Epidemiological analysis and reproductive number estimation of the epidemic progression were performed. Phylogenetic and import/export analysis with global and southern African genomes was performed to better understand the epidemiological linkage and viral spread.

Results: Data from this study shows that Beta, Delta, and Omicron Variants of Concern (VOCs) were responsible for most of the infections during the second, third, and fourth waves, respectively. Our analysis confirms that the first introduction originated from North America instead of the United Kingdom as previously reported. Phylogenetic and import inference indicate that the majority of the introductions were from Southern Africa, showing a strong epidemiological link between Mozambique and its neighboring countries.

Conclusion: Our study shows large viral exchanges between Mozambique and Southern African countries were observed during the first 25 months of the pandemic in Mozambique, highlighting the impact of trade and migratory flows in the viral spread. In summary, this study emphasizes the importance of genomic surveillance for current circulating variants to better inform public health decision actions.

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Integrating COVID19 Professional-Use Diagnostics in Srh Services: Lessons Learned From Implementation in Zimbabwe

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Background: COVID-19 services are poorly defined in Africa. Here we consider feasibility and reach to people at risk for severe disease when COVID-19 rapid antigen tests (CV19-RDT) were added to community-based sexual and reproductive health (SRH) service platforms in Zimbabwe.

Material and Methods: Funded through Unitaid/STAR 3ACP Project, symptom screening

and CV19 RDT testing were integrated from April-Dec 22, into: - Five standalone HIV testing clinics (New Start) in Harare, Chitungwiza, Bulawayo, Gweru and Masvingo; - 12 sex worker Clinics (Sisters) in 12 cities/towns, nationwide. Trained clinic staff integrated symptom screening (10 COVID-19 symptoms), and testing (SURE STATUS Ag kits) within SRH clinical delivery, recording details electronically.

Results: 51,580 SRH service clients received symptom screening (Table 1), with 1917/2100 (91.3%) symptom-positive participants agreeing to test, of whom 51 (2.7%) were CV19-RDT positive. Both platforms had mostly female clients of similar age. A higher proportion of New Start participants were >50 years and reported COVID-19 symptoms. Acceptance of CV19-RDT if symptomatic was high. Pre-existing risk factors for severe COVID-19, including HIV, were likely under-reported (< 5% New Start clients with any risk factor, data not collected within Sisters). Reported vaccination was high in Sisters (76%) which promoted vaccination, but much lower among New Start and with a high rate of missingness.

Conclusion: COVID-19 testing integration in SRH services was feasible, with high participation. Identifying infectious clients contributes to infection control and surveillance, but young age and low reporting of co-morbidities limited therapeutic potential from early detection.

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A Test and Treat Community Based Strategy, to Optimize Early Access to Molnupiravir for COVID-19 in High-Risk Populations Groups in South Africa

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Background: Recurrent COVID-19 waves lead to increased morbidity and mortality in high-risk populations. New antiviral agents play a role in

early disease by limiting both viral replication and the subsequent immunological phase, but their effectiveness relies on early presentation, rapid confirmation of SARS-CoV-2 infection and prompt initiation of therapy. The COTeT trial aims to find an optimal test and treat pathway by optimizing case finding within the first 5 days of symptom onset, utilizing point-of-care antigen testing, using a simplified checklist and linking appropriate patients to immediate treatment initiation within diverse resource limited community settings. In the process, we also aim to accumulate safety and efficacy data on molnupiravir in urban, semi-urban and rural populations.

Material and Methods: COTeT is an ongoing randomised, multi-centre, double-blind, Phase 3 study to observe the effectiveness, safety and tolerability of molnupiravir compared to placebo administered orally to high-risk adult outpatients in South Africa with mild COVID-19.

Results: 4854 patients tested to date (Aug 2022 - Jan 2023): a positivity rate of 2.9%(n=143); 67%(n=3258) > 50 years of age; 62%(n=3010) female. 30 participants enrolled on investigational product (eligibility criteria included age >50yrs with HIV/previous TB/Obesity/DM/HPT or >65yrs). No significant AEs noted. Percentage testing per province: KZN (urban/rural) 13%/ 32%; Gauteng (urban) 32%; North-West (semi-urban) 7%; Eastern Cape (rural) 9%.

Conclusion: National positivity rates over this period were 13% vs 2.9% in our study, indicating increased participant willingness to be tested in a community outreach setting. The low positivity in symptomatic patients could be due to vaccination status (66% vaccinated¹), or prior COVID infection (estimated 79% seroprevalence²) in the >50yrs age group. This raises the question of the possible value add of a test and treat programme in a low resource setting, in the presence of emerging new variants whose disease severity and mortality impact is unknown.

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Leveraging Existing Community-Based Mortality Surveillance (SIS-COVE) to Identifying COVID-19 Related Deaths in Mozambique From 2020 to 2022

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Background: During the COVID-19 pandemic, real time information on number of deaths was crucial to understand the virus dynamics and implement strategies to prevent excess mortality worldwide. In countries such as Mozambique were the majority of deaths still occurs in the community, monitoring all cause and COVID-19 specific mortality was a challenge. This study aimed to identify COVID-19 related deaths between 2020 and 2022 using an existing mortality surveillance system, SIS-COVE.

Material and Methods: Since 2020, we used an existing mortality surveillance system (SIS-COVE) to identify possible COVID-19 related deaths. We carried out phone call interviews to the SIS-COVE clusters from all provinces of the country to identify recent deaths and to administer the existing WHO VA tool that was adapted for COVID-19. Identification of probable cause of death by COVID-19 was done through an algorithm based on combinations of symptoms that were analysed using STATA 2017.

Results: From March 2020 to June 2022, a total of 3898 VA interviews were performed, of which 418 (11%) were considered possible COVID-19 related deaths. The majority (82%) of COVID-19 related deaths were above the age of 15, 59% were female, 52% were from the South region of the country and 67% lived in rural areas. The Almost one out of three (63%) of the COVID-19 related deaths occurred outside the health facility and about 26% (109/418) had a positive COVID-19 diagnosis made by a health professional prior to death.

Conclusion: Verbal autopsy can also be used to identify causes of death from covid 19 in the population and provide data related to suspected causes of death and can serve as a basis for managers to improve public health policies.

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Implementation of SARS-CoV-2 Community Rapid Testing Sites in Maputo, Mozambique

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Background: The first case of COVID-19 in Mozambique was reported in March 2020 and since then, five epidemic waves have occurred, resulting in a significant burden to the health sector. The country moved from local to community transmission in June 2020. To facilitate access to SARS-CoV-2 testing and support epidemiological surveillance, we implemented community-based rapid testing sites (RTS) for SARS-CoV-2 screening in high mobility zones, in Maputo, Mozambique.

Material and Methods: Methods: Five RTS were established, two in bus terminals and three adjacent to community food markets, where free-of-charge nasal RDT-Ag (Abbott PanbioTM) was offered to all who showed interest in being screened for SARS-CoV-2, irrespectively of the presence of symptoms or history of contact with infected individuals. Sociodemographic data and medical history were collected for all subjects. Those with a negative result but with suggestive symptoms of COVID-19 collected a nasopharyngeal sample for RNA-PCR. Descriptive statistics were used to describe the results.

Results: From August 2021 to August 2022, 33.189 subjects were screened for SARS-CoV-2 infection in all five RTS, with an average of 100 screenings per RTS, per day. Subjects were mostly female (18.789/33.189, 57%) and the mean age was 31 years (interquartile ranges: 24-41). Overall, 21.3% (7.082/33.189) of subjects had at least one comorbidity, with HIV/AIDS being the most

common (2.051/7.082, 35.3%), followed by arterial hypertension (2.273/7.082, 32.1%). Approximately 20% (6.833/33.189) of subjects presented with COVID-19-like symptoms, and 6.3% had a history of contact with an infected individual. Positivity rate on the RDT-Ag was 6.2% (2.045/33.189), being higher (591/2.045, 28.8%) in the age group of 20-29 years. Around 1.3% (441/2.045) of subjects who tested positive on the RDT-Ag had at least one comorbidity. Forty-one samples for RNA-PCR were collected and 5 (12.2%) had a positive result for SARS-COV-2.

Conclusion: The implementation of RTS contributed to the expansion of SARS-CoV-2 screening capacity in an urban setting, in Mozambique. In the context of peak community transmission, RTS may reduce the SARS-CoV-2 screening burden on health facilities.

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COVID-19: Salivary Amylase Variations in Individuals Screened During a Mass Campaign

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Background: Saliva plays an important role in oral and systemic health. Its compositing includes non-enzymatic and enzymatic proteins like alpha-amylase or ptyalin. This study aims to investigate the salivary amylase levels of individuals with COVID-19 compared to healthy individuals and associated factors of its variations in case of COVID-19.

Material and Methods: we conducted a comparative cross-sectional analytical study at the Biochemistry Laboratory of the Faculty of Medicine

and Biomedical Sciences of the University of Yaoundé I. Our study population was the salivary samples stored at -20°C , of 20 COVID-19 positive and 20 COVID-19 negative individuals. Alpha amylase was measured using the reagent used here was the BIOLABO brand CNPG3 amylase (Reference LP99553, LOT 082009A1, Expiry date 2023/08). Statistical analyses were performed using SPSS version 26.0 software with $p < 0.05$ considered statistically significant.

Results: of the cases with COVID-19, 25% had loss of taste, and 5% had loss of smell. Alpha amylase was lower in the 25-34-year age group (73.29 ± 31.15 IU/L; $p=0.034$), in females (102.97 ± 63.03 IU/L vs. 309.71 ± 180.56 IU/L; $p=0.021$) and in those with daily brushing (92.65 ± 23.85 IU/L vs 250.61 ± 157.27 IU/L; $p=0.018$). It was higher in symptomatic patients (308.28 ± 180.75 IU/L vs $102.68.21 \pm 68.21$ IU/L; $p=0.032$).

Conclusion: COVID-19+ patients showed a loss of taste. Salivary Alpha amylase is influenced by age, gender oral hygiene and clinical form. The evaluation of this salivary biochemical parameters could help in the surveillance of oral diseases in COVID-19+.

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Leveraging New Strategies to Improve on Clients' Outcomes: Implementation of Multi-Month Dispensing (6 MMD) in Rwanda During the COVID-19 Pandemic

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Background: Since 2016, Rwanda adopted the "Treat all" strategy following the World Health Organization recommendations, and all clients who test HIV-positive are linked to care and initiated on Antiretroviral Therapy (ART). National HIV treatment guidelines has adapted to include differentiated service delivery model and stable clients benefit from three multi-months' drug dispensing (3MMD). In response to the Covid-19

pandemic, the National HIV program initiated 6 multi-month dispensing (6MMD) distribution for stable clients on Tenofovir-Lamivudine-Dolutegravir (TLD) to ensure uninterrupted access to ART and limit the frequency of physical contact and congestion at health facilities.

Material and Methods: From September 2020, 6 MMD started in Kigali city for 3 districts. Due to the Covid-19 pandemic, physical meetings were not allowed in the country, and training of health care providers as well as shipment of TLD 90 was difficult. The team from RBC/HIV Division with clinical mentors from hospitals visited Health Care Providers (HCPs) across the country and discussed the eligible PLHIV for 6MMD. An onsite training was conducted in 2021 for 8 districts and the training of remaining HCPs was conducted in 2022. All health facilities in the country are implementing 6MMD as a less-intensive models of drug refill starting on those on TLD regimen. In total of 212,525 PLHIV on the ART; 23,8%(50,697) are on one-month pharmacy dispensing, 29,9%(29,90848) on 3MMD and 46%(98,265) on 6MMD.

Results and Conclusion: Implementation of 6MMD during the covid-19 pandemic required the training of healthcare providers and the identification of eligible clients. Onsite training was a good way to reach health care providers and responding similarly as the non-onsite training. The 6MMD dispensing decreased number of clinic visits and the workload of health care providers who were overloaded due to covid-19 pandemic. Both PLHIV and healthcare providers appreciated the model and commended its expansion above 6 months' pharmacy pick up for sustained HIV epidemic control.

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Reaching Key Populations With Timely and Credible Information on COVID-19 Through the Healthy Living Platform

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The outbreak of the novel Coronavirus Disease 2019 (COVID-19) was declared a global pandemic by the World Health Organization due to the high number of infections globally. As of January 19, 2023 (20:50 GMT), the number of confirmed cases in Ghana was 171,099 with 1,462 deaths and 169,626 recoveries. The general population, people living with HIV, and other key populations (KP) have been urged to adhere to recommended preventive measures. This includes the need to debunk misinformation and provide access to timely, life-saving, and credible information. In Ghana's Western, Western North, and Ahafo Regions, KPs continue to face stigma and discrimination (S&D) resulting in social exclusion and low utilization of healthcare services. The S&D experienced by COVID-19 patients coupled with the disinformation and misinformation surrounding COVID-19 vaccination is likely to further exclude more KPs from accessing COVID-19 safety information and general healthcare in these regions. The USAID Strengthening the Care Continuum Project is leveraging its Healthy Living Platform (HLP) to share safety tips that KPs should follow to prevent COVID-19 infection. The HLP is a two-way system that transmits short message services, offers interactive voice response, and is integrated with helpline counseling via a three-digit shortcode on major telecommunication networks in Ghana. Subscribers have access to professional counselors (nurses) who provide private and confidential phone counseling as an entry point to the HIV care continuum.

From October 1, 2021, to December 31, 2022, the HLP serviced 29,296 new users with an average engagement time of 1.41 minutes and 3,381 counselor interactions. The counselors responded

to COVID-19 questions from subscribers including, the difference between COVID-19 and HIV, where and when to get shot in arms, how COVID-19 is prevented, if COVID-19 is airborne, how COVID-19 is transmitted, as well as the location of COVID-19 testing centers.

The HLP should continue to be supported and expanded as a critical link for KPs to necessary healthcare information and services, including COVID-19 while mitigating barriers to care such as S&D. The HLP is also a model of effective integrated live counseling and real-time IVR counseling platform that can be replicated at scale in diverse contexts.

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Service Quality in Decentralized Community-Based COVID-19 Antigen Rapid Diagnostic Testing Programmes in the Federal Capital Territory, Nigeria

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Background: Decentralized COVID-19 testing with antigen rapid diagnostic tests (CV19-RDTs) services is recommended by Nigerian CDC for implementation in primary health care, community pharmacies, and licensed "patent medicine stores" that serve the least affluent communities. To support quality assurance, we applied an adapted version of SPI-RRT (Stepwise Process for Improving the Quality of HIV Rapid and Recency Testing) to sites providing CV19-RDTs in Federal Capital Territory of Nigeria.

Material and Methods: In Dec 2022, funded by Unitaid through the STAR 3ACP Project, 83 community healthcare facilities (25 Community Pharmacies, 10 Patent Medicine Stores, 48 Primary Health Centres) were evaluated using Stepwise

Process for Improving the Quality of SARS-CoV-2 Antigen Rapid Diagnostic Testing (SPI-RT) Checklist, tailored to the local context. Evaluated domains included service quality, documents and records, personnel training and certification, safety, physical infrastructure, pre-testing phase, testing phase, and post-testing phase. Each facility received an overall score, expressed as a percentage indicating their performance level. Mean percentage scores across domains are reported.

Results: 23/48 (48%) of primary health centers scored at least 90% for service quality, as did 11 (44%) of pharmacies, but 0/10 patent medicine stores. Apart from personnel training and certification, primary health centers scored higher across all domains of service quality, followed by pharmacies and patent medicine stores. The lowest mean score in any domain was in the patent medicine store (56%) on the testing phase.

Conclusion: Primary Healthcare Centers and Community Pharmacies can provide quality decentralized testing for COVID-19. Patent Medicine Stores may need additional support including monitoring and quality improvement initiatives to ensure the provision of high-quality decentralized COVID-19 rapid testing services.

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The Effect of COVID-19 Restrictions on HIV Inpatient Admissions and Treatment Outcomes: An Uncontrolled Before-And-After Study at a Ugandan Tertiary Hospital

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Background: Measures to contain the Corona Virus Disease 2019 (COVID-19) pandemic such as transport restriction, limited access to prevention and treatment services for endemic infectious

diseases such as HIV and tuberculosis. Majority of the evidence available is from ambulatory care, with limited data from inpatient care. We aimed to document the differences in inpatient outcomes for all and HIV positive patients at a national referral hospital in Uganda.

Material and Methods: This was an uncontrolled before-and-after study, conducted using electronic medical records for all patients admitted in 2019 as the pre-COVID-19 restriction period (pre-COVID) and in 2020 as the peri-COVID-19 restriction period (peri-COVID). Data was downloaded in May 2021, as spreadsheets, cleaned in Microsoft Excel, and exported to STATA for analysis. We determined the difference in number of admissions, median length of hospital stay, and median survival time; and odds ratios of mortality between the pre and peri-COVID groups.

Results: There were a total of 7506 patients admitted to Kiruddu NRH in the study period, of whom 50.8% were female and 18% were aged 31 – 40 years, and 18% were HIV positive. Overall, 24.6% (1849) died, overall median hospital stay was 4 days (IQR: 2 – 8) and median survival was 16 days (95% CI: 15 – 17). Total admissions were lower in the peri-COVID compared to the pre-COVID period. The mortality rate was higher period, median hospital stay was longer while median survival was shorter in the peri-COVID compared to the pre-COVID period. The odds of death were higher in the peri-COVID compared to the pre-COVID period (aOR: 3.49, 95% CI: 3.12 – 3.91, p<0.01). These effects were more pronounced among HIV positive patients.

Conclusion: Compared to the pre-COVID year, the peri-COVID period was characterized by lower inpatient admissions but poorer treatment outcomes for both HIV infected and non-HIV infected patients. Outcomes were worse for HIV infected individuals. Interventions to respond to emerging epidemics should minimize disruption to inpatient care, more so for HIV-infected individuals.

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Community-Based Healthcare Provider Experiences Delivering COVID-19 Antigen Rapid Diagnostic Testing in Federal Capital Territory (FCT), Nigeria

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Background: Professional-use COVID19 Antigen-rapid diagnostic tests (Ag-RDT) are used in Nigeria to scale-up testing into novel settings (community pharmacies and patent medicine stores). The Theoretical Domains Framework posits that providers need knowledge, self-efficacy, belief in and motivation to adopt Ag-RDT. This study aimed to compare pharmacists and patent medicine vendors on these domains, with primary healthcare workers delivering COVID-19 Ag-RDT in Nigeria, despite declining COVID19 positivity in country.

Material and Methods: Funded by Unitaid through STAR 3ACP Project, researchers designed a quantitative tool to allow comparison across the domains of belief, perception and knowledge administered to 83 providers: 47 primary healthcare workers, 27 community pharmacists, and 9 patent medicine vendors in Dec 2022.

Results: 96% (26/27) of pharmacists and 89% (8/9) patent medicine vendors had knowledge of delivering rapid diagnostics for other health-conditions, compared to 100% of primary healthcare workers (47/47). Patent medicine vendors were less likely (89% 8/9) to consider Ag-RDT for COVID19 easy to perform, compared to other diagnostics, unlike 100% of pharmacy and primary healthcare workers who considered Ag-RDT as easy to perform. Patent medicine vendors (11%, 1/9) and pharmacists (15%, 4/27) were also more likely to agree that clinical symptoms alone are sufficient to diagnose COVID-19 compared to primary healthcare workers (68%, 32/47), and

pharmacists (74%, 20/27) and patent medicine vendors (78%, 7/9) were less likely to fully trust a negative RDT result as truly negative than primary healthcare workers (96%, 45/47). The median number of daily tests was also highest in primary healthcare (1 test), implying greater exposure to COVID19 Ag-RDT. All pharmacists and primary healthcare workers surveyed had tertiary education, compared to 33% (3/9) of patent medicine vendors.

Conclusion: Novel settings for COVID-19 Ag-RDTs rely on provider delivery knowledge and perception; patent medicine vendors and pharmacists may benefit from enhanced support when delivering novel services.

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COVID-19 Vaccine Hesitancy and Attitude Toward Booster Doses Among Patent and Proprietary Medicine Vendors (PPMVs) in Obio/Akpor LGA, Rivers state Nigeria

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Background: Vaccine reluctance among healthcare workers (HCW) can have widespread negative ramifications, including modelling behavior for the general population. In Nigeria, patent and proprietary medicine vendors (PPMVs), defined as “persons without formal training in pharmacy who sell orthodox pharmaceutical products on a retail basis for profit”, provide the main source of medicine for many common illnesses in most rural communities. In addition to selling drugs, PPMVs can be a source of advice about illness and drug therapy in place of more formal care at health facilities, even if they are relatively accessible. They therefore play an important role in reducing the burden of disease and mortality through the basic health care services they deliver. Objectives: In this

study, we examine the attitudes and hesitancy of patent and proprietary medicine vendors in Obio/Akpor LGA, Rivers state toward COVID-19 vaccines as well as booster doses months after they were made available for use in the country.

Material and Methods: A mixed methods study was conducted between April and June 2022 among registered patent and proprietary medicine vendors in the LGA. The survey was conducted using an interviewer-administered questionnaire among 228 PPMVs selected by simple random sampling. In addition, four focus group discussions (FGD) were conducted to generate qualitative data. Quantitative data was analyzed using SPSS version 25 while content analysis was done on the qualitative data.

Results: In this study, 79.0% (n = 180) of respondents were hesitant to take the first or second dose of the vaccine. Lower level of education attainment (Secondary school or less) were associated with higher vaccine hesitancy. Among the vaccine-hesitant group, more respondents noted mistrust of regulatory authorities (45.3%), fear of government (48.6%), and pharmaceutical companies (50%) than mistrust of doctors (25.4%). 66% (n=190) of the PPMVs were concerned that there were always new strains of the virus hence vaccination may be ineffective.

Conclusion: Acceptance of COVID-19 vaccine by PPMVs is still very poor. There is a need for effective communication to improve vaccine literacy among this cadre of healthcare workers.

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The Impact of Peer-To-Peer Talks on Increasing COVID-19 Vaccine Uptake Among Adolescents and Youth Living With HIV/AIDS in Tanzania

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Background: The Tanzanian Ministry of Health undertook a campaign for the provision of COVID-19 vaccines in August 2021 to all adults above 18 years of age due to low vaccine uptake in the population. Baylor College of Medicine Children's Foundation - Tanzania Center of Excellence (COE) in Mbeya started a vaccination activity targeting adolescents and youth living with HIV (AYLHIV), aged 18-years, at the COE as well as in the supported regions in the Southern Highlands zone of Tanzania.

Material and Methods: The COE launched a COVID-19 vaccination campaign aiming to increase COVID-19 vaccine uptake among adolescents and youth living with HIV (AYLHIV) at the COE and in regions supported by Baylor Foundation Tanzania, In May 2022, the Infection, Prevention and Control (IPC) team conducted a one-day orientation training for peer educators with the objective of capacitating them with general knowledge about COVID-19 disease and vaccines. The aim was to dispel misconceptions and myths regarding the vaccines. This training allowed them to conduct 10-day peer-to-peer COVID-19 vaccine sensitization campaigns culminating in a final day where all sensitized and eligible adolescents and youth were vaccinated.

Results: From June 2022 to December 2022, a total of 361 adolescents and youth were vaccinated at the COE; among them, 251 (70%) were AYLHIV and 206 (57%) were female. A total of 2,746 adolescents and youth were vaccinated at the supported sites in Mbeya, Songwe and Rukwa Region. Among those vaccinated, 2,577 (94%) were AYLHIV (see chart) and 1773 (65%) were female.

Conclusion: Peer-to-peer support and education regarding COVID-19 vaccination can be an effective way to increase engagement in COVID-19 vaccination programs, particularly to increase COVID-19 vaccine uptake among AYLHIV.

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Outcome of COVID-19 Antigen Testing in Children, Adolescents, and Caregivers Who Presented With COVID-19 Signs and Symptoms

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Background: Clinically diagnosing severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) transmission is challenging due to the presentation of COVID-19 that often mimics other respiratory viruses, thus laboratory testing is crucial. PCR testing for SARS-CoV-2 became available in Tanzania in early 2020 but was only made available via the main reference laboratory in Dar es Salaam and was prohibitively expensive for most Tanzanians. Antigen testing was rolled-out in 2022 via lateral-flow assays and was made available at no cost to the health care clients.

Material and Methods: Screening for COVID-19 symptoms for all health care clients, caregivers, visitors, and staff was initiated at the Baylor College of Medicine Children's Foundation – Tanzania clinic in Mbeya at the main entrance in April 2022 to December 2022. A check list was used and included the following symptoms: fever or chills, cough, shortness of breath or difficulty breathing, headache, new loss of taste or smell, sore throat, congestion or runny nose, and recent visit to high-risk area or receiving a visitor from high-risk area. Those screening positive were directed to see a clinician and the decision was made to follow up with antigen testing.

Results: A total of 153 clients were tested between April 2022 and December 2022, 64.7 % (99/153) were between 0-18 years old and 35.3% (54/153) were 19 and above; 37.2% (57/153) female and 62.7(96/153) were male. Those eligible for vaccination were 35.3 % (54/153) and 66.7 % (36/54) among the eligible were fully vaccinated. There was a total of 4.6 % (7/153) positive results. Among the positive cases, 2.6 % (4/153) were

below 18 years which is a non eligible for vaccination group.

Conclusion: SARS-CoV-2 testing using antigen testing gives us a diagnosis within 30 minutes and is an essential tool in our setting for controlling the SARSCoV-2 transmission and providing treatment. We saw that transmission occurred even in COVID-19-vaccinated individuals though the numbers were small.

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Determinantes Socioeconómicos e Clínicos Associados a Casos Graves de COVID-19 na Província de Tete

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Introdução: O risco de infecção por COVID-19 é maior em indivíduos com disparidade social e de saúde, como idade, raça, etnia, idioma, renda e condições de vida, recomendando-se a priorização dos grupos mais vulneráveis na promoção de saúde e prevenção de doenças assim como abordar as desigualdades estruturais que contribuem para o risco financeiro, de insegurança no transporte, habitacional por meio de políticas sociais. Este estudo pretendeu descrever as características sociodemográficas e clínicas dos pacientes testados para COVID-19 na 1ª, 2ª e 3ª vaga da pandemia.

Metodologia: Trata-se de uma pesquisa descritivo – transversal retrospectivo com uma abordagem quantitativa (onde foram usadas bases de dados de pacientes testados positivos a COVID-19 que constituíram 2 grupos (graves e não graves). A amostra foi determinada por estrato, Angónia (10), Moatize (31), Cahora-Bassa (21) e Cidade de Tete (2030). Para selecção dos distritos e dos participantes utilizou-se uma amostragem estratificada multietápica. A análise de dados foi mediante as análises descritivas, qui-quadrado de pearson, regressão logística multivariada através do pacote estatístico SPSS V.28.0

Resultados: Foram inqueridos 1402 participantes, onde maior parte destes pertenciam a cidade de Tete 1278 (91.2%), onde maior parte dos participantes eram do sexo masculino com 790 (53,4%), possuíam algum emprego 940 (67.0%) com uma Renda mensal mais de 20.000 meticais 613 (43.7). Os principais determinantes sociodemográficos e clínico associados aos casos graves e não graves a COVID-19 foram status social e económico (IC95% OR 1.9 (1.097-3.518 P<0.003), acesso aos serviços de saúde e diagnóstico (IC95% OR 2.1 (1.080-4.332 P<0.002) e ter alguma comorbidade (IC95% OR 5.0 (2.795-8.946 P<0.000).

Conclusão: Maior parte dos participantes pertenciam ao grupo não grave, sendo possuíam algum emprego com uma renda mensal abaixo dos 20.000. Os factores associados aos casos graves e não graves foram estar em viver em situação de desfavorecimento social e económico (Pobreza) o acesso difícil a unidade sanitária e diagnóstico, bem e possuir alguma comorbidade. Sendo que participantes mais pobres aumentam as chances de desenvolver a COVID-19 grave.

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Factores Psicossociais que Influenciam na Subida da Carga Viral em Pacientes em TARV

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Introdução: Estima-se que 1.4 milhões de pessoas, em Moçambique, estão infectadas pelo HIV/SIDA e 120 mil novas infecções ocorrem anualmente. O processo de adesão ao tratamento antirretroviral (TARV) assume importância decisiva diante da perspectiva de uma vida longa e com qualidade. Verifica-se alguns pacientes que por conta de alguns factores psicossociais, apresentam resultado de carga viral acima de 1000 cópias. Para tal é necessário que se conheça os factores psicossociais que influenciam, de modo a se criar estratégias que visam o reforço de adesão e prevenção de novas infecções para a melhoria da qualidade, e se evitar a falência terapêutica. Objectivo: avaliar os factores psicossociais que influenciam na fraca adesão e

determinam a subida dos níveis carga viral em pacientes em TARV.

Metodologia: Foi realizado um o estudo transversal quanti-qualitativa, de cunho exploratório e de campo, contou-se com auxílio do questionário semi-estruturado, onde foram incluídos 120 pacientes, colectados em três (3) unidades sanitária da cidade da Beira, Centro de Saúde Militar de Matacuane e Posto Médico da Base Aérea da Beira e o Centro de Saúde da Manga –Loforte. Foi usado o método comparativo para o estudo de caso que envolveu-se 2 pacientes com carga viral acima de 1000 cópias.

Resultados: Para obtenção, foi usado o questionário dirigido aos assistentes sociais e psicólogos, fez-se a colecta dados a partir das ferramentas de reforço de adesão. Os principais factores psicossociais, foram agrupados em três grupos: factores comportamentais e emocionais com 54%; factores socioeconómicos e culturais com 32% e factores psicológicos com 14%.

Conclusões: Do estudo feito, constatou-se os seguintes factores: comportamentais e emocionais onde destacam-se, a falha consistente na toma dos medicamentos, não-aceitação da seropositividade e não dar crédito ao tratamento antirretroviral; psicológicos destacam-se, a ansiedade e seguida da depressão, estress e quanto aos factores socioeconómicos e culturais, destaca-se o custo de vida e pobreza, seguida de falta de confiança para com parceiro e falta de alimentação melhorada. Para garantir processo de adesão ao TARV, devem ser encaminhados para o Apoio Psicossocial (APPS) para a realização de Aconselhamento para a Melhoria da Adesão (AMA). Palavras-chave: Factores psicossociais, carga viral, HIV/SIDA, TARV.

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Estudo de Linha de Base e Intermédia do Projecto de Identificação de Crianças (0-14 Anos) e Raparigas Adolescentes (10-19 Anos) Vivendo com HIV e Sua Ligação ao Cuidados e Tratamento do HIV nas Unidades Sanitárias e o Envolvimento das Comunidades em Três Distritos da Província de Manica

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Introdução: A epidemia de HIV em Moçambique continua a ameaçar o futuro social e económico no país. Em 2019, estimou-se que mais de 2.2 milhões de pessoas viviam com HIV/SIDA e 120.000 novas infecções ocorreriam por ano, este facto, indica a necessidade de amplificação e aceleração do tratamento antirretroviral no país. Objectivo: Determinar as taxas de identificação e de início de cuidados e tratamento de HIV em crianças (órfãs e vulneráveis, filhos de mulheres trabalhadoras de sexo), raparigas adolescentes e mulheres trabalhadoras de sexo.

Metodologia: O desenho do estudo foi observacional analítico transversal, com abordagens quantitativa. A população de estudo foi constituída por Crianças órfãs e vulneráveis, filhos de mulheres trabalhadoras de sexo de 10 a 14 anos de idade HIV positivas; Raparigas adolescentes de 10 a 19 anos de idade HIV positivas; Mulheres trabalhadoras de sexo HIV positivas. O estudo decorreu em 12 USs dos distritos de Bárúé, Sussundenga. Os dados foram colhidos no sector de SMI, TARV e SAAJ, realizou-se a análise de dados no SPSS, que incluiu frequências e proporções.

Resultados: Das 10352 COV's por testar até no fim do segundo ano, apenas 3340 (32%) foram testadas. Os distritos de Bárúé e Sussundenga,

alcançaram apenas 20% e 43% das COV's testadas, respectivamente. Como observado com outros indicadores, o desempenho foi maior no segundo ano (77%) em comparação com o primeiro ano de implementação do projecto (23%). A ligação aos cuidados e tratamento foi total no primeiro ano em ambos os distritos. No segundo ano a ligação foi de 95% em Bárúé e 77% no distrito de Sussundenga. No global a taxa de ligação foi de 89%, sendo 96% no distrito de Bárúé e 83% no distrito de Sussundenga.

Conclusão: Embora o número de filhos de MTS HIV+ não tenha alcançado os dois terços no fim do segundo ano de implementação, o projecto teve melhor desempenho na identificação de filhos de MTS vivendo com o HIV (55%), quando comparado com a identificação de raparigas (38%) e COV (16%). Em geral as taxas de ligação aos cuidados e tratamento e retenção no tratamento foram boas.

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Custo da Dieta Saudável e Adequada Para Pacientes HIV Positivo e Seu Impacto no Tarv: Caso de Utentes Atendidos num Centro de Saúde do Distrito de Malema, Janeiro 2023

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Introdução: O Vírus da Imunodeficiência Humana (HIV, do inglês Human Immunodeficiency Virus) é um vírus que dá origem ao Síndrome da Imunodeficiência Adquirida. De acordo com a base de dados Ourworld in data, a incidência de HIV em Moçambique é de 6.45 pessoas para cada 1000 habitantes não infectadas no grupo de 15-49 anos. Estudos mostram que pessoas vivendo com HIV que se alimentam de forma saudável e adequada podem tolerar melhor os medicamentos para o HIV, daí, a importância de uma boa nutrição. O presente estudo objectivou avaliar o custo mínimo da dieta saudável e adequada para pacientes HIV positivos e

o seu impacto no TARV em utentes num centro Saúde do distrito de Malema.

Metodologia: Trata-se de uma pesquisa observacional, transversal, descritiva, de abordagem quantitativa, dados foram tabulados usando o pacote Excel da Microsoft Office 2019®, foi feita correlação de Spearman usando o Software SPSS® 20 para fazer associação entre variáveis, fizeram parte do estudo, 62 adultos em TARV de um centro de saúde no distrito de Malema.

Resultados: Os pacientes HIV positivos, gastam em média para a sua alimentação diária de um valor de 32,07 MZN o equivalente a 962,13 MZN por mês, em contrapartida, em função dos alimentos localmente disponíveis o valor ideal e adequado seria de 160,07 MZN por dia o equivalente a 4.802,12 MZN mensal por pessoa. Teste de correlação de Spearman foi feito para as variáveis Custo mensal da alimentação por pessoa e Índice de Massa Corporal tendo sido constatado uma fraca associação positiva ($r= 0,297$) com o valor de $p=0,019$ ($p<0,05$) concluindo deste modo que não existe associação entre o custo mensal da dieta em pacientes HIV+ e o seu Índice de Massa corporal.

Conclusão: De acordo com os resultados encontrados concluímos que os utentes em TARV do hospital estudado no distrito de Malema têm uma dieta muito abaixo das recomendações, daí que, estratégia de geração e/ou aumento de renda para estes utentes devem ser levadas a cabo com vista a melhorar a sua alimentação, maximizando o funcionamento do organismo e desta feito também melhorando o sucesso no tratamento.

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Faible Fréquentation des Formations Sanitaires : les Vraies Attentes des Patients en Contexte Camerounais

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Contexte : Le district sanitaire de Mfou est l'un des 29 districts sanitaires de la région du Centre du Cameroun. En 2014, le taux de fréquentation de ses structures était de 41%, inférieur à la norme de 80% du ministère togolais de la santé en 2013. Le questionnement des facteurs associés à cette faible fréquentation a nécessité l'identification des liens et associations entre celle-ci et les facteurs socio-démographiques, la satisfaction sanitaire et la perception des structures par la population.

Matériel et méthodes : Il s'agissait d'une étude transversale quanti-qualitative, descriptive qui s'est déroulée du 15 juin au 22 septembre 2018 dans les 32 formations sanitaires du district sanitaire de Mfou. La collecte des données s'est faite à partir des dossiers de consultation médicale de 84231 personnes inscrites, de 372 questionnaires administrés aux patients dans les structures sanitaires et de 5 patients ayant subi des entretiens. L'analyse des données a été réalisée à l'aide des logiciels CPro 6.2, Survey CTO Collect v2.41 et SPSS 21, et l'exploitation manuelle du contenu audio des entretiens.

Résultats : Le taux de fréquentation des formations sanitaires du district sanitaire de Mfou reste faible : 39% en 2015 et 42% en 2017. Les facteurs associés à la faible fréquentation des formations sanitaires sont : l'absence d'assurance maladie, le milieu rural, la mauvaise qualité de l'accueil, le faible dynamisme des agents de santé communautaire, le coût élevé des soins et services, la nécessité d'avoir un parent ou une connaissance travaillant à l'hôpital et de ne se rendre à l'hôpital que lorsque la maladie semble grave avec un ($P< 5\%$).

Conclusion : La faible fréquentation des structures sanitaires dans le district sanitaire de Mfou reste un problème majeur de santé publique. Elle est associée à de nombreux facteurs pour lesquels l'implication des communautés est nécessaire ainsi que leur prise en compte dans l'élaboration des politiques de santé.

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Partenariat Visant l'Évaluation de l'Impact des Témoignages des Personnes Vivant Avec le VIH/SIDA

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Le témoignage public est une stratégie d'intervention ayant beaucoup de potentiel dans le domaine de la santé.

Des témoignages par des personnes vivant avec le VIH (PVVIH) sont fréquemment utilisés afin de combattre la discrimination, améliorer l'accès aux services et aux soins et communiquer des messages préventifs.

Or, les retombées du témoignage ne correspondent pas toujours aux bénéfices espérés et l'absence d'une façon d'évaluer ses effets est une lacune importante. Profitant de partenariats et d'une infrastructure existants, l'objectif principal de ce projet est de produire des données préliminaires sur l'efficacité des témoignages publics des PVVIH.

Les objectifs spécifiques sont de rassembler des partenaires communautaires et universitaires qui ont développé une expertise dans le témoignage par les PVVIH, de développer une grille de critères pour évaluer l'efficacité de différents types, approches et pratiques de témoignage et de valider la grille à partir d'exemples de témoignage provenant d'une archive existante.

La grille portera sur plusieurs aspects incluant les expériences communiquées, les émotions ressenties, la structure et le vocabulaire utilisé, l'évocation d'une dimension communautaire et le type et la qualité de la réception.

Nous anticipons que ce cadre évaluatif permettra d'augmenter la compréhension des impacts du témoignage pour la santé, la qualité de vie, la

communication interpersonnelle et le changement social.

Le projet fournira une méthode et des outils qui augmenteront le pouvoir d'agir des PVVIH ainsi que les capacités des groupes communautaires et l'efficacité de leurs actions.

Lors d'une phase ultérieure, la grille d'évaluation pourrait être appliquée dans plusieurs contextes et milieux de pratique.

Ultimement, une communication par témoignage plus efficace contribuera à réduire la stigmatisation et la discrimination, améliorer les résultats de santé et la qualité de vie de PVVIH et renforcer la prévention.

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Le Bien Être des Personnes Âgées au Cœur de la Dynamique Entre les Associations de Lutte Contre le VIH et Celles des Maladies Chroniques. Le Cas du Projet VIHeillir Mis en Œuvre au Cameroun et au Sénégal

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Contexte : La PEC des PVVIH a connu un succès énorme avec l'amélioration des ARV ces dernières années. Pour des soins centrés sur la personne telle que défini par les dernières directives de l'OMS, le projet VIHeillir, mis en œuvre depuis 2020 au Cameroun et au Sénégal, connaît une mobilisation remarquable des associations de lutte contre le VIH et celles des maladies chroniques. Offrant, un accompagnement et un suivi de proximité et des activités de prévention communautaires. Elles se sont constituées en partenaire incontournable dans la mise en œuvre.

Matériel et méthodes : Entre mars et décembre 2022, ces associations partenaires ont mené plusieurs activités pour promouvoir la santé, le bien-être et la prévention des maladies chroniques. Services offerts. Des réunions de partage d'expériences, Mise sur pied des groupes de socialisation; Suivi des paramètres cardio-métaboliques, Offre de soins différenciés, Fond de solidarité aux indigents.

Résultats: Des activités communautaires mises en place au Cameroun et au Sénégal ont permis de redonner confiance, prendre conscience de sa maladie et surtout bénéficier d'un suivi personnalisé en communauté. Il s'agit de : 30 Séances d'atelier culinaire organisé au Cameroun ; 62 séances d'activités physiques et sportives; 1082 activités de dépistage et de prévention des maladies chroniques organisées au Cameroun et au Sénégal. En 2022, 995 (650F/345H) personnes ont bénéficié directement des activités de prévention, dépistage et traitement dans les deux pays dont 272 (170F/102H) au Sénégal et 723 (480F/243H) au Cameroun. Parmi ces bénéficiaires, 764 ont effectué leur première visite et 231 sont les anciens bénéficiaires qui sont revenus pour la/les visite(s) de suivi. Le projet a aidé à créer une dynamique, un réseautage entre associatifs. Il s'est créée une mutualisation et partage d'expériences entre les associations de lutte contre le VIH et celles des maladies chroniques les unes expertes en plaidoyer et la mobilisation des ressources les autres expertes dans les maladies métaboliques.

Conclusion: Les témoignages des participants à ce projet prouvent de sa pertinence. Le réseautage crée entre les associations de lutte contre le VIH et celles des maladies chroniques s'avèrent riche et bénéfique pour l'intégration de la prévention et du suivi des maladies chroniques.

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Perfil Epidemiológico dos óbitos Por Virus de Imunodeficiência Humana/Sida em Moçambique Durante Ano de 2019

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Introdução: O HIV/SIDA é um problema de saúde pública no mundo. Em Moçambique a taxa de prevalência actualizada 2021 foi 12,5% em adultos de 15-49 anos de idade, 40% das mortes que ocorreram em adultos estão relacionados ao HIV. Objectivo deste trabalho foi descrever o perfil epidemiológico dos óbitos por HIV em Moçambique em 2019.

Metodologia: Foi realizado um estudo secundário, com dados do Sistema de Vigilância de Eventos Vitais e Causas de Morte (COMSA), 2019. Foi critério de inclusão, todos os óbitos por HIV registados no COMSA. Usou-se método automatizado para determinação da causas de morte por HIV (InterVA). Para análise dos dados foi usado o método de análise avançada. Análise multivariada foi considerado, qui-quadrado $p < 0.05$ para significância estatística.

Resultados: Foi registado 3364 óbitos em 2019, dos quais 18,7% (632/3364) foram óbitos por HIV classificados por Inter-VA 44,8% (283/632) os seus familiares referiram que seu ente querido teria realizado um teste com resultado positivo de HIV antes da sua morte, e 52,9% (334/632) eram do sexo feminino. Jovens e adultos de 30+ anos foram mais afectados, 18,7% (118/632) entre 30-39 anos, 15,1% (95/632) entre 40-49 anos e 36,4% (230/632) para 50+ anos. Escolaridade, 57,2% (361/632) sem nível de escolaridade, 30,7% (194/632) nível primário. Em relação a residência, verificou-se que 69,4% (438/632) eram da área rural. Dos factores determinantes para ocorrência dos óbitos por HIV, 67,9% (425/632) ocorreram em domicílios; 28,1% (177/632) tinham um índice de riqueza muito alto, 19,6% (124/632) alto. Na análise multivariada, verificou-se associação estatisticamente significativa entre as faixas etárias e o resultado positivo de HIV, sendo 25-29 anos (OR=5,1; 95% [CI=2,478-10.8]); 30-39 anos de idade (OR=6,5; 95% [CI=3,7-11,4]) e faixa etária de 40-49 anos (OR= 4,7; 95% [CI=2,7-8,3]). Sexo, escolaridade, estado civil, distância entre a unidade sanitária e domicílio, não estiveram associados ao resultado positivo de HIV.

Conclusão: Maior proporção de óbitos por HIV em jovens. Mais de metade dos óbitos tinham índice

de riqueza alto e não tinham um diagnóstico prévio, o que sublinha a necessidade de reforçar o diagnóstico precoce de HIV’.

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HIV Prevalence and Associated Risk Factors Among Young Gay, Bisexual and Other Men Who Have Sex With Men in Nairobi, Kenya: A Respondent-Driven Sampling Survey

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Background: Young gay, bisexual and other men who have sex with men (MSM), are a key population at higher risk of HIV infection yet they are underrepresented in research. We conducted a bio-behavioral survey to estimate HIV prevalence and associated risk factors among tertiary student MSM (TSMSM) in Nairobi, Kenya.

Material and Methods: Between February and March 2021, 248 TSMSM aged ≥18 years who reported sex with another man in the past year participated in a respondent-driven sampling (RDS)-based cross-sectional survey. Participants completed an electronically self-administered behavioral survey and provided a blood sample for HIV antibody testing, alongside urine, anorectal and oropharyngeal swabs for pooled testing of sexually transmitted infections using a multiplex nucleic acid amplification test. RDS-Analyst v.0.72 and Stata v.15 software were used for data analysis. Differences in proportions were examined using chi-square (χ^2) test, and unweighted multivariate logistic regression was used to assess factors associated with HIV infection.

Results: HIV prevalence among study participants was 8.3%, whereas the weighted prevalence was 3.6% (95 % CI: 1.3% - 6.0%). Median ages of participants, and at self-reported first anal sex with a man were 21 and 18 years, respectively. A

majority (89.3%) of TSMSM owned a smart phone, 46.5% had ever used a geosocial networking app for MSM such as Grindr® to find a sex partner. Almost three-quarters (71.3%) had >1 male sex partner in the year before the survey. A third (34.3%) did not use condoms with their last sex partner, 21.2% received money from their last sex partner and 40.9% had taken alcohol/another drug during their last sexual encounter. HIV infection was associated with studying in private institutions (adjusted odds ratio[AOR]=6.0; 95% CI: 1.2-30.0, p=0.027), preferring a sex partner of any age – younger, same or older (AOR=5.2; 95 CI: 1.1-25.2, p=0.041), last sex partner being >25 years (AOR=6.4; 95% CI: 1.2-34.6, p=0.030), meeting the last sex partner online (AOR=4.2; 95% CI; 1.1-17.0, p=0.043) and testing positive for Neisseria gonorrhoea (AOR=7.8; 95% CI: 2.0-29.9, p=0.003).

Conclusion: HIV prevalence among TSMSM in Nairobi is alarmingly high, demonstrating a need for tailored prevention and control interventions for this young key population.

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HIV Incidence and Prevalence Among Adults Aged Fifteen Years and Older in Mozambique: Results From a Population-Based HIV Impact Assessment (INSIDA 2021)

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Background: Despite recent gains in HIV prevention and treatment, Mozambique continues to have among the highest HIV burdens globally. In 2015,

HIV prevalence was estimated at 13.2% (95%CI: 11.9-14.4) among adults aged 15-49 years, while HIV incidence was estimated at 0.51% (95%CI: 0.25-0.79). The 2021 Population-Based HIV Impact Assessment (INSIDA 2021) measured HIV prevalence and incidence among adults aged 15 years and older in Mozambique.

Material and Methods: INSIDA 2021 was conducted from April 2021 to February 2022 as a nationally representative four-stage cluster survey of 11,375 randomly selected households from 311 enumeration areas. Eligible respondents aged 15 years and older who provided written informed consent were interviewed using a standard questionnaire. Home-based HIV counselling and testing was conducted using rapid tests following national guidelines. Geenius HIV confirmatory testing was done at satellite laboratories to estimate HIV prevalence, and HIV incidence was estimated using a recent infection testing algorithm, comprising HIV-1 LAg-avidity assay, viral load, and antiretroviral detection. Analyses were weighted to account for the complex survey design in SAS 9.4.

Results: Of the 19,912 eligible adults aged 15 years and older, 17,105 were interviewed and, of those, 84.7% were tested for HIV. HIV prevalence was 12.5% (95%CI: 11.5-13.4) and was higher in women (15.0% [95%CI: 13.9-16.1]) than in men (9.5% [95%CI: 8.5-10.6]). It varied by age and sex, ranging from 4.5% in women aged 15-19 to 26.6% in women aged 35-39, and from 1.6% in men aged 15-19 to 19.6% in men aged 40-44. HIV prevalence varied by province, ranging from 7.9% (95%CI: 6.0-9.8) in Manica to 20.9% (95%CI: 16.7-25.0) in Gaza. National HIV incidence was 0.43% (95%CI: 0.23-0.63): 0.61% (95%CI: 0.29-0.93), among women and 0.24% (95%CI: 0.02-0.46) in men.

Conclusion: HIV prevalence among adults in Mozambique has remained at an elevated level, and women continue to be disproportionately affected. National HIV incidence continues to be high despite national efforts to enhance HIV prevention. Data from INSIDA will guide a multi-sectoral HIV response to enhance and accelerate scale up of prevention efforts, prioritize resources for HIV treatment, and ensure community engagement to address remaining disparities.

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A Force to Reckon With: Attrition of Children and Adolescents in HIV Care in Uganda, 2017 - 2021

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Background: Lack of robust estimates of children and adolescents living with HIV (CALHIV) at any given period limits progress in epidemic control and forecasting demand for HIV commodities. We investigated the contribution of aging out, loss from care and death on the number of children and adolescents in care to inform robust HIV programming projections.

Material and Methods: We conducted a quantitative study and reviewed secondary data from electronic medical records (EMR) in selected high-volume health facilities across the country. We included all CALHIV who were active in care during each of the years from 2017 to 2021 and we collected data on: age, gender, date of enrolment in care and the status in care as of August 2022. This data was collected in excel and analysed using STATA.

Results: The study found that the number of CALHIV ranged from 39,227 in 2017 to 49,835 in 2021, with more females than males (1.3:1, P=0.001). During 2017-2020, there was an average annual increase of 2% (P=0.001) of CALHIV. Each year, an average of 16,073 CALHIV left care, most due to loss to follow up (56%) with the least contributor being death (5%). The proportion of CALHIV leaving care due to loss to follow up or transfer out decreased by 1% during 2017 – 2021 (P<0.05) and the average mortality remained at 2% each year. On average, 7% of adolescents that aged out each year. The median survival time for CALHIV in care during the study period was 4 years and was similar for males and females (P=0.170). Children aged 6 – 9 years and adolescents 10-14 years had longer median survival time in care compared to CALHIV of other age bands (P=0.05).

Conclusion: Loss to follow up from care was the biggest contributor to reduction of CALHIV in care and there was a paltry reduction in the losses during each year. This is despite the efforts and investments in place to mitigate losses to follow up in this sub-population group. This study highlights the urgent need for review of current measures to curb loss to follow up of CALHIV in Uganda.

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Differentiated Service Delivery (DSD): Eligibility in Programs for the Prevention of Mother-To-Child HIV Transmission (PMTCT) and Predictors of Virologic Failure

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Background: The DSD model provides a reduced frequency of clinic-based visits and medication to people who are clinically stable on antiretroviral therapy (ART). This approach allows healthcare resources to focus on people who need intensive clinical care. It is important to understand to optimize DSD approaches for women enrolled in PMTCT programs. We assessed potential DSD eligibility and risk factors for virologic failure among Kenyan women living with HIV in PMTCT programs.

Material and Methods: This analysis used data from the completed Mobile WACHX trial (NCT02400671). Being potentially DSD eligible was defined as on ART ≥ 6 months with a suppressed HIV viral load (VL) (< 1000 c/mL) within the past 6 months. Virologic failure was defined as having unsuppressed VL (≥ 1000 c/mL) afterwards. Predictors were determined by site-adjusted log-binomial models.

Results: Among 761 women, 459 (60.3%) started ART before pregnancy. The median number of VL tests throughout 24 months postpartum was 5 (IQR 3-6) and the median time interval between testing

was 5.8 months (IQR 4.0-7.3). During all follow-up time in study, 86.3% women were eligible at some point for DSD based on the criteria among adults living with HIV. Most women were DSD-eligible at early postpartum periods, and the proportions of eligibility were higher among those on ART pre-pregnancy than those newly on ART in pregnancy (at 6 weeks postpartum: 96.4% vs. 88.2%, $p=0.008$; at 6 months postpartum: 96.3% vs. 88.4%, $p=0.008$). Among women who were DSD-eligible at 6 months, most maintained viral suppression to 24 months, and the proportion was higher among those on ART pre-pregnancy than those newly on ART (86.8% vs. 77.8%, $p=0.05$). Younger age, depression, abuse in the last year, drug resistance in pregnancy, low IMB score, and partner tested for HIV were associated with higher rates of virologic failure. ART initiation before pregnancy had a for with lower rates of virologic failure (PR 0.74, 95%CI 0.54-1.02; $p=0.06$).

Conclusion: Most women in PMTCT programs were eligible for DSD services, particularly if starting ART before pregnancy. Incorporating consideration of mental health, abuse, and IMB scores may be useful in optimizing DSD eligibility in the context of PMTCT.

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Assessing the Knowledge and Effectiveness of HIV Self-Testing in the Buea Health District, South West Region, Cameroon

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Background: In sub-Saharan Africa, HIV self-testing has rapidly gained acceptance as an effective strategy to reach many undiagnosed and first-time testers. However, there is little documented data on the knowledge among intended-use population. Cameroon intensified HIV Self-testing in 2020 to reach key populations (men who have sex with

men, female sex workers, intravenous drug users, transgender) and their partners.

Material and Methods: A mixed method study (cross-sectional and retrospective) was conducted in the Buea Health District. Participants were randomly sampled and semi structured questionnaire on the knowledge of HIV self-testing was administered. Records on HIV self-testing from September 2020 to May 2021 were reviewed from four health facilities. The study was conducted between 1st March and 26th July 2021, under ethics approval by the Institutional Ethics Review Board of the Faculty of Health Sciences, University of Buea.

Results: 277 participants were enrolled in cross-sectional study, mean age was 26.92±6.87, females 69%, students 52%, tertiary level of education (75.8%). 35.7% reported to have self-tested before, 88.9% used Alere Determine™ HIV-1/2 test strips to self-test. 39.4% had previously heard of HIV self-testing, and mostly from social media, 85.6% would use a kit if given, 76.9% desired kits should be made available to the general public, 67.3% would recommend it to someone. Concerning willingness to pay, 61% desired kits should be free and 14% would buy for 1USD. Of the 236 records reviewed, only oral fluid HIV self-test were used, 60.6% were sexual partners of people living with HIV, 23.7% key populations (KP), 19.1% partners of KP, and 17.8% partners of pregnant women. 55.5% were unassisted and phone calls was identified as the most used means of communicating results after self-testing (75.4%). Return rate after self-testing was 74.2% with positivity rate of 9.1%, 68.8% went for confirmatory testing and 72.7% tested positive after confirmatory test. Linkage to care and treatment was 100%.

Conclusion: HIV self-testing is an effective strategy that can play the role of a triage test to guide the use of HIV testing services. Though there exist some knowledge insufficiencies, this can be complemented while delivering the test kit.

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Experiences of Female Sex Workers Who Started Selling Sex as Minors in Eswatini

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Background: Eswatini has the highest HIV prevalence among the population as a whole and among female sex workers (FSWs) specifically. For a variety of reasons, including economic hardship, some FSWs start selling sex as minors. Minors selling sex are likely to have complex health issues and needs that may persist into adulthood. Many FSWs across sub-Saharan Africa start selling sex while underage and may experience negative health outcomes compared to FSWs who start as adults.

Material and Methods: In 2021, 676 women ages 18 and older who earned the majority of their income in the past 12 months from selling sex were recruited through respondent-driven sampling in Eswatini. They completed a structured questionnaire and were tested for HIV. Analysis was conducted to compare participants who reported their age of initiation of selling sex at <18 years old to those whose age of initiation was 18+.

Results: Of the FSW participants, 15% (102/676) started selling sex as minors ages 13–17. Of these individuals, 68% had experienced the death of one or both parents before they started selling sex. Compared with those who started selling sex at 18+, they had different outcomes on condom negotiation, alcohol use, reproductive health, and experiences of violence. FSWs who started selling sex as minors had higher alcohol dependency and more challenges with condom negotiation with new and regular clients. Among reproductive health issues, FSWs who started engaging as minors had significantly worse outcomes on issues of unwanted pregnancy, abortion, and efforts to avoid pregnancy. Experiences of violence were also higher among those who started as minors.

Conclusion: Selling sex as a minor has potentially lasting effects on health outcomes. However,

because sex workers are, by definition, 18 and older, programs targeting FSWs miss opportunities to provide much needed services to those who start selling sex as minors. Strategies are needed to safely deliver a package of services tailored to the needs of this population.

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Sources and Distribution of New HIV Infection in Nigeria: Findings From the 2020 Mode of HIV Transmission Study

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Background: Understanding the country's HIV epidemic aids better decision making, identifies priorities and sets targets for effective HIV prevention, care, support and treatment programs. We conducted a mode of HIV transmission study to support efforts to prevent new HIV infections by providing information about where new infections are occurring by population group and location.

Material and Methods: We applied the Incidence Patterns Model (IPM) which uses prevalence and behavior information from surveys and calibrates to official estimates of the total number of new infections. Information on population size and characteristics was drawn from the 2018 Nigeria HIV/AIDS Indicator Impact Survey, and 2018 population size and prevalence estimates for female sex workers (FSW), men who have sex with men (MSM) and people who inject drugs (PWID). IPM applied a Bayesian framework to estimate the distribution of new infections that best matches these data and official estimates of the total number of new adult infections.

Results: The largest number of new HIV infections was estimated to occur among Never Married Females and Never Married Males in the adult population, with the mean age of the never married men being about 25 and 24 for women. The next largest number of new infections occurred among FSW and MSM. These four population groups accounted for about 91% of all new infections among adults. Key populations (FSW, MSM, PWID)

were estimated to account for about 11% of new infections although they represent less than 2% of the total population. New child infections due to mother-to-child transmission represented the second source of new infection, accounting for 22% of all new infections while in many states the contribution was even larger. Never Married Females had the largest contribution in 84% (31/37) states and Never Married Males 5% (2/37).

Conclusion: The sources and distribution of new HIV infections varied by population group and state. A larger proportion of new infections generally occur among young people, FSW and MSM. A deep dive to further ascertain the factors associated with the dynamics of the infection among these identified groups will aid efficient planning and the design of cost-effective interventions.

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Spatial Clustering and Predictors of High HIV Burden in South Africa

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Background: South Africa still has one of the most significant burdens of the human immunodeficiency virus (HIV) epidemic globally. Therefore, evaluating the key drivers of the HIV burden in South Africa and exploring the spatial distributions of high HIV prevalence are essential for relevant interventions for HIV prevention and control.

Material and Methods: The data for this study was a cross-sectional representative sample of South African households conducted in 2016. The outcome was an individual that tested positive for HIV infection during the survey. The geospatial data of the respondents were also collected. The multivariate analyses of associations between HIV infection and independent variables at (1) sociodemographic level, (2) behavioral level, (3) provincial level and (4) all factors were undertaken with results reported as odds ratios (ORs) with their corresponding 95% confidence intervals (CIs).

Results: The prevalence of HIV burden among the study participants was 22.4% (95% CI 21.2 – 23.6). At both sociodemographic and behavioral levels, married or separated individuals, those aged 25-34 years old, and respondents with concurrent sexual partners had higher odds of being HIV positive. In contrast, male respondents and those living in rural areas were less likely to be HIV-positive. At all factors level, married respondents had significantly higher odds of being HIV positive (OR 8.05, 95% CI 2.56 - 25.31), and those who were divorced, separated, or widowed (OR 5.07, 95% CI 1.42 - 18.08) compared to those who had never been married. In addition, the odds of having HIV-positive status were higher among 25-34 years old respondents compared to 15 -24 years aged respondents (OR 4.81, 95% CI 1.74 - 13.32). Among the male respondents, the odds of being HIV-positive were lesser than that of female respondents (OR 0.10, 95% CI 0.04 - 0.23). Identified HIV high-burden hotspots are the big cities such as Cape Town, Johannesburg, Durban, Port Elizabeth, and Bloemfontein.

Conclusion: HIV control measures like HIV/AIDS awareness campaigns and antiretroviral services should be targeted at the identified hotspot locations. In addition, the control programs should focus on key determinants such as being married, separated, divorced, or widowed and middle-aged women.

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Impact of HIV Prevention, Care and Treatment Programs on the HIV Epidemic Among Key Populations in Nigeria: National Cross-Sectional Survey

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Background: Key populations including female sex workers, men who have sex with men, Transgender persons, and people who inject drugs and their sexual partners contribute a large share to the HIV burden in Nigeria. While much investments and

progress have been made to reach KPs with HIV prevention and control services, the country deemed it critical to assess her national HIV response effort towards KPs and controlling the HIV epidemic in Nigeria.

Material and Methods: In 2020, we conducted a cross-sectional survey among key populations across twelve states in Nigeria. A multi-stage cluster sampling approach was used. Two states were selected in each of the six geo-political zones. Socio-demographic and behavioral data were collected using structured questionnaires. Blood samples were drawn from respondents after obtaining consent and tested for HIV following the national HIV algorithm. STATA was used for data analysis.

Results: We surveyed 4,974 Female Sex Workers (FSWs), 4,397 Men who have sex with Men (MSM), 4,190 Transgender persons (TGs), and 4,414 People who inject drugs (PWIDs). Age of sex debut was low, with a mean age of about 17 years for both FSWs and MSMs; 15.9 years for TGs and 17.9 years for PWIDs. HIV prevalence among MSM, PWID, FSW and TG was high, at 25%, 10.9%, 15% and 29% respectively. Risk perception of contracting HIV remains low across all KP groups despite high knowledge of HIV transmission modalities. Consistent condom use, and exposure to HTS and STI services remained low across all KP groups. PrEP and PEP exposure and uptake were very low, with FSWs and PWIDs being the least exposed and also had the least uptake compared with MSM and TGs.

Conclusion: There is still high HIV prevalence among KPs. The impact of HIV prevention and control interventions amongst KPs seem not to have complemented the HIV prevention efforts the country have made for KPs over the years which is worrisome. These findings call for a review of the national KP program design, service delivery packages and an examination of how KPs are being reached to understand their specific needs and how they can be reached better.

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Prevalence of Common Sexually Transmitted Infections and Bacterial Vaginosis Among Symptomatic Individuals in High-Risk Areas or Attending Department of Health Clinics in Soshanguve, South Africa

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Background: Sexually transmitted infections (STIs) and bacterial vaginosis (BV) are serious public health issues that compromise quality of life. Due to syndromic treatment of STIs, little is known about the distribution of STIs and BV in Soshanguve, a densely populated peri-urban area with high disease burden. Understanding the distribution of common bacterial STIs and BV will better inform the Department of Health towards reducing their burden in this population. We aimed to investigate the prevalence of bacterial STIs, BV and HIV among symptomatic individuals.

Material and Methods: Symptomatic participants were enrolled from high-risk areas and public health facilities in Soshanguve, South Africa, between May–September 2022. Urine samples (male and female) and/or vaginal/genital swabs (female only) were self-collected by each participant. Two panels of tests, a semi-automated Seegene PCR workflow with Allplex STI essential and BV plus assay, were used for the screening and detection of bacterial STIs and BV. For HIV testing, blood samples were collected and a rapid test for HIV antibodies was performed using the Alere Determine™ HIV-1/2 Ag/Ab Combo test. Univariate analysis was performed to determine prevalence of STIs, BV and HIV. Bivariate analyses were performed for sub-groups and Pearson chi-square was used to determine statistical significance.

Results: A total of 392 participants were enrolled; 361 (92%) were female and 31 (8%) were male. The overall prevalence of common STIs and BV was 27% and 67%, respectively. Prevalence among males and females was 26 % and 15% for chlamydia, 47% and 4% for gonorrhoea, 0.0% and 11% for trichomoniasis, respectively. Twenty-four percent of females and 16% of males tested positive for HIV. For STIs, younger age of female (<24 years vs >25 years) was significantly associated with Chlamydia ($p < 0.001$) and older age with HIV ($p < 0.001$). HIV status was significantly associated with trichomoniasis ($p = 0.038$).

Conclusion: There is a high prevalence of common STIs, BV and HIV in this community, particularly among younger women. This high prevalence of diseases places a large burden on the public health system. Urgent public health intervention is required for point-of-care testing and immediate treatment for participants and their partners.

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HIV Sero-Prevalence Among Vulnerable Older Women Attending a Rural Clinic in Central Uganda: Policy Implications and Recommendations

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Background: Older women in sub-Saharan Africa are at a greater risk for HIV due to their biological, sociocultural, and economic vulnerabilities. We assessed HIV sero-prevalence and associated factors among vulnerable older women attending a rural clinic in central Uganda.

Material and Methods: We conducted a cross-sectional study using routinely collected data (January 2019 and December 2022) at a rural clinic providing health care services to vulnerable older women aged ≥ 50 years old. Vulnerability was

defined as the risk of falling into poverty (inability to meet the basic necessities of life, poor access and quality of social services and inadequate infrastructure). Eligible and interested women were consented and offered HIV counselling and testing. Data on socio-demographic and clinical characteristics were collected. Multivariable logistic regression was used to identify factors associated with HIV sero-prevalence.

Results: Seven hundred and seventy-nine women were included in the analysis; mean age was 68 (SD ± 10) years old. More than a third 279 (35%) of the women were aged between 60-69 years and more than a half 406 (52%) had attained primary education. Almost two thirds 436 (56%) reported moderate vulnerability. Overall HIV sero-prevalence was 74 of 779 (9.5%), and of these almost half 34 (46%) of the women had hypertension. In adjusted multivariable analysis, HIV sero-prevalence was more likely among women aged 50-59 years old (aOR=15.28; 95% CI: 5.0 - 47.18) and those critically vulnerable (aOR =6.97; 95% CI: 3.08 - 15.77).

Conclusion: HIV sero-prevalence among older women was higher than the national average of 5.3%. HIV sero-prevalence was associated with age category 50-59 years and critical vulnerability. This suggests a critical need for prevention interventions to reduce the disease burden in this population. Socio-economic strengthening interventions directed toward this population should be recommended, as well as supporting them to access HIV care and support services.

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Molecular Epidemiology of Human Papillomaviruses in Ethiopia; A Systematic Review

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Background: Etiologically associated with infection by high-risk Human papillomaviruses (HR-HPVs), cervical cancer is one of the leading causes of cancer-related deaths globally and this is also true in Ethiopia. To develop efficient vaccination and HPV-based cervical cancer screening approaches, data on genotype distribution of HPVs is vital. Hence, the study was aimed to review HPV genotype distribution in Ethiopia.

Material and Methods: Research articles were systematically searched using comprehensive search strings from PubMed/Medline and SCOPUS. Besides, Google Scholar was searched manually for grey literature. The last search was conducted on 18 August 2021. The first two authors independently appraised the studies for scientific quality and extracted the data using Excel sheet. The pooled HPV genotype distribution was presented with descriptive statistics.

Results: We have included ten studies that were reported from different parts of the country during 2005 and 2019. These studies included 3,633 women presented with different kinds of cervical abnormalities, from whom 29 different HPV genotypes with a sum of 1,926 sequences were reported. The proportion of high-risk, possible/probable high-risk and low-risk HPVs were at 1,493 (77.5%), 182 (9.4%) and 195 (10.1%), respectively. Of the reported genotypes, the top five were HPV 16 (37.3%; 95%CI: 35.2-39.5%), HPV 52 (6.8%; 95%CI: 5.8-8.0%), HPV 35 (4.8%; 95%CI: 3.9-5.8%), HPV 18 (4.4%; 95%CI: 3.5-5.3%) and HPV 56 (3.9%; 95%CI: 3.1-4.9%). Some of other HR-HPV groups include HPV 31 (3.8%), HPV 45 (3.5%), HPV 58 (3.1%), HPV 59(2.3%), and HPV 68 (2.3%). Among the high-risk types, the combined prevalence of HPV 16/18 was at 53.7% (95%CI: 51.2-56.3%). HPV 11 (2.7%; 95%CI: 2.1-3.5%), HPV 42 (2.1%; 95%CI: 1.5-2.8%) and HPV 6 (2.1%; 95%CI: 1.4-2.7%) were the most common low-risk HPV types.

Conclusion: We noted that the proportion of HR-HPV types was higher and HPV 16 in particular, but also HPV 52 and 35, warrant special attention in Ethiopian's vaccination and HPV-based cervical screening program. Additional data from other parts of the country where there is no previous report are needed to better map the national HPV genotypes distribution of Ethiopia.

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Management of ShangRing Displacements Under the Expanding Malawi HIV/AIDS Prevention With Local Organizations Working for an Effective Epidemic Response (EMPOWER) VMMC Project. Lessons Learnt

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Background: Voluntary Medical Male Circumcision (VMMC) reduces HIV risk from unprotected heterosexual exposure by 60%. The 80% VMMC coverage requirement among men 15-49 years to achieve a prevention effect, has pushed VMMC programs to adopt safer, faster MC innovations. MC devices are safe and fast, but adverse events do occur. We share lessons learned from four PSI-EMPOWER device-related AEs.

Material and Methods: The project team responded to the displacements within 24 hours, as with all AEs. The PSI-EMPOWER QA team, MoH, audited the cases independently but collaboratively with comparable methods. It involved reviewing client files, interacting with service providers at the VMMC clinic, and visiting clients' homes. The project implemented a 3-week mentorship program for providers, strengthened counseling, and used diclofenac rather than paracetamol. The collected data was analyzed to determine the causes of ShangRing displacements and lessons for managing AEs.

Results: Since adoption of SR in October 2020, PSI-EMPOWER project has completed 20,860 placements with 4 (0.02%) displacements, all of which occurred in quick succession in 2020. Two of the four displacements were self-removals, while the other two were self-displacements. The two clients with self-removals had similar risk factors. They both had sex after MC, removed the ring due to pain, both clients were under the influence of

alcohol and did not receive adequate post-operative counseling. The primary cause of the two non-self-displacements was insufficient provider skills in ring placement.

Conclusion: Our findings suggest that prompt response to the displacements enabled affected clients to receive additional care and avoid further injuries. Displacement risk factors include; alcohol, being sexually active, pain and low provider confidence. Adequate counseling of clients, continuous improvement programs for providers and post-operative pain management in patients using the ShangRing device with stronger analgesic than paracetamol have been shown to be effective in preventing displacements.

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Social Determinants of HIV/AIDS Mortality in Mozambique, SIS-COVE 2019-2022

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Background: Mozambique is one of the countries with the highest prevalence of human Immunodeficiency Virus (HIV) worldwide. Although antiretroviral treatment (ART) is available and free of charge in all settings, HIV was described as the main the main cause of adults deaths in Mozambique in 2008. There is not much evidence about mortality and its determinants among people living with HIV in southern Africa, including Mozambique. The aim of this study was to analyse the social determinants of mortality in people with HIV in Mozambique.

Material and Methods: Since March 2018, community agents have been trained in the surveillance system for vital events and causes of death (SIS-COVE), which has been reporting deaths in 700 randomly selected clusters in all provinces of Mozambique, using a mobile phone. To identify the cause of death and the social determinants of death, the verbal and social autopsy (VASA) questionnaire is administered to the relatives of the

deceased. We included in this analysis all 15 to 49 years old deceased with HIV/AIDS as the probable cause of death according to the VASA questionnaire captured between 2019 and 2022. Data analysis was performed using STATA 17 and a $p < 0.05$ was considered statistically significant. The analysis was performed using Pearson's chi-square test.

Results: From the 1908 deaths captured in youth and adults, 987 (52%) had HIV/AIDS as the probable cause of death. Almost half (48% - 472/987) of those HIV/AIDS deaths occurred in the central region of the country and 69% (677/987) were from rural areas and about 47% (460/987) would take 2 hours to reach the health unit. HIV/AIDS community deaths represented 67% (665/987) of all HIV/AIDS deaths. Those with the highest wealth quintile ($p=0.026$) and high level of education ($p=0.002$) were the ones who used antiretroviral treatment (ART) the most before the death.

Conclusion: Although ART is available countrywide in Mozambique, HIV/AIDS remains the major cause of deaths. Interventions aiming to reduce HIV/AIDS-related mortality in Mozambique should target specially the most socially disadvantaged communities.

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Health Practitioners' Experiences, Perceptions, and Knowledge of Treatment Protocols for the Monkeypox Outbreak in Nigeria

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Background: The monkeypox viral infection has caused a significant global health burden, but information about its impact in the workplace on healthcare practitioners (HPs) in African endemic countries is sparse. In our study, we investigated the experiences, opinions, and knowledge of healthcare practitioners about the monkeypox outbreak response and its impact on the workplace in Nigeria.

Material and Methods: This was a cross-sectional cohort study of an internet-based survey of HPs ($n = 875$) in Nigeria, conducted between March and September 2022. The survey collected relevant questions on participants' characteristics, experiences, perception, and treatment protocol knowledge of the monkeypox, and its impact on participants' workload and wellbeing in the workplace. Multivariate logistic regression analysis was used to assess the predictors of treatment protocol knowledge.

Results: Of the participants, 14.7%, 17.1%, and 20% of HPs reported involvement in clinical work, research, and policy work regarding monkeypox, respectively. Fifty percent of the HPs involved in clinical work were physicians, while sixty percent of those involved in research were pharmacists. Only 43.4% of HPs had good treatment protocol knowledge, and only 31.4% had seen a suspected or confirmed case of monkeypox infection. Prior attendance at monkeypox workshops and conferences, an occupational role, and prior sensitization at work were all predictors of good treatment protocol knowledge. Approximately 28.6% of HPs reported that the monkeypox outbreak affected their workload; 7.1% reported that it affected their wellbeing; and 42.9% expressed a willingness to work overtime in response to a monkeypox pandemic. HPs also recommended that individuals in most need of the monkeypox vaccine be the immunodeficient (77.1%), children (77.1%), the elderly (65.7%), and healthcare workers (57.1%).

Conclusion: The monkeypox outbreak response has affected HPs involved in work related to the outbreak, and knowledge of treatment protocol is relatively low among HPs. Increasing support and knowledge will be crucial in improving HPs' willingness and capacity for monkeypox response and surveillance.

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Trends in HIV Prevalence Among Brothel-Based Female Sex Workers and Non-brothel-Based Female Sex Workers in Nigeria: A Comparative Analysis

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Background: Female sex workers (FSW) contribute significantly to the burden of HIV in Nigeria. FSW are usually subtyped as brothel and non-brothel based, this characterization is usually inadequate to guide programming. This paper aims to provide insight into the HIV epidemic among FSW in Nigeria over the years, by focusing on the differences by subtypes, years and age.

Material and Methods: We conducted a 3-year descriptive analysis of the trend in HIV Prevalence among female sex workers in Nigeria based on the data generated from three rounds of integrated biological and behavioral surveillance surveys (2010, 2014 and 2020) in the country. The study populations were female sex workers (FSW) with sub-typologies - brothel-based female sex workers (BBFSW) and non-brothel-based female sex workers (NBBFSW). Excel was used to analyze the HIV prevalence trend by year (2010,2014, 2020) and age groups (15-19,20-24,25-49) for the FSW sub-typologies.

Results: The HIV prevalence for BBFSW within age group 15-19 years markedly declined from 24.3% (2010) to 3.2% (2020). Among 20-24 years BBFSW, prevalence consistently declined from 20.3% (2010) to 8.5% (2020). BBFSW 25-49 years old also had a significant decline in HIV prevalence from 30.8% (2010) to 20.5% (2020). Among NBBFSW there has also been a steady decline in prevalence from 2010 to 2020 for age group 20-24 years. However, there was a marginal increase for NBBFSW within age group 15-19 years from 6.4% to 7.2% but for the age group 25-49 years the HIV prevalence showed a marked increase of 18.6% in 2020 from a dip of 9.9% in 2014.

Conclusion: The HIV prevalence among NBBFSW showed an upward trend across most age groups studied, with the age group 25-49 years having the highest prevalence and increase. However, there has been a marked decline in HIV prevalence among BBFSW across the three age groups. Determining factors associated with the rising HIV prevalence among NBBFSW, particularly those within the age group 25-49 years is very key to informing the design of interventions and programs aimed at reversing the trend in HIV prevalence among them.

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Population Mobility and the Development of Botswana's Generalized HIV Epidemic: A Network Analysis

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Background: HIV epidemics in sub-Saharan Africa are generalized: in these type of epidemics, the epidemic is dispersed throughout the country in the general population. Populations need to be mobile for generalized epidemics to develop. We present the first analysis of the role of population-level mobility in the development of a generalized HIV epidemic. We focus on Botswana which has one of the most severe HIV epidemics worldwide. The country reported its first AIDS case in the early 1980s. Since then, the epidemic has become generalized and hyper-endemic: in 2021, prevalence was 21% in adults 15–64.

Material and Methods: We hypothesize that, during the development of Botswana's epidemic, there was a high level of population mobility, and substantial rates of rural-to-urban and urban-to-rural migratory flows. We test this hypothesis by conducting a network analysis using a historical time series of micro-census data from Botswana. The time series covers the time from when the epidemic was first apparent to when it stabilized in 2011. During this time, there was intense urbanization: Botswana was predominantly rural in

1981, but had become predominantly urban by 2011. Our methodology enables the identification of patterns of connectivity amongst districts, and important in-flow and out-flow migration hubs.

Results: We found that – over a 30-year time period – the population of Botswana was extremely mobile (~10% of the general population changed residency annually), the type of migrants remained constant (evenly split by gender with younger people more likely to migrate), complex countrywide migration networks connected urban and rural areas throughout the country, and there were very high rates of both rural-to-urban and urban-to-rural migratory flows. Notably, we found mining towns (where the epidemic was first identified) were both important in-flow and out-flow migration hubs; consequently, mining towns had a very high turnover of residents.

Conclusion: Our results suggest the epidemic could have been simultaneously seeded multiple times in districts throughout the country, and there were important transmission corridors. Our results support our hypothesis, and provide one explanation for the development of Botswana's generalized HIV epidemic. We recommend that HIV response programming should consider the potential impact of mobility.

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Effectiveness of Routine Data Quality Assessments on Viral Load Coverage

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Background: The UNAIDS Global strategy aims to achieve the 95-95-95 targets, which include achieving viral suppression for 95% of people living with HIV by 2025. To achieve this goal, the strategy focuses on increasing access to and uptake of viral load testing, strengthening health systems to ensure the timely availability of viral load results and improving the use of viral load data for clinical decision-making and programmatic monitoring. Our programmatic intervention aims to test the

effectiveness of Routine Data Quality Assessments (RDQA) in improving viral load coverage.

Material and Methods: We conducted RDQAs for 3 months at Reach Out Mbuya Community Health Initiative Banda while taking corrective actions as needed. We obtained a random sample of clients using Health Management Information Systems (HMIS) tools and compared the ART cards of the selected clients to the Electronic Medical Records (EMR) to verify the clients who had undergone viral load testing. We then compared the pre-intervention and post-intervention viral load coverage and evaluated the changes that occurred as a result of the RDQA. After the assessment, we discussed and addressed recommendations and gaps that were identified.

Results: At baseline, 30% of sampled Health Management Information (HMI) documents had varying results when compared to the EMR and 28% of the sampled patient cards had varying bleeding dates for viral load testing. However, with the implementation of RDQAs, we observed a data concordance of 98% between HMI and EMR and a 100% completeness in the Health Management Information Systems (HMIS) with missing data found less frequently in follow-up RDQAs. We have learned that handwritten errors are the largest contributors to information inaccuracies among health professionals and that continuous verification of clients' viral load results is critical at every service point in the HIV care continuum. Additionally, we have found that involving stakeholders in the design and implementation of data quality assessments leads to greater buy-in and adherence to established protocols.

Conclusion: RDQAs are crucial for ensuring the accuracy and reliability of viral load coverage data. RDQAs ultimately result in better decision-making and treatment outcomes for the clientele.

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Dissatisfaction With General Health Services Is Negatively Associated With Uptake of HIV Testing Among Men in Malawi: A Community-Representative Survey

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Background: Across sub-Saharan Africa, men are less likely to know their HIV status than women, leading to later treatment initiation and higher HIV-related morbidity and mortality. Negative experiences with HIV services are qualitatively shown to discourage men's future use of HIV services, however little is known about how experiences with general health services affect men's use of HIV testing. This question is important as national programs further integrate HIV and general health services and seek to understand men's health holistically.

Material and Methods: We used data from a 2019 community-representative survey of men in Malawi to understand frequency and cause of men's negative health service experiences (defined as men reporting they "would not recommend" a facility, or "WNR" experiences) and their association with men's future HIV testing. We conducted univariable and multivariable logistic regressions to determine which aspects of health facility visits were associated with WNR experiences and to determine if WNR experiences 12-24 months prior to the survey were associated with HIV testing uptake in the 12 months prior to the survey.

Results: We included 1,098 men who were eligible for HIV testing in the 12 months prior to the survey. Median age was 34 years; 75% were married; 21% had attended secondary school. Of 3,805 health service visits reported, 10% were for HIV-related services. 9% of men reported at least one WNR

experience, which did not differ by men's sociodemographics, gender norm beliefs, or HIV stigma beliefs. The factors most strongly associated with WNR experiences were cost (aOR 5.8, 95%CI 2.9-11.4), cleanliness (aOR 4.2, 95%CI 1.8-9.9), medicine availability (aOR 3.3, 95%CI 1.7-6.4), and wait times (aOR 2.7, 95%CI 1.5-5.0). Reporting a WNR experience was associated with a 59% decrease in likelihood of testing for HIV (aOR 0.41; 95% CI:0.17-0.96).

Conclusion: Dissatisfaction with general health services was strongly associated with reduced HIV testing among men in Malawi. Findings suggest men do not segregate their health service experiences and may reduce use of HIV services in response to negative experiences with other services. Coverage of high-priority screening services like HIV testing among Malawian men may benefit from improving overall health system quality.

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Use of QI Approach (PDSA) To Improve Continuity on Treatment (CoT); Case of Busia County and Referral Hospital (CRH) and Mt. Elgon Sub County Hospital(SCH), Western Kenya

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Background: The project supports two counties in Western Kenya. Performance review (February 2022) showed a high Interruptions in treatment (IIT) in 14 facilities; the highest in Busia CRH and Mt Elgon SCH. The project has been facing challenges in IIT through loss to follow-ups, mortalities, and silent transfers, and some of the attributes are the long distances to facilities, transport cost and stigma.

Material and Methods: USAID Dumisha Afya is a five year USAID funded program supporting

provision of quality HIV services in two counties in Western Kenya. The project identified a gap in CoT that informed sensitization of staff on CoT, and through a CQI approach, conducted a root cause analysis and came up with targeted strategies to address the gaps identified with a goal of improving the CoT. The activities conducted to mitigate the high IIT included capacity building of providers, mentorship on indicator understanding, chart abstraction and linelisting of clients, intensified defaulter tracing, negotiated appointments, structured patient literacy, aligning number of clients booked per day, scaling up enrolment of clients in differentiated service delivery models and provision of client centered services informed by the return to care survey.

Results: Review of outcomes after 6 months of implementation from February 2022 demonstrated that the structured CQI approach led to an improvement in the CoT as demonstrated by the reduction in IIT from 7% as of February 2022 to 0.8% as of August 2022, improved appointment scheduling and enrolment of clients in differentiated services delivery models. Further, there was a reduction in IIT in Mt Elgon SCH from 7% to less than 2% within the same period with an increase in treatment current numbers from 506 (Feb 2022) to 547 (August 2022). The facility was able to enroll 8 clients in a decentralized drug distribution model of DSD.

Conclusion: CQI initiatives through facility own led leadership, team work, data driven and client centered approaches lead to improved patient outcomes, improved staff morale and overall improved program performance and effectiveness.

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Using Lay Cadres to Increase Knowledge on Differential Service Models Among People Living With HIV

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Background: In Zimbabwe, approximately 40% of the 1.2 million PLHIV on ART are enrolled in less intensive differentiated service delivery (DSD) models. Despite their importance in decongesting health facilities and bringing care closer to PLHIV, uptake has been low. Some of the reasons for this include overburdened healthcare workers who, due to staff shortages, have little time to provide information. The Zimbabwe National Network of People Living with HIV (ZNNP+) launched a program in 2022 to train lay cadres to provide education on DSDs available to increase demand and empower RoC to request for the service.

Material and Methods: Using the HIV comprehensive guide, the organization trained 70 Community HIV/AIDS service agents (CHASAs) in 6 select districts to educate their peers on the various DSDs available and how they work. The CHASAs used mobile data collection devices to record DSD enrolment and knowledge status of those they contacted. The data was sent to the central server for analysis once a month. CHASAs used this information to scale up DSD awareness campaigns at ART pickup points and in support groups. Those who were not in DSD were offered education and referred to the facility for enrolment if they were interested. Those who chose to participate in community ART groups were assisted in self-selecting into groups of 4-12 people.

Results: In July 2022 we carried out a baseline client satisfaction survey to measure DSD knowledge among other variables. The results showed that of the 823 randomly selected RoC, 598(73%) knew about DSDs. In December 2022 another client satisfaction survey was done with 493 randomly sampled clients, 395(80%) reported knowledge of DSDs. To confirm attribution of results to CHASA efforts we performed a one tailed hypothesis testing at 5% significance level, p value was 0.001167 and we concluded that there was increase in DSD knowledge between July 2022 and December 2022.

Conclusion: We have demonstrated that CHASAs who are peers living with HIV can be useful in raising awareness of DSDs available at local facilities. Client satisfaction surveys can provide valuable insights into how information is diffusing to people living with HIV.

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Facility Level Integration of HIV and Viral Hepatitis Testing and Treatment Services – Results from the Hepatitis Evaluation to Amplify Testing & Treatment (HEAT) Project Assessment in Akwa-Ibom and Nasarawa States, Nigeria

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Background: Nigeria is one of the countries with the highest burden of viral hepatitis with a national average prevalence of 8.1% for HBV and 1.1% for HCV. The country has a co-infection rate of 8.9% and 1.1% for HIV/HBV and HIV/HCV among people living with HIV (PLHIV) aged 15-49 years respectively. Horizontal Integration of services is a cost minimizing and efficient approach to tackling diseases leveraging on multi-sectoral resources. In recent times, health services are becoming increasingly integrated as effort towards system strengthening gains traction. The HEAT project assessed facility level service integration between HIV and Hepatitis in the states.

Material and Methods: The study adopted a descriptive cross-sectional design in selected health facilities in Akwa Ibom and Nasarawa States. A non-probability purposive sampling was used to select 64 health facilities providing HBV and HCV testing in each of the two states. The questionnaire comprised two sections. Section A comprised of health facility biodata, address, type of facility, service provision, types of hepatitis testing being offered, testing platform, point of entry for HBV and HCV testing, while Section B contain information on laboratory operations, client's payment method, number of tests per day/week/month, current maximum testing capacity, integration of hepatitis and HIV

services, percentage time utilization of PCR machines, etc.

Results: 66 facilities in Akwa-ibom and 63 in Nasarawa were assessed, representing 51.2% and 48.8% respectively of the total number of facilities assessed nationally. 89.4% and 61.9% were public facilities while 10.6% and 38.1% were private facilities in the respective states. 72.7% of facilities and 59.0% of same in Akwa-ibom and Nasarawa screen for HBV alongside HIV while 75.8% and 59.0% screen for HCV and HIV in both states respectively. In terms of integration at the service delivery points, 56.1% and 73.0% of facilities have integrated hepatitis and HIV services while about 43.9% and 27.0% of facilities have not integrated in Akwa-ibom and Nasarawa respectively.

Conclusion: Epidemic control of HCV and HBV in Nigeria requires collaboration with stakeholders in other disease prevention areas. Focusing on providing integrated healthcare for related health problems (e.g. HIV & TB, HIV & Hepatitis, etc.) must become the basic unit of primary preventive health. The result of the study provides health managers with an evidence-based intervention tool to fast-track horizontal integration within the ideals of health system strengthening.

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Increasing Cervical Cancer Screening Among Women Living With HIV (WLHIV) at St Francis HCIII Migyera, Nakasongola District (Uganda)

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Background: In 2022, Uganda was among the top ten countries with the highest incidence of cervical cancer (CACX) of about 28.8/100,000 and ranked the second in East African with about 6959 new cases and 4301 deaths annually worldwide. WLHIV are at high risk of developing early cervical cancer. Adherence to cervical cancer prevention strategies

in this population is vital for early detection and treatment of cervical cancer. At St. Francis HC III Migeera, 159 eligible women living with human immunodeficiency virus (WLHIV) were not screened for cervical cancer. This was attributed by insufficient knowledge and skills amongst the health providers, lack of equipments and tools to use, lack of awareness on CaCx screening and fear of procedure from the service recipients. We present multiple QI interventions initiated with object to increase CaCx screening from 0% in November 2021 to 75% by end of September 2022.

Material and Methods: Interventions implemented included: Re-training of staff on cervical cancer screening, visible stickers were placed on the files to act as a reminder for all eligible WLHIV, conducted screening camps at facility level and community outreaches to scale up cervical cancer screening as well as continuous education talks on the benefits of cervical cancer screening to eligible WLHIV and women of child bearing age at all entry points, carried out weekly monitoring of performance against the expected weekly targets to evaluate performance.

Results: Between November-2021 to September-2022, out of 159 eligible women, 129 WLHIV were screened for cervical cancer using VIA (81%), of which 7 (5.4%) were positive for precancerous lesions. 1 of the 7 was referred due to suspected cancer disease and the 6 were treated with thermos-coagulation. The interventions significantly increased CaCx screening from 0% to 81% by end of September 2022 and achieve our annual target by 104.9%.

Conclusion: Enhancing knowledge and skills among health workers improved CACX screening as well as facility CACX screening camps and community outreaches helped to scale up CACX screening for all eligible WLHIV. Patient education programs in health care facilities on CACX screening improves awareness on CACX screening among women hence increasing demand for the services.

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Improving HIV Service Delivery Through Continuous Assessment of Client Satisfaction and Acceptability: Client Satisfaction Surveillance at Lighthouse Centers of Excellence (COE)

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Background: Patient satisfaction influences retention in HIV care, adherence to HAART and serves as determinant to HIV suppression. Interruption in treatment and adherence are some of the challenges affecting delivery of ART care. We aim to assess recipients of HIV care (RoC) satisfaction with the service delivery provided at four Lighthouse CoEs - Lighthouse Center (LH); Martin Preuss Center (MPC); Umodzi Family Center (UFC) and Tisungane Clinic - between October 2021 and July 2022.

Material and Methods: A cross-sectional survey was conducted on HIV-positive patients receiving ART through use of a digitized questionnaire developed using Microsoft Forms and electronic tablets were used to collect the data. Clients who had received services at the facility were randomly selected and interviewed after obtaining verbal consent. Data was collected on client's level of satisfaction of specific service delivery points, environment, confidentiality, time taken to receive services, provider-patient-communication, and staff attitudes. We measured client satisfaction rate using descriptive statistics and used a qualitative questionnaire to obtain service feedback and recommendations.

Results: From October 2021 to July 2022, 2,289 patient satisfaction interviews were conducted at LH (47%), MPC (21%), UFC (28%), and Tisungane (5%), with 54% of the respondents being female. There was an increase in percentage of patients who rated the overall satisfaction of services being

“Excellent” and “Good” at the four CoEs from 94.1% in (October–December 2021) to 99.7% in (May– July 2022). Similarly, there was also an increase in proportion of clients who rated highly that they were satisfied with the time spent at the facility from 90.65% in (October to December 2021) to 95.80% in (May to July 2022).

Conclusion: A high proportion of participants expressed satisfaction with HIV services. However, some dissatisfaction is masked in this high satisfaction level. The feedback received has helped to improve staff attitudes, staff-patient communication, timely delivery of services at the CoEs as well as increasing patient-centered delivery of HIV integrated services. If scaled up, client satisfaction surveillance will ably explain the performance of specific facilities and the reasons behind successes and challenges of the HIV program and improve client safety and people-centered care.

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Functionalization of Regional Quality Improvement Structures Impacted Positively on National Quality Improvement Collaboratives, East Central Uganda

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Background: The Uganda Ministry of Health developed the National Quality Improvement (QI) Framework & Strategic Plan (NQIF&SP) 2020/21–2024/25 with one of the major objective to strengthen the leadership, accountability and functionality of the organizational structures for Quality of Care at all levels. In the east central Uganda, composed of 12 districts and 20 high volume health facilities, only 23% (7/31) of quality improvement committees were functional most not fully composed. The regional referral hospital mandated to oversee provision of quality health care services in the region therefore initiated quality improvement project. To increase proportion of quality improvement committees

that are functional from 23% (7/31) in March 2022 to 71% (22/31) in December 2022 so as to improve quality of care in the region.

Material and Methods: Through the updated National Quality Improvement Framework & Strategic Plan (NQIF&SP) 2020/21–2024/25, we oriented the staff from regional referral hospital and formed hospital QI committee composed of 13 members. We analysed root cause to non-functional QI committees in the region using pareto chart and identified lack of assignment of roles for QI implementation and lack of QI skills as the most prominent root causes. Conducted quarterly QI coaching and mentorship to committee members, assigned district and facility QI committee members with specific roles and maturity indices reviewed and scored quarterly. Shared performance of collaboratives during quarterly regional QI committee meetings and regional performance review and displayed performance registered in national QI database.

Results: The proportion of quality improvement committees functional increased from 23% (7/31) in March 2022 to 74% (23/31) by December 2022. Collaboratives like the national paediatric and adolescent indicators improved from 66% in June 22 to 99% in November 2022, national TB/HIV performance improved from 42% in March to 99% in December 2022, PrEP indicators improved from 64% in April to 98% in December 2022, VMMC staff training from 76% in Q1 to 93% in Q4.

Conclusion: Functionalization of QI committees with clear assignment of roles to committee members for accountability, regular performance tracking and review meetings to monitor progress for timely bridging of gaps leads to improvement in performance for collaboratives.

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Uptake of Cervical Cancer Screening Service Among HIV-Positive Women at Outapi Anti-Retroviral Therapy Clinic, Omusati Region

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Cervical cancer is a public health concern in Namibia, as it is the second most common cancer among women after breast cancer and women living with HIV are at high risk for early development of cervical cancer. Lack of cervical cancer screening particularly amongst these women can lead to an increase in the risk of women presenting with late-stage of cervical cancer at health facilities which is associated with high mortality. This study aimed to assess the factors and enablers associated with the uptake of cervical cancer screening services among HIV-positive women at the Outapi ART clinic. This study was a mixed methods design of the quantitative and qualitative study which employed descriptive cross-sectional and explorative designs involving documentary reviews of files to capture social demographic and clinical characteristics, and participants were interviewed using an interview guide to describe the enablers. Chi-square tests were done to determine the association between cervical cancer screening and other socio-demographic characteristics at a P value of 0.050 with a 95% confidence interval. The Andersen and Newman Framework of Health Services Utilization was used to analyze the qualitative design.

Of the 402 HIV-positive women's files reviewed in the study, the majority (n = 296, 73.6%) were not screened for cervical cancer. Thirty-seven participants (37%) among those who were screened for cervical cancer had pre-cancerous abnormalities. Age (X² 33.276, P 0.027, CI 0.011-0.043), Functional status (X² 28.06, P 0.001, CI 0.000-0.0070) and Viral load (X² 133.12, P 0.001, CI 0.000-0.007) were found to be significantly associated with cervical cancer screening. Negative perceptions and barrier perceptions such as fear of being diagnosed with cervical cancer and shyness

about being examined by a male nurse were stated. Lack of knowledge, transport and transport fees were also highlighted in the study as the enablers of cervical cancer screening.

This study highlights low coverage of cervical cancer screening and lack of information on the importance of cervical cancer screening among HIV-positive women as the biggest challenges. Patient education programs in HIV prevention and rolling out cervical cancer screening to most facilities should be emphasized to enhance the uptake of screening services.

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Integrating Disability Screening into Routine HIV Care – A Pilot Intervention at AIDS Information Centre (AIC) Kampala Branch, Uganda

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Background: People with disabilities (PWD) on ART face challenges including transport and double stigma that contributes to poor adherence. People living with HIV (PLHIV) may suffer various forms of disability resulting from advanced HIV or following effects of ART. Health workers easily identify clients with gross disability but may overlook 'minor' forms of disability among PLHIV that may require additional services. A one-year PEPFAR-funded 'Reaching out to people with disability' project, piloted routine screening for disabilities among PLHIV attending AIC and 9 collaborating public HIV clinics in Kampala.

Material and Methods: 59 Health workers and one PWD peer received a one-day training on disability screening tailored to project implementation. Using a PWD peer-led approach, clients attending the AIC clinic were routinely screened for disability using a standardized tool. PLHIV identified with any form of disability were documented and referred to clinicians for further assessment, management or referral for additional services. PWD and PLHIV

peers in the clinic provided psychosocial support to newly identified PWD.

Results: Between September and November 2022, of 1,013 PLHIV on ART screened for disabilities 31(3.1%) were identified with various disabilities viz physical 8(25.8%), visual 18(58.1%), dual visual and hearing 2(6.4%) and mental 3(9.7%). More (64.5%) male PWD than females were identified. Over 60% with visual disabilities were above 40years old but attributed the impairment to initiation on ART. Mental disabilities included psychosis and epilepsy that developed after starting ART. Disabilities-related effect on adherence resulted from poor livelihoods leading to food and shelter insecurity, non-disclosure, self-stigma and depression. No PWD was non-suppressed in that period. PWD were supported with 'companionship' home visits, follow up for treatment interruptions and referrals for livelihood programs and additional health services. 2 collaborating high-volume public HIV facilities have identified 36 PLHIV with physical 20(39.2%), mental 10(19.6%), visual 4(7.8%) and hearing 2(3.9%) disabilities to date. This intervention highlighted the gap in disability inclusion in health services delivery but slow uptake of integrating disability screening by health workers in the HIV clinics.

Conclusion: Disability mainstreaming should be integrated in all health programs and PWD peers trained to support screening and referrals for additional services.

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Liberia's National Roll-Out of HIV/ Syphilis Dual-Tests: Insights Gained From Implementing a Training of Trainers' Model

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Background: Historically, training for healthcare providers in Liberia has been implemented using a classroom-based approach where 2 providers attend a central-level training. In 2020, the National AIDS and STI Control Program (NACP) adopted a new HIV testing algorithm for antenatal care, including the utilization of the HIV/Syphilis dual-test as the first screening test. To scale-up this new program and reach national coverage in a timely and effective manner, NACP decided to test the feasibility and sustainability of a Training-of-Trainers (ToT) model.

Material and Methods: The ToT model involves lead trainers from NACP training County Master Trainers (CMTs) who are responsible for providing on-site training and mentorship at assigned facilities. Across the 3 counties, a total of 28 CMTs were trained. Routine program data showed that CMTs trained 1,404 providers across 160 health facilities. To assess providers' knowledge on syphilis screening and treatment, a comprehensive facility survey was implemented in August 2022 at 48 randomly selected facilities following 8-months of implementation. Out of 129 providers interviewed, 88% (113/129) correctly interpreted syphilis-positive test results; 97% (125/129) would correctly treat syphilis positivity with benzathine-penicillin-G. Additionally, 93% (87/94) would use the dual-test as the first HIV screening-test.

Results: Utilizing a ToT model demonstrated that CMTs were able to reach more than four times the number of providers than would be reached in a classroom-based model (1404 compared to 320). Furthermore, this approach tackled challenges faced by staff attrition, ensuring knowledge is retained as all providers are trained. Additionally, on-site training led by CMTs took place concomitantly and allowed NACP to rapidly expand coverage of dual-testing. The ToT model also promoted ownership of the maternal syphilis program at the sub-national level, building capacity, and allowing NACP to leverage county staff for other HIV service delivery activities.

Conclusion: As NACP expands dual-testing nationally, the ToT model should be utilized due to (1) demonstration of strong provider knowledge, (2) the ability to reach all providers engaged in HIV services and (3) building sub-national level capacity ensuring sustained support. Succinctly, countries looking to adopt dual-testing at national scale

should consider utilizing a ToT model, emulating findings from Liberia's success.

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Scaling HIV/Syphilis Dual Rapid Diagnostic Tests for Pregnant Women Accessing Antenatal Care Services: Learnings From Liberia to Guide Other Low-Income Countries

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In 2020, the Ministry of Health updated the National Guidelines for HIV-Testing-Services for pregnant women to include the HIV/syphilis dual-test as the 1st HIV-screening-test. Introduction of new guidelines and tests requires high quality training for providers. The National AIDS and STI Control Program (NACP) designed a comprehensive roll-out and training strategy (RTS) which they introduced in September 2021.

To support implementation, NACP's RTS included a training curriculum, job aids, on-site training forms to collect baseline facility information, and mentorship and supportive supervision tools. In advance of roll-out, NACP led a 3-day training with County Master Trainers (CMTs) to build capacity and equip them with the RTS tools. Additionally, NACP developed county WhatsApp channels to support two-way communication between NACP and CMTs as well as to submit planning, training, and mentorship forms. To assess program quality following 8-months of implementation, NACP gathered data through a comprehensive facility survey from 129 providers across 48 facilities on key indicators to assess knowledge on (1) counseling messages, (2) HIV/syphilis testing and (3) treatment and (4) data-reporting. Results demonstrated that 100% of facilities provide appropriate counseling, 100% of facilities provide HIV and syphilis testing, 96% of facilities provide syphilis treatment and 100% of facilities report data to HMIS.

Development of a RTS that is piloted and iterated on in advance of national roll-out equips CMTs with effective tools to lead on-site training and supervision and cascades knowledge to providers to offer quality services. County WhatsApp channels have been an effective way to share knowledge amongst trainers, communicate successes and challenges, as well as to establish systems for accountability. Building capacity of CMTs has also strengthened engagement with county and district health teams and has allowed NACP to leverage this cohort for other HIV service delivery activities.

Other low-and-middle-income-countries (LMIC) looking to roll-out dual-tests or new HIV testing guidelines should borrow successes from Liberia's RTS and design quality tools to guide the cascade of services at the point-of-care. LMICs investment in a RTS can reduce the need for repetitive capacity building at facilities and build upon existing structures to support future HIV programs.

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Leveraging Private Sector in Growing the Selfcare Market Anchored on the Sale of HIVST Kits as an Entry Point

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Background: In Low- and middle-income countries, health systems remain unresponsive to the unique needs of its users. Community pharmacies are demonstrated to be the first point of care when seeking health services. Since their introduction, access to HIVST Kits in Kenya has had multiple barriers with users citing high prices, fear of being stigmatized by pharmacies typically known to them, fear of a reactive result, among others. Enabling factors causing the growth of the HIVST market in both private and public space include increased access through multiple channels and an assurance of privacy. Kits are available through the following platforms: fully subsidized and distributed for free, social marketed ones which are sold at lower price point and commercialized kits which are sold for profit.

Material and Methods: Since November 2021, Population Services Kenya partnered with MOH and PSI to work with physical and online pharmacies to accelerate the access of HIVST Kits and other sexual reproductive health products. The target included sexually active youth aged 18-34 and males above 35 years. A total of 120 pharmacies were mapped and classified into A, B and C depending on monthly sales volumes for HIVST kits. Pharmacy attendants were trained on HIVST kit sale and report submission. Demand creation efforts through activations complemented their efforts.

Results: Between April and December 2022, 25,821 HIVST Kits were sold through physical pharmacies and 15 783 through online pharmacies. 24819 Condoms, 18185 Emergency Contraceptive pills, 2212 lubricants and 16511 pregnancy kits were sold through physical pharmacies.

Conclusion: As donor funding declines, the private sector becomes a key player in provision of sustainable financing. To further accelerate Universal Health Care, an understanding of the various market segments ensures solutions are customized to meet the needs of each segment and fosters access to healthcare products and services. Continued partnership with the private sector will endure the health needs of the population are met.

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Facility-Based Provider Perceptions Surrounding Potential Expansion of PrEP Method Mix and Optimization of Service Delivery: A Qualitative Assessment in Five Zambian Provinces

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Background: In Zambia, oral PrEP is implemented at scale, with attendant service delivery challenges. Expanded PrEP method options may alleviate or intensify these challenges and provider views are necessary to shape future in-service training. We explored attitudes towards oral PrEP delivery and perceived changes with potential dapivirine vaginal ring and injectable cabotegravir introduction among Zambian facility-based providers.

Material and Methods: We conducted 19 focus group discussions and 14 in-depth interviews among sexual and reproductive health (SRH) and HIV care providers across five Zambian provinces (two rural, two urban, and one mixed with international borders). Topics explored oral PrEP service delivery context and potential impacts of new PrEP methods on service delivery and PrEP eligibility. Interviews were recorded, translated from local languages to English, and analyzed thematically.

Results: Between September and October 2021, 70 SRH providers and 98 HIV providers were interviewed. SRH and HIV providers had median ages of 39.5 and 35 years and a median of 18 and 24 months providing oral PrEP, respectively. Providers viewed oral PrEP and injectables positively due to high efficacy and ease of use, but the ring less favorably due to lower efficacy, prior negative vaginal product experience, and hygiene concerns. Many providers, particularly SRH providers, equated a PrEP method mix with product interchangeability, viewed as a strategy for handling stock disruptions. Providers cited stock-outs as a major concern and frequently reported gaps in oral PrEP and contraceptive commodities. To anticipate increased client volume with injectable PrEP introduction, HIV providers encouraged PrEP expansion across other facility services while SRH providers recommended expanding and strengthening community-based provision, leveraging community contraceptive service structures. Most providers recommended strategies to facilitate method introduction, including in-service training before introduction (augmented by local language job aids) and broad community-level sensitization to foster end-user product understanding and preference prior to facility visit to improve counseling efficiency.

Conclusion: HIV and SRH providers were aligned regarding health system challenges and advocated strategic changes to improve service delivery and

reduce end-user and provider burden at facilities in advance of PrEP product expansion. Providers need customized in-service training, with method mix counseling influenced by family planning approaches.

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A Qualitative Study of Ethiopian Women's Sexual Experiences and Coping Strategies for Sexual Problems After Gynecological Cancer Treatment

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Background: There is a scarcity of research on women's sexual experiences and adjustment after cervical cancer treatment in Ethiopia. The objective of this study was to explore women's sexual experiences and coping Strategies for Sexual Problems after undergoing gynecological cancer therapy at Tikur Anbesa Specialized hospital Oncology Center.

Material and Methods: A Phenomenological qualitative study design was employed for this study. The participants were recruited using purposeful sampling. Thirteen eligible study participants were interviewed face-to-face. Data was collected and processed simultaneously from February 2nd to March 15th, 2019. In data analysis, thematic analysis was utilized, which comprises three stages: data reduction, data display, and data conclusion.

Results: Pain, vaginal bleeding, and discomfort were reported by most participants in this study during sexual intercourse, primarily due to vaginal dryness and tightness. Three key themes appeared among these women with gynecologic cancer as coping mechanisms for managing sexual issues and dysfunction: avoiding sexual intercourse after negotiating with their partners, praying for healing, and seeking professional help. The majority [10/13] of the participants emphasized the importance of

having open and honest conversations with their husbands about their sexual relationships. According to the findings of this study, most of the participants utilize prayer as a coping mechanism for dealing with the side effects of gynecologic cancer, such as sexual issues. Coping techniques included accepting the illness and praying for the strength to engage in sexual activity. Some women feel cancer is a test from God designed to test their faith and patience.

Conclusion: Sexuality is typically overlooked in clinical settings when it comes to gynecological cancer treatment in the study area. Providing information regarding sexuality concerns with patients is imperative.

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Participants Perspectives on How Interprofessional Education Enhanced Their Confidence Levels in the Delivery of HIV Care in Malawi

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Background: The WHO Framework for Action on Interprofessional Education and Collaborative Practice links health and education systems to successful delivery of HIV care. Thus, interprofessional education is reported to enhance collaborative practice among health care professionals through instilling of confidence levels among health care professionals. ENHEIT implemented interprofessional training workshops for pre-licensure and newly qualified health care professionals to promote the delivery of quality HIV care through team-based practice in Malawi.

Material and Methods: Four core modules from the 17 modules on HIV care were presented in a series of eight two days' training workshops to 526 pre-licensure and newly qualified health care professionals. Data was gathered from the scores of the pre-test and post-test results, to examine the increase in clinical confidence levels.

Results: Clinical confidence levels increased in all categories of participants as follows; Module 1. Males 0.5, Females 0.6; module 3 Male 0.8; Female 1.1; module 4 Male 0.8, Females 0.9; module 17 Male 1.1, Females 1.1. Higher levels were noted in the newly qualified health care professionals. Module 1 pre-licensure 0.5, newly qualified 0.6; Module 3 pre-licensure 0.8, newly qualified 1.2; module 4 pre-licensure 0.8, newly qualified 1.1, Module 17 pre-licensure 0.9, newly qualified 1.4. The qualitative data also reflected participants were making decisions readily in clinical settings and had improved in diagnostic skills.

Conclusion: This strategy can be advanced at a larger scale to promote improvement in confidence levels among health care professionals to enhance the delivery of high-quality HIV care in practice settings. Discussion: High levels of clinical confidence among health care professionals is key for the delivery of high-quality HIV care and the advancement of interprofessional education may promote such confidence levels. Interprofessional case-based training promoted greater levels of knowledge and confidence among the participants. This improvement in knowledge and confidence levels is essential to the delivery of quality care and in the promotion of safety. Thus, increased knowledge and confidence levels fosters empowerment in decision making skills and collaborative practice. Strengthening this strategy for capacity improvements in HIV Care among the next generation of nurses and health care workers in Malawi is essential.

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President's Emergency Plan for AIDS Relief (PEPFAR) HIV PCR Laboratory Investment Leveraged for COVID-19 Testing: A Game Changer for COVID-19 Testing in Nigeria

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Background: COVID-19 is public health respiratory infection of global dimension. There was a limited access to PCR diagnosis in developing countries making testing, effective tracking, treatment/control efforts a challenging endeavor. Integrated disease testing is tasking exercise but results in efficient use of existing infrastructure and human resources. Lagos State Nigeria (LSN) was the epicenter of COVID-19 pandemic in Nigeria. We present the outcome of PEPFAR PCR laboratory investment's contribution to COVID-19 testing ramp-up in LSN from March 2020 to May 2021.

Material and Methods: Design: Descriptive Narrative. PEPFAR high-throughput mega HIV viral load (HVL) laboratory with Roche COBAS-6800 and 8800 fully-automated platforms was assessed for COVID-19 integrated testing in March 2020. Concept note was developed to source funds from USAID for COVID-19/HIV PCR integration and commodities and site assessment conducted with WHO strengthening laboratory biosafety assessment tools. Nigeria Center for Disease and Control (NCDC) independently assessed the laboratory and recommended COVID-19 integration and designated it as PCR Hub. Standard operating procedures for COVID 19 testing (CT) were developed; equipment verification; staff competency assessed, workflow designed and two shifts scheduled for HIV and CT were done in May 2020. A five days Bio-risk management virtual training was conducted and consumables supplied with USAID funding in June 2020. All COVID-19 samples received, tested, dispatched (SRTD) within 24-48 hours in-line with NCDC turnaround time. Data tracked daily, populated in excel file, and reviewed. Descriptive analysis was presented in frequency & percentages.

Results: Total of 35,738 COVID-19 SRTD March 2020-May 2021. A total of 2,324 (6.5%) bulk SRTD in July 2021 from University College Ibadan, Oyo State. Median age 35-years, ranged 1-98 years. Of 35,738 COVID-19 tested (M-19,122-53.5%, F-16,268-45.5%) with 5,786-(16.2%) COVID-19 positivity rate (PR), 552 (1.5%)-indeterminate. Similar COVID-19 PR observed in male 3,107 (16.2%), female 2,621 (16.1%).

Conclusion: NIMR PCR COVID-19 integration was seamless due to USAID huge investment in HIV/COVID-19 testing. USAID strong collaboration with government counterparts was fundamental to COVID-19 testing achievements in LSN. Integrating

COVID-19 testing with HVL testing prevented duplication of investment in infrastructure, made more efficient use of existing human resources, laboratory space, and commodities common to both tests.

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Adherence to TB Treatment Guidelines Among DOT Nurses in Kilimanjaro, Tanzania

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Background: Tanzania is estimated to still have a high incidence of Tuberculosis (TB) of 222 per 100,000. WHO developed an End TB Strategy, which aims to end the global TB epidemic as part of the newly adopted Sustainable Development Goals. The success of this goal depends on provision of quality Tuberculosis care and services. Therefore, the main objectives of this paper is (1) investigate to what extent procedures were done according to standard care guidelines and (2) investigate the barriers that DOT nurses face in adhering to TB treatment guidelines.

Material and Methods: This was a mixed methods study among DOT nurses who were attending participants in our cluster randomized trial REMIND-TB. We collected data on procedures done according to standard care guidelines by DOT nurses through the trial data and we interviewed DOT nurses to understand factors related to adherence to standard care guidelines. The interview guides were defined using the Sekhon framework. We used thematic framework analyses on narratives from in-depth interviews. Memos were written based on the narratives and a preliminary codebook with themes was defined.

Results: Smear or GeneXpert test was done among 441 (87%) at month 0. Of those, 280 (63%) were positive. We found that 94% had their smear test done at month 2 and 201 (71%) in month 5/6. Zero (0%) cards had correct recording of dated actual dispensed medication, but all forms indicated daily prescription. Weight was recorded in 418 (82%) cards in month 2 and in 338 (66%) in month 6. From the qualitative data, we found that patient counselling was done at every first visit. The barriers described in the interviews were lack of finances, change of staff in facilities, inadequate training and lack of motivation among DOT nurses.

Conclusion: Adherence to part of the standard of care guidelines is still a challenge among DOT nurses. From the data collected both quantitative and qualitative, standard of care guidelines can be correctly implemented if proper and regular trainings are done with the DOT nurses, guidelines are available at all health care centers and funds are equally located in all health centers with TB patients.

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Bringing It Closer to the Recipients of Care: The Effectiveness of Point of Care Hospital Inpatient Services at Queen Elizabeth Central Hospital, Malawi

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Background: Early diagnosis of advanced HIV disease (AHD) is critical in reducing mortality. Umodzi Family Center (UFC) ART clinic is located at Queen Elizabeth Central Hospital (QECH) in Blantyre, Malawi. Care of inpatient clients with AHD and of those newly diagnosed with HIV was a challenge at QECH; inpatient clients would be shuttled to a distant UFC for services, which was uncomfortable and risky. To avoid moving sick

patients, UFC established AHD care within the QECH wards.

Material and Methods: QECH medical department allocated a room (room 7C) in the medical ward for inpatient HIV care. UFC seconds a nurse, expert client, HIV diagnostic assistants and a part-time clinician to the room providing diagnostic tests (HIV testing, CD4 count, urine LAM and serum CrAg tests), ART services (ART initiation, emergency drug refills) and HIV prevention services (PEP). Services provided are monitored and evaluated by UFC.

Results: From January to December 2022, there were 60,698 admissions with 12,558 (21%) HIV tests done. A total of 372 (3%) inpatient clients tested HIV positive and 311 (84%) were linked to care. We conducted 679 CD4 tests to ascertain risk of AHD. Of these 288(42%) had CD4 <200 while 391(58%) above >200. Cryptococcal Antigen in serum was tested in 384 inpatient clients (positive in 21(5%)) and urine LAM was tested in 348 clients (positive in 66 (19%). In total, 395 inpatient clients received ART emergency supply and PEP was provided to 20 individuals.

Conclusion: Inpatient HIV services in room 7C have been established as a model of care providing timely and low-barrier access for inpatient clients to AHD diagnostic services and ART initiation. Our data shows that inpatient clients admitted in the hospital have a very high proportion of AHD, and point of care testing services are urgently needed to support immediate diagnostic and therapeutic decisions.

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Establishment of Key Populations-Led Facility Monitoring Committees for Strengthening Uptake of Comprehensive HIV Prevention Services at Public Health Facilities in Harare, Zimbabwe

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Key populations (KPs) bear a disproportionate burden of HIV in Zimbabwe. HIV prevalence among KPs (sex workers, men who have sex with men (MSM), and transgender individuals) ranges from 21-42%, much higher than the 12.7% among the general population. Working with KP communities in the design, planning, implementation, and monitoring of KP interventions is key to optimizing Zimbabwe's goal to ending AIDS by 2030.

Pangaea Zimbabwe AIDS Trust (PZAT) established Key Populations Health Facility Monitoring Committees (KPFMCs) integrated into existing Ministry of Health and Child Care Health Center Committees at 17 supported facilities between July-August 2021. A consultative process was conducted to develop terms of reference which listed the constituencies represented on the KPFMCs, including health care workers, the Zimbabwe Republic Police Victim Friendly Unit, networks of KP members, and their roles and responsibilities. At each of the supported facilities, 11-13 nominated KPFMCs members were trained on monitoring quality of services and mobilization to reach and enroll additional KPs. Members are volunteers and only receive transport reimbursements for attending meetings. Peer KPs (MSM, female sex workers, transgender, and people who inject or use drugs) were responsible for linking the KP community to facility-based services. From October 2021 to September 2022, all 17 facilities met quarterly to review performance and develop action plans to scale-up utilization of HIV prevention services.

KPFMCs were successful in linking the KP communities to services, with improvement in access to services. There was an overall relative increase in uptake of HIV prevention services including PrEP. Satisfaction levels remained high, even when client volume increased. The overall client satisfaction with quality of prevention services received increased from 94% to 98%.

This intervention, which capitalizes on existing structures and KP-trained health experts, is a potential low-cost, sustainable strategy for effectively linking KPs to HIV services. Our results demonstrate KP-led facility monitoring groups increase the utilization of HIV prevention services and satisfaction among KPs. KPFMCs give communities ownership of primary health care service delivery points and that may have high impact if this model is scaled up to all public health care facilities in Zimbabwe.

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Association Between HIV Infection and Emergency Care Outcomes: A Cross-Sectional Study at Reference Mozambican Hospitals in 2017

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Background: Access to emergency services in Mozambique's hospitals is theoretically guaranteed at all times of the day. There is a need to understand correlates of emergency health care services outcomes, including the relevance of HIV infection, which is highly prevalent in Mozambique. **Objectives:** To characterize demography and clinically emergency health services users, and explore association between being HIV infected and emergency attendance outcome.

Material and Methods: Secondary analysis of Mozart data - a pragmatic cross-sectional study conducted in 2017 at the highest level reference hospitals in the cities of Maputo, Beira and Nampula. The study included more than 7,800 consecutive contacts of users with the hospitals' emergency services. Using adjusted binary logistic regression, the association between a positive history of HIV infection and the following health care outcomes are estimated: having performed radiogram, admission to hospitalization, primary diagnosis being infectious disease, non-communicable disease or traumatic injury.

Results: Data from 6,523 users having information on HIV status were analyzed, 54% were over 20 years of age, followed by the users at 1-9-year-old age group (26%), and 49% were female. History of HIV positive affected 13% of users and 3% mentioned HIV-Tuberculosis co-infection. Compared with HIV negative users, those with HIV had a higher likelihood of being diagnosed with infectious disease (OR=1.75; 95%CI=1.45-2.11) and being screened by Radiogram (OR=1.93; 95%CI=1.54-2.42), but less likely to be diagnosed with non-communicable disease (OR=0.68; 95%CI:0.55-0.84), traumatic injury (OR=0.72; 95%CI:0.57-0.90) and to be hospitalized (OR=0.69; 95%CI= 0.52-0.93).

Conclusion: The clinical history of HIV infection is a differential for emergency health care outcomes at referral hospitals in Mozambique. There is a need for consecutive studies to understand the underlying mechanisms of the differential. HIV screening is also key to emergency or acute health care services delivery.

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Sustainable Financing for HIV/AIDS Services Following Donor Transition and Its Implications for Continuity of Care. Experiences From a Subnational Level in Uganda

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Background: Delivery of HIV/AIDS services has to a great extent been supported through donor funding in much of sub Saharan Africa over the years. Health systems strengthening to match service delivery demands has also relied on the same funding support. However, with donor transition, financial sustainability remains a key challenge that multiple stakeholders are concerned

about especially given that government allocation to health is inadequate to match service delivery demands. We explored innovative approaches that subnational health systems managers adopted to ensure sustainable financing of HIV/AIDS services amidst donor transition in Uganda.

Material and Methods: An exploratory qualitative study was conducted between November 2021 and January 2022 in three districts representing three regions of the country that received donor support. Interviews were conducted among a purposively selected sample of 25 health managers and providers. Data was collected using audio recorders and coded using Atlas.ti. Analysis was conducted following a thematic content analysis technique.

Results: Health systems managers prioritised primary healthcare funds from government to ensure continuity of delivery of HIV/AIDS services. This would often support community integrated outreaches including delivery of HIV services such as health promotion, adherence counselling, testing and counselling among others. Other health managers leveraged on available health partners such as maternal and child health, sanitation and environmental health, immunisation services to support HIV/AIDS activities. Lobbying governments to widen the current staffing norms was aimed to facilitate previously project supported staff into public service to respond to human resource gaps. Encouraging cost-sharing with clients such as volunteering and alignment with other community partners with support for community facilitators was another strategy to ensure sustainable financing for health services at subnational level.

Conclusion: Different approaches were adopted by subnational health systems managers to ensure sustainable financing for health post donor transition. Most strategies were directed towards government perhaps a reflection of limited financing options available for subnational health managers to explore.

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Analysis of Couple Testing and Counseling as a Strategic Measure to Reduce New HIV Infections in the Effort to Hit the 95:95:95 Target: A Case Study of AIDS Information Center Jinja Special Clinic

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Background: People who learn their HIV status are more likely to adopt preventive behaviours than people who are unaware of their HIV status. People in couples who test together and mutually disclose their HIV status are more likely than those testing alone to adopt behaviour to protect their partner and are able to make joint informed decisions about HIV prevention and reproductive health; contraception and conception (WHO 2012). An assessment of couple testing and counseling against total tested was carried out at AIDS Information center Jinja-Uganda (AIC) as a strategic measure to prevent HIV new infections in the region.

Material and Methods: Data collected of 353 individuals (15+years) and entered in the Electronic Medical Records (EMR) system in November 2022 was used for descriptive analysis in excel. Couple testing and counseling for HIV was compared to the total individuals tested at the facility as statistically discussed in the results section.

Results: Of the 353 individuals who tested for HIV at AIC-Jinja in November 2022, 182 (52%) were tested and counseled as couples; 114(63%) aged 20-34 years, 58(32%) 35-49 years, 4(2%) 50+ years and 6(3%) aged 15-19 years. Of the 182 there were only 2(1%) discordant couples (positive male, a negative female and positive female, negative male) who were counseled and started on treatment and prevention packages immediately.

Conclusion: From the results above, there is a clear indication that couple-testing and counseling for

HIV was greater than individual testing with the biggest number being for highly reproductive and sexually active age groups. If HIV testing and counseling guidelines are modified/updated to ensure that whoever wishes to carry out an HIV test brings at least one partner on that same day as a mandate, the risks of HIV new infection would be reduced due to immediate capture of sexual networks. Religious leaders should also intensify couple-counseling at the intention of marriage to ensure that partners know their HIV statuses before starting long-term commitments.

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Strengthening Team Building and Capacity Development for Data Quality: The Case of HIV Program in Delta State, Nigeria

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Background: Improving human resource management and capacity building to improve health service delivery is critical for a cohesive workforce and quality reporting in any program. Our HIV program intervention in Delta State was hampered by insufficient capacity among program and team members, which hampered the turnaround time for quality and timely reporting of program activities. The purpose of this study is to assess the efficacy of the approaches used to improve data collection, analysis, and dissemination, which resulted in improved data quality and reporting.

Material and Methods: Observational studies and questionnaires were used to assess each team member's capacity gaps. The result of this studies were analyzed. Each team were mentored for 6–12 months based on their identified training needs. Regularly, virtual training were provided with personal development opportunities like individual courses to help them broaden their skills and knowledge. Each team's progress was tracked over time, and feedback was provided through spot checks and capacity reviews. Identify areas for improvement and deal with problems that are affecting team performance. Individual and team

performance awards were used as incentives to promote healthy competition and team motivation.

Results: Over the course of two years, 73 team members were trained. Program reporting and report completion increased from 24% at the start of the project to 100%. In 2022, the number of team members who completed a learning resource increased from 13 to 83. In Delta State, the number of HIV patients receiving treatment increased from 14,000 in 2017 to 72,000 by 2022.

Conclusion: Encouraging the exchange of ideas, skills, competencies among team members helps in team building and is an effective method for capacity building. Gaps in data quality and reporting timeliness can be filled by increasing team members' capabilities through online courses and improving communication between team members and their supervisors.

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Improving Health Systems for Orphans and Vulnerable Children (OVC): Development of Local Government Coordination Guidelines to Improve Stakeholder Coordination and Streamline Support for Vulnerable Children

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Background: Orphans and vulnerable children (OVC) programming coordination involves bringing together all relevant stakeholders (government and non-government) through a temporary or a permanent structure to maximize available financial and human resources in ensuring that the needs of OVC and their households are met. The

unavailability of these coordinating platforms at the local government (LG) level can be attributed to the limiting content of previously developed OVC technical steering committee terms of reference for Nigeria. Lack of this document hinders OVC coordination at the LG level with weak interfaces among the different actors. In Lagos State, the capacity assessment conducted in ten LGs shows no OVC coordination guidelines at the LGA level. With an OVC burden of 14.5% (NSAA 2008) and HIV prevalence of 1.4%, it is critical to have OVC program guidelines. The Integrated Child Health and Social Service Award (ICHSSA) is a 5-year PEPFAR/USAID project in Lagos State with the goal to mitigate the impact of HIV/AIDS on vulnerable children and their households in ten local government areas (LGAs), implemented by the Association for Reproductive and Family Health with Project HOPE and FHI360.

Material and Methods: Project HOPE conducted institutional capacity assessments, developed institutional strengthening plans, and established state level and ten LGA level technical steering committees to aid OVC coordination. The committees met several times within six months with technical support from Project HOPE and developed the LG coordination guideline for OVC response in Lagos State. This is a strategic framework that guides the multi-sectoral response of OVC at the LGA level in Lagos State, Nigeria which will ensure the protection of the most vulnerable children in the country.

Results: Sustained coordination meetings between the ten LG and state level OVC technical committee members led to the development of the Local Government Coordination Guideline for OVC Response in Lagos, which is the first resource in Nigeria for OVC response at the LGA level.

Conclusion: A coordination system through a developed guideline will improve an effective response for OVC that will guide OVC coordination at the LG level in the State.

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Onsite Support for Building Quality Improvement Capacity at Large Scale in Zimbabwe: Lessons Learned

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Background: Post-training support is essential for capacity building of health care workers. Between 2020-2022 Zim-TTECH's quality improvement (QI) program targeted 195 health facilities to improve viral load testing. Most facility level staff do not have QI background and have other work responsibilities. Zim-TTECH uses a multi-faceted approach to reinforce learning and application of QI concepts. On a large scale, inclusion of on-site mentorship and support is challenging due to resource limitations. Here we describe lessons learned in site-support within Zim-TTECH's QI capacity building activities. The objective of site support is to build on foundations learned through training to increase competence among QI coaches to mentor facility teams in implementing QI activities.

Material and Methods: Following in-person practical training, 39 QI coaches and senior managers were provided with 1-hour webinars quarterly to discuss QI methodologies, address implementation challenges, and to share successes. Capacity building was strengthened using a self-study-based tablet training, "How to be a quality improvement coach", with approximately 10 hours of content. On-site support to 78 sites was conducted by National and Provincial teams to assist coaches in implementing QI.

Results: Motivating coaches is key to successful implementation because QI can be perceived as extra work. Coach learning and motivation can be enhanced through learning opportunities, on-site support, peer-peer interactions, sharing through

WhatsApp and acknowledgement. Frequent support yields improved QI outcomes compared to sub optimal performances by sites with less support. Monitoring and evaluation of data to flag sites requiring support to improve performance is critical. Informational packages such as the offline tablet-based training provides a valuable resource to coaches with limited connectivity.

Conclusion: At large scale, on-site support is vital to building QI capacity. Innovative training and information sharing is beneficial to those facilities with the greatest QI capacity needs.

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Opportunities in Enhancing Pharmacovigilance in Sub-Saharan African Countries

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Background: The Pharmacovigilance Enhancement Project (PVEP) is a partnership of pharma companies, national regulatory authorities (NRAs), Pharmacovigilance (PV) centres, HIV Clinician Societies, and non-governmental organisations (such as the Medicines Patent Pool) to improve adverse event (AE) reporting from healthcare professionals (HCPs) in Sub-Saharan Africa, where there is a high HIV disease burden and HIV medicine use. The PVEP aims to support national PV systems through sensitizing HCPs to report AEs; to improve safety data collection, signal detection and assessment leading to timely communication of AEs. Ultimately impacting the safe and appropriate use of HIV medicines in the region.

Material and Methods: PVEP was launched in South Africa (SA) in the format of a PV Symposium. This was a one-day interactive education meeting for HCPs to raise their PV awareness. Presentations were delivered by pharma experts, representatives from the National PV Centre and NRA. The Symposium highlighted: (1) The role of HCPs in timely reporting of AEs and contributing to the understanding of the benefit-risk profile of

medicines. (2) Ethical prescribing requires maximising benefits and minimising risks. (3) Safety communications to HCPs contribute to risk minimisation. Qualitative attendee feedback was collected during and after the Symposium.

Results: 56 HCPs attended, including pharmacists, nurses and doctors. Feedback during the Symposium indicated that most attendees (60.7%) reported less than 5 AEs in the past 6 months. To motivate HCPs to report AEs, more PV education was suggested along with HCPs not feeling penalised for reporting. Most attendees (78.6%) believed AE reporting would have a high impact on patient safety. Out of 56 attendees, 10 responded to an after-event survey. 40% noted that AE reporting was 'easy to fair'; 30% noted that it was 'neutral' and 30% that 'slightly difficult to very difficult'. Responses indicated that the event was valuable, attendees would most likely report AEs in the future and would recommend similar sessions to colleagues.

Conclusion: The Symposium highlighted some key AE reporting challenges (i.e., lack of PV knowledge and AE reporting culture). These were addressed by providing PV awareness and motivation for AE reporting. Further events to strengthen reporting mechanisms are planned.

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Prevalence of Chronic Kidney Disease Among Young People Living With HIV in Sub Saharan Africa: A Systematic Review

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Background: Globally the prevalence of chronic kidney disease (CKD) is increasing among young

people living with HIV (YPLHIV). Robust data on prevalence of CKD among YPLHIV in sub-Saharan Africa (SSA) is needed to inform strategies to diagnose and manage CKD to prevent progression. We conducted a systematic review to estimate CKD prevalence among YPLHIV in SSA.

Material and Methods: We searched four databases: Medline/PubMed, EMBASE, African Index Medicus, and African Journals Online for articles estimating the prevalence of CKD among YPLHIV in SSA using pre-defined search strategies in June 2022. The PROSPERO protocol registration number is CRD42022347588. Reference lists and citation lists of identified articles were also searched using Web of Science. Eligibility criteria were: studies among YPHLIV aged 10 to 24 years, reporting CKD prevalence defined by either glomerular filtration rate (GFR), an albumin-to-creatinine ratio (ACR) greater than 0.3mg/g or proteinuria. We assessed the risk of bias in each article and the between-study heterogeneity. We reported results using the narrative synthesis framework.

Results: Of 635 articles retrieved, 13 fulfilled the inclusion criteria and were included in the review. Of these, 11 (85%) were cross-sectional studies that used estimated GFR to diagnose CKD. The prevalence of CKD in YPLHIV in SSA ranged from 0.8% to 53.1%. The studies were mostly of moderate quality. The definition of CKD, methods used to measure renal function and estimating equations used were different for each study, and due to the considerable heterogeneity (12 of 97%), the results were not combined in a meta-analysis.

Conclusion: Estimated CKD prevalence among YPLHIV varies widely across SSA. A standard definition of CKD is needed to obtain a valid estimate of the prevalence in different settings. HIV programs that enroll YPLHIV should routinely screen for CKD to ensure that it is diagnosed and managed early.

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Spatial Auto-Correlation of Syphilis Prevalence Among Young Women in Central Uganda

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Background: Syphilis prevalence in Uganda is significantly higher among out-of-school than in-school females aged 10-24 years (2.6% vs 0.9%; $p < 0.001$), and varies by region and rural/urban residence. We examined spatial variations and geographical clustering of syphilis prevalence among young women in Central Uganda.

Material and Methods: We analyzed secondary data from a randomized trial evaluating the effectiveness of three partner notification approaches to antenatal syphilis (NCT02262390). Young women attending antenatal care in Kampala and Wakiso districts (Central Uganda) received syphilis and HIV PCR testing at study enrollment. The primary outcome of this sub-study was spatial variation in syphilis prevalence by district administrative division. We utilized spatial autocorrelation methodologies, including Global and Local Moran's I test, to map syphilis prevalence clusters. Local Indicator of Spatial Association (LISA) was used to establish relationships between clusters and neighborhoods. Data were analyzed using R Studio (version 4.2.2).

Results: In the analysis, we included 206 young women diagnosed with syphilis from 14 divisions: 125 (61%) and 81 (39%) from Kampala and Wakiso districts, respectively. The median age was 26 years (IQR: 23-29) and 12 (6%) were living with HIV. Syphilis prevalence was highest in the northern divisions of Kampala and Wakiso (Kawempe [73; 35%] and Kasangati [37; 18%]) and lowest in the southern divisions (Bunamwaya [2; 1%] and Ndejje [1; 0.5%]). Global spatial autocorrelation analysis revealed significant clustering of syphilis prevalence in northern and southern divisions (Moran's $I = 0.2$, $p = 0.005$). Local Moran's matrix

found that most neighboring divisions had similar prevalence, except neighbors of Nabweru division in the north ($p=0.02$). LISA analysis confirmed high syphilis prevalence in northern divisions (Kawempe and Kasangati) ($p=0.01$). By contrast, low and high prevalence areas clustered together in the southern divisions ($p<0.001$). Notably, syphilis prevalence varied across central divisions of Kampala and Wakiso (Rubaga [12%], Makindye [7%], Wakiso [4%], and Masajja [3%]) despite their geographical proximity ($p>0.5$).

Conclusion: Syphilis prevalence was similar among young women living in neighboring divisions of Central Uganda. Application of spatial analysis tools could enable detection and targeting of syphilis clusters with the goal of eliminating syphilis as a public health threat by 2030.

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Hypertension Among Adults Living With HIV in a Multi-Center Chronic Care Program: the Case of TASO Uganda

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Background: Universal access to life-saving anti-retroviral therapy (ART) has led to sharp declines in HIV-related morbidity and mortality world-over. As PLHIV survive into older adulthood, the confluence of HIV and age-related non-communicable diseases (NCDs) such as hypertension (HTN) and diabetes mellitus (DM) is a growing concern. Moreover, evidence suggests that these NCDs may occur at younger ages in PLHIV than among HIV negative individuals. We aimed to determine the prevalence of HTN to guide resource allocation for integrated HIV-HTN care. Purpose: To determine the prevalence of HTN among PLHIV attending chronic care clinics in Uganda.

Material and Methods: We reviewed clinical care records of all PLHIV active on ART by end of December 2022, across ten TASO centers, for a

record of diagnosis of HTN or DM. We used MS Excel and STATA to determine the prevalence of HTN or DM, and determine associations among sex, age group and HTN, applying Chi square statistics, binary logistic regression and Mann Whitney U test as appropriate.

Results: We reviewed a total of 69,047 records. Of these, 67.3% (46,457/69,047) were female, 54.1% (37,378/69,047) were aged over 45 years, median age was 46 years (IQR: 38 – 54 years), median duration on ART was 122.0 months (IQR: 72.8 – 159.3). Overall prevalence of HTN was 2.6% (1,814/69,047), and was 0.1% (2/1,767), 0.3% (10/3,844), 0.8% (65/8,460), 1.4% (243/17,598) and 4.0% (1,494/37,378) for age groups <15, 15 – 24, 25 – 34, 35 – 44 and 45+ years respectively. Compared to individuals without HTN, those with HTN had a longer duration on ART (median 133.8 vs 121.6 months, <0.01).

Conclusion: HTN is prevalent among PLHIV on ART, even among younger individuals. HTN screening should be systematically integrated in HIV care, for timely identification of young adults with comorbid HTN and HIV.

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Incidence Rate and Predictors of Obesity Among Adult PLHIV: A Five-Year Cohort From 2018-2022 in Nigeria

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Background: Obesity isn't just a cosmetic concern. It's a medical problem that increases the risk of other diseases and health problems, such as heart disease, diabetes, high blood pressure, and certain cancers. With the gains in quality of life amongst PLHIV and the impact of long-term ART, addressing underlying factors of chronic diseases is a nonnegligible demand. As patients can now survive decades on ART, the identification of individuals at

high risk for developing chronic comorbid medical conditions is increasingly important for clinical care. This study seeks to establish the incidence rate and predictors of obesity among adult PLHIV receiving ART treatment in southwest Nigeria.

Material and Methods: A retrospective cohort study of 81055 APLHIV aged 18 years and older, being treated with antiretroviral medications from 2018-2022. HIV treatment data collected from ECEWS CDC-funded SPEED project multiple treatment sites were analyzed using Statistical Package for Social Sciences 23. Descriptive statistics were used to characterize social, demographic, and clinical characteristics as appropriate. Chi-square was employed to identify potential factors and multiple logistic regression was used to identify predictors of obesity at $p < 0.05$ using. The normality of continuous variables was assessed using histograms, Q-Q plots, and the Kolmogorov-Smirnov test at p -value = 5%.

Results: The overall median (IQR) age of participants was 37(15) years with 52093(64.3%) being males. Male vs female (Adjusted Relative Risk ARR=1.29, 95% Confidence Interval (CI): 1.19- 1.39), being married vs widowed (ARR=1.27, 95%CI: 1.7- 1.52), primary vs senior secondary (ARR=1.30, 95%CI: 1.14-1.46), and post-secondary vs senior secondary (ARR=1.36, 95%CI: 1.21-1.52) education, baseline clinical stage I vs stage IV (ARR=2.40, 95%CI: 1.35-4.58), being bedridden vs walking (ARR=1.62, 95%CI: 1.29-2.02), good adherence vs poor adherence (ARR=1.59, 95%CI: 1.02-2.48), community point of entry vs facility (ARR=1.12, 95%CI: 1.02-1.24), No sign or symptom of TB vs TB suggested/referred for evaluation (ARR=1.52, 95%CI: 1.08-1.97) were predictors of obesity among adult PLHIV within this follow up period.

Conclusion: With the growing evidence of the relationship between obesity and HIV, establishing policies and programs with an integrated mandate to address comorbidity is essential for the future of the HIV program.

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Scaling-up Cervical Cancer Prevention: Catholic Relief Services (CRS) Epidemic Control 90-90-90 (Epic 3-90) Project in Zambia

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Background: Zambia recorded an estimated 13,831 new cancer cases in 2020 with cervical cancer accounting for 22.9% (3,161). Women Living with HIV (WLHIV) are six times more at risk compared to HIV-negative women. This increased risk has necessitated the integration of cervical cancer prevention into routine HIV services. To improve uptake of cervical cancer screening services during the peak of the COVID-19 pandemic, we embarked on scaling-up both static, and mobile screening points from 2020 to 2021.

Material and Methods: We started scaling-up cervical cancer prevention services in June 2020. Health facilities with the highest number of WLHIV were considered for the establishment of new static sites. Outreach services were provided in all supported districts targeting health facilities that did not have static clinics. Working with the Ministry of Health, we established 20 static screening sites and trained 70 providers to support the implementation of cervical cancer prevention services. We present our findings from October 2019 to September 2021.

Results: The average number of WLHIV screened for cervical cancer increased from 245 per month (October 2019 – May 2020) to 477 (June – September 2020), indicating 94.2% improvement ($\Pr(|T| > |t|) = 0.0135$). By September 2020, we screened 68% (n=4,101) of the 2020 target of WLHIV. In 2021, following the expansion of cervical cancer screening services, we recorded a four-fold increase in the number of WLHIV from 4,101 to 16,352 which represented 84% achievement against the 19,549 target of 2020. Overall, we

reached 20,453 WLHIV with cervical cancer prevention services during the two-year reporting period.

Conclusion: Safe cervical cancer prevention services during the COVID-19 pandemic in WLHIV may be provided through a coordinated approach. This is an essential service in high cervical cancer burden settings like Zambia.

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Evolutionary History of Hepatitis B Virus Sub-Genotype D3 in Botswana

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Botswana has an intermediate Hepatitis B virus (HBV) prevalence of 2–7%. To date, three HBV genotypes (A, D and E) have been reported in Botswana at the prevalence rates 80%, 18.6%, and 1.4%, respectively. However, the evolutionary history of all the identified genotypes within the population of Botswana remains unexplored. Our study first describes the origins, introductions (Time to Most Common Recent Ancestor (tMRCA)), and evolutionary patterns of HBV sub-genotype D3 circulating in Botswana. Furthermore, we investigate the pairwise diversity on this sub-genotype and its spread within the population.

Analysis was carried out using 69 available, HBV/D3 near-full-length sequences retrieved from the NCBI database of which 24 were from Botswana. Population dynamic analysis of the HBV/D3 (HBV/D3) sequences amongst people with HIV (PWH) was performed using the Bayesian coalescent model as implemented in BEAST2 software. The temporal signal was estimated through the root-to-tip method using node density in tempEst and the correlation coefficient was used to indicate the amount of variation in genetic distance explained by sampling time. Skyline plots

were used to estimate the effective HBV/D3 infections in Botswana population over time. Diversity analysis of Botswana sequences was done based on pairwise distances analysis implemented in MEGA software. Botswana sequences were partitioned into 7 HBV open reading frames (ORFs) and used to calculate nucleotide diversity. HBV/D3 tMRCA amongst PLWH in Botswana dated back to 1964 (1839–1989), 95% Highest Posterior Density (HPD).

Skyline plot showed a sharp increase in the number of HBV/D3 infections around the years 1999 and 2000 which is over the last approximately 22–23 years ago. The PreCore region had the highest median diversity of 0.02652 (IQR, 0.0115–0.05) and the surface (S) region was relatively conserved with median diversity of 0.0074 (IQR, 0.004–0.0134) $p < 0.01$. The study provides the first insights of HBV/D3 phylodynamic information in Botswana by predicting its tMRCA, origin and diversity thereby revealing the evolutionary dynamics of the HBV genotype. Diversity analysis showed that Core region was the most diverse region and confirmed that the surface region was the most conserved region.

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Depressive Symptoms and Metabolic Syndrome Among People Living With and Without HIV in Urban Zambia and Zimbabwe

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Background: Depressive symptoms have been shown to exacerbate the risk of metabolic

syndrome (MetS) and vice-versa. Independently, MetS and depressive symptoms are known risk factors for cardiovascular diseases (CVDs), which are established leading causes of global mortality. We sought to understand the prevalence of depression and MetS and their intersection among newly diagnosed people living with (PLWH) and without HIV (PLWOH) in urban Zambia and Zimbabwe.

Material and Methods: We analysed characteristics at enrolment, of participants (≥ 30 years old) enrolled between August 2019 and January 2023 into a cohort study on non-communicable diseases in urban Zambia and Zimbabwe. Depressive symptoms were assessed using the patient health questionnaire (PHQ-9), with cut-off of 5 indicating at-least mild depressive symptoms. MetS was defined using the International Diabetes Federation criteria, as presence of central obesity plus any two of: raised blood pressure, impaired fasting glucose, reduced high-density lipoprotein cholesterol and raised triglycerides. We fitted a logistic regression model to assess the relationship between depressive symptoms and MetS, controlling for age, sex, HIV status, education level, socio-economic status, drinking and smoking.

Results: Of the 972 participants, median age was 39 years (IQR; 34-46) and 556 (57%) were female. Among PLWH (471/972), median CD4 count was 225 cells/mm (IQR;104-411) and median HIV viral load 27 970 copies/ml (IQR; 325-212 904). The prevalence of depressive symptoms was 35% (342/972, 95%CI; 32-38%), with significant differences by HIV status (31% (95%CI; 27-36) among PLWH and 39%(95%CI; 25-43) among PLWOH, $p=0.01$). MetS was diagnosed in 17% (95%CI; 13-20) of PLWH and 19% (95%CI; 16-23) of PLWOH. The co-occurrence of MetS and depressive symptoms was 6% (64/972, 95%CI; 5- 8%), with no significant difference by HIV status (PLWH, 6% (95%CI; 4-8) vs PLWOH, 7% (95%CI; 5-10)). After adjustments for potential confounders, we found no evidence of association between MetS and depressive symptoms (aOR 1.17, 95%CI; 0.8-1.7, $p=0.79$).

Conclusion: We show a high prevalence of depressive symptoms, MetS and their co-occurrence in adult PLWH and PLWOH. Depressive symptoms were not associated with MetS. Screening for depressive symptoms and MetS as

independent risk factors for CVDs in and outside the context of HIV is important.

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Impact of a Digital Adherence Support Intervention on TB Treatment Outcomes in a Nomadic Population: A Case Study of Five Facilities in Karamoja Subregion, Uganda

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Background: There is evidence that mobile health technologies (mHealth) improve treatment outcomes among patients on Tuberculosis treatment. We assessed the impact of an mHealth tool (CallforLife) on treatment outcomes among patients diagnosed with TB in a nomadic population in the Karamoja sub region-North Eastern Uganda.

Material and Methods: In 2020, the Infectious Diseases Institute (IDI) supported by the United States Agency for International Development (USAID) implemented the Call for Life -(CFL)tool at five selected health facilities in the Karamoja subregion. The CFL tool uses Interactive voice response technology (IVR) to send out pill reminders and clinic visit reminders to TB patients and records patients' adherence to TB medicines and subsequent treatment outcomes. For this analysis, we compared treatment outcomes among patients who received the CFL intervention to overall treatment outcomes at the five health facilities. We abstracted data for this analysis from the national district health information database (DHIS II). The proportion of patients successfully completing treatment was compared using Pearson's chi-square test.

Results: From October 2020 to March 2021, 210/458 patients at the five health facilities were enrolled on the CFL tool. Of these 62% were male

and 50% had bacteriologically confirmed TB. There was no difference in age and sex between patients who were enrolled on the CFL tool and those who were not. The proportion of patients successfully completing treatment was higher among patients enrolled on CFL compared to the overall number treated for TB at that health facility 91% vs 84% $p < 0.01$. Further, the proportion of patients lost to follow-up was lower among patients enrolled on CFL (4% vs 8%; $p = 0.03$).

Conclusion: The implementation of CFL, a digital adherence tool was associated with improved treatment completion among patients diagnosed with TB in the Karamoja subregion.

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Programme Integration: Improving Access of People Living With HIV to Essential Non-Communicable Disease Services at the HIV Clinic in Federal Medical Centre, Makurdi, Benue State, Nigeria

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Background: The rising burden of non-communicable diseases (NCDs) and improved lifespan of PLHIV has led to an increasing number of PLHIV with NCD co-morbidities, especially hypertension and diabetes. Over 45% of the 234,000 PLHIV in the Benue PEPFAR program are above the age of 40 years. With support from PEPFAR, APIN Public Health Initiatives, in July 2022, commenced the integration of NCD and ART services, to improve access of PLHIV to screening, diagnosis, and linkage to treatment of hypertension and diabetes.

Material and Methods: In partnership with government stakeholders, APIN conducted a baseline assessment, to identify available and required resources. We adapted the Nigeria National hypertension and diabetes diagnosis and treatment algorithms, and trained healthcare workers on the use in screening, diagnosis, management, and referral. We screened the clients for hypertension and diabetes using point of care diagnostic device at the nurse's triage station. Clients with elevated blood pressure and blood sugar were referred for further evaluation by a clinician.

Results: At the end of December 2022, 6,714 (64%) of the 10,507 adult PLHIV in the facility comprising of 1,812 males and 4,902 females, had been screened for hypertension and diabetes. Of these, 1,199 (18%) of the clients were diagnosed of hypertension, with only 15% aware of their status, while 226 (3%) were diagnosed of diabetes, with 20% aware of their status. The proportion of males (22%) diagnosed of hypertension was higher compared to females (16%), likewise diabetes (4% of males and 3% of females). Hypertension and diabetes were more common among adults aged 50 years and above (27% and 6% respectively). Only 7% of hypertensives and 3% of diabetics have commenced medications from out-of-pocket expenses.

Conclusion: Integration of essential NCD services into ART clinics have the potential to improve access to screening and diagnoses of hypertension and diabetes. However, only a few clients had access to treatment. Interventions must be channelled towards addressing this gap by increasing availability of medications, and at affordable rate. Further study is required to establish the long-term impact of service integration on HIV outcomes such as medication adherence, client retention, viral suppression, and mortality.

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Integration of Non-communicable Diseases (NCDs) Screening, Prevention and Management in HIV Treatment Clinics in Western Kenya

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Background: Increasing life expectancy among PLHIV has led to a rising prevalence of NCDs. Managing HIV/NCDs as silos is straining the traditional care delivery models as both conditions lifelong medication, clinical and laboratory monitoring, and intense adherence support. Aligning and integrating HIV service delivery with other siloed communicable disease structures will promote sustainability of PEPFAR's HIV gains while improving efficiencies in service delivery.

Material and Methods: USAID Dumisha Afya supports 166 ART sites in Bungoma and Busia counties, western Kenya. We collaborated with AMPATH's Population Health colleagues to offer treatment for NCDs. This was informed by the high attritions of NCD/HIV clients where when PLHIV were referred from CCC to OPD, they would often 'fall through the cracks'. We sensitized providers on NCD prevention, screening and management among PLHIVs. We prioritized the high volume sites that contributed 80% of clients on treatment. 43 selected facilities set up an NCD/HIV clinic day, where clients seen within the HIV clinics and provided holistic management. Clients receive integrated NCD/HIV appointments and coordinated medication pickups with 3MMD for both ARVs and NCD meds for established clients who additionally receive drugs in the community through established community ART groups. To reduce the program's donor dependency, AMPATH Plus started a RFP to provide low-cost nonARV medications to clients to enhance adherence to medication and retention to NCD care. Payment done by both cash and NHIF(health insurance) - clients are encouraged to register to NHIF. Clients encouraged to join microfinance groups to help in payment of NHIF.

Results: Integration of NCD/HIV to a single clinic has improved client monitoring. 97% of clients enrolled are retained and suppressed. Clients benefit from subsidized prices of medication from the Revolving Fund Pharmacy Model. 47% are enrolled on NHIF with 1% enrolled on other insurance schemes. Clients on NHIF have better Diabetes and hypertension control.

Conclusion: Providing Integrated facility/Community-Based HIV/NCD care is able to identify patients with NCDs and link them with appropriate care. This strategy has potential for scalability and is sustainable given the revolving fund and microfinance additions that are not donor dependent.

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Cognitive Functioning Using a Mobile-Based Tool in Adolescents and Youth Living With HIV in Kenya

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Background: Adolescents and youth who acquired HIV perinatally have increased risk for neurocognitive compromise. Neurocognitive impairment is an important consideration for adolescents and youth living with HIV (AYLHIV) as they age into young adulthood. Access to neurocognitive tests is limited in lower- and middle-income countries (LMIC) with few neuropsychologists and lack of normative data. Simpler scalable tools may provide opportunities to identify AYLHIV in HIV programs in LMIC who may benefit from focused support. Our objective was to pilot the use of a tablet-based assessment tool among AYLHIV and determine correlates of cognitive scores.

Material and Methods: Cognitive assessment was performed using the NeuroScreen tool, a short,

validated tablet-based application on AYLHIV aged 13-24 years attending a large HIV treatment program in Nairobi, Kenya. Sociodemographic and clinical characteristics were abstracted using structured questionnaires and medical records respectively and summarized as proportions for categorical and medians (interquartile range [IQR]) for continuous variables. The outcome measure was cognitive test scores in AYLHIV. Scores for each domain were summed, generating a composite score. Linear regression analysis was conducted to determine the correlates of cognitive test performance.

Results: Among 146 participants, median age was 18 years, median age at ART start was 10 years, 53% were male and 75% were enrolled in school. Many AYLHIV (46%) had early-stage disease (WHO stage I/II) at HIV diagnosis and 23% had detectable viral load at last measurement. Male sex and education level were associated with significantly higher cognitive scores on univariable analysis. Adjusted for sex and level of education, school grade correlated with measured cognitive function. Adolescents with above-average and average school grades had better scores compared to those with below-average grades (mean difference 5.31 (95%CI 1.93, 8.68) $p=0.002$, 4.09 (95%CI 1.44, 7.92) $p=0.012$ respectively).

Conclusion: Lower scores for executive functions, processing speed, verbal learning, verbal recall/memory, and motor speed using NeuroScreen correlated with poorer school performance, suggesting that the test reflects functional performance. Gender differences may reflect physiologic, social or educational differences. Studies to further evaluate NeuroScreen as a potential tool to identify ALHIV with cognitive impairment are warranted.

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Effects of a Digold Chloroquine Derivative With Anti-HIV Activity on the Proliferation of Mycobacterium Tuberculosis and Plasmodium Falciparum

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Background: HIV infection is still a significant global health threat, with an estimated 38.4 million people living with the virus globally in 2021. Sub-Saharan Africa has the highest prevalence of HIV/AIDS and the overlap of this infection with other major pandemics (Tuberculosis and Malaria) that plague the region has become a major challenge in the treatment of the infection. Therefore, there is an urgent need for developing novel anti-HIV drug agents that could simultaneously inhibit these opportunistic pathogens. To this end, we investigated, a digold chloroquine derivative with the neutralization ability of the HIV-1 subtype C pseudovirus isolate, Du 151 at concentrations that were non-toxic to cells. The anti-HIV activity of this complex was published, and this paper presents the further investigation of the potential mechanism of action of anti-HIV activity using in silico docking, as well as its effects on the replication of Mycobacterium tuberculosis and Plasmodium falciparum, the causative agents of Tuberculosis and Malaria respectively.

Material and Methods: Schrodinger was used for anti-HIV mechanism elucidation studies and the complex was docked against various viral proteins. KKS-46 was investigated for effects on the proliferation of the virulent M. tuberculosis strain, H37Rv (ATCC27264), as well as the 3D7 strain of the malaria parasite.

Results: The minimal inhibitory concentration of the complex against M. tuberculosis was 5 μ M after 14 days of incubation with the bacterium. The complex did not show improved anti-malarial activity when compared to chloroquine, but retained activity against the parasite ($IC_{50} < 1 \mu$ M). These concentrations were non-toxic to TZM-bl cells ($CC_{50} = 24.34 \pm 0.68$), and utilizing this CC_{50} value the selectivity indices were estimated to be 4.87 and 41.25 for M.tuberculosis and P. falciparum respectively. In silico studies are currently underway.

Conclusion: An anti-HIV compound with inhibitory abilities against both M. tuberculosis and P.

falciparum is presented here. These two infectious diseases play a major role in the mortality of HIV-infected patients in endemic regions, and the development of drugs with dual activities that can control both viral and bacterial infection could contribute to the holistic treatment of the viral infection.

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Prevalence of Five Curable Sexually Transmitted Infections and Associated Risk Factors Among Young Gay, Bisexual and Other Men Who Have Sex With Men in Nairobi, Kenya: A Respondent-Driven Sampling Survey

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Background: Young gay, bisexual and other men who have sex with men (MSM), are a key population at high risk of sexually transmitted infections (STIs), but are underrepresented in research. We conducted a respondent-driven sampling (RDS) bio-behavioral survey to estimate the prevalence of five curable STIs, namely: chlamydia, gonorrhea, syphilis, trichomoniasis and Mycoplasma genitalium infection, and associated risk factors among tertiary student MSM (TSMSM) in Nairobi, Kenya.

Material and Methods: Between February and March 2021, we recruited 248 TSMSM aged ≥ 18 years who self-reported engaging in anal and/or oral sex with another man in the past year. Samples collected included urine, anorectal and oropharyngeal swabs for pooled Chlamydia trachomatis, Mycoplasma genitalium, Neisseria gonorrhoea and Trichomonas vaginalis testing using multiplex nucleic acid amplification tests, and venous blood for serological Treponema pallidum screening and confirmation of current infection. Participants completed an electronically self-

administered behavioral survey on REDCap digital platform. Data analysis was done using RDS-Analyst (v0.72) and Stata (v15). Differences in proportions were examined using the chi-square (χ^2) test, and unweighted multivariate logistic regression was used to assess factors associated with STIs prevalence.

Results: Median age of participants was 21 years (interquartile range 20-22), with 96.3% aged ≤ 24 years. RDS-adjusted prevalence of at least one of the five STIs, chlamydia, gonorrhea, Mycoplasma genitalium infection, trichomoniasis and latent syphilis were 58.8% (95 confidence intervals [CI] 50.4-67.3), 51.0% (95% CI: 42.3-59.8), 11.3% (95% CI: 6.1-16.5), 6.0% (95% CI: 2.6-9.4), 1.5% (95% CI: -0.3-3.3) and 0.7% (95% CI: -0.1-1.5), respectively. Factors independently associated with prevalence of any of the five STIs were inconsistent condom use (adjusted odds ratio [AOR] = 1.89, 95% CI: 1.03-3.47, $p = 0.038$) and the last sex partner being a regular partner (AOR = 2.35, 95% CI: 1.12-4.92, $p = 0.023$).

Conclusion: STIs prevalence among TSMSM in Nairobi is disturbingly high, needing urgent tailored testing, treatment and prevention interventions for this population. Accurate, affordable and timely point of care tests for agents of STIs are required to optimize treatment and control. Interventions that increase condom use efficacy and offer risk reduction counseling are also requisite.

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HIV and Non-communicable Disease Multimorbidity: Results From the Ndlovu Cohort Study, South Africa

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Background: With antiretroviral therapy (ART) for HIV becoming more widely accessible in sub-Saharan Africa, there is a greater number of people in this region aging with HIV. These individuals are at increased risk for developing chronic conditions, particularly non-communicable diseases (NCDs). Several studies have examined the prevalence of HIV and multimorbidity individually within low- and middle-income countries (LMICs). However, there is a lack of research studying the relationship between HIV and NCD multimorbidity within these countries. The aim of this study was to investigate the occurrence and patterns of NCD multimorbidity among people living with HIV (PLHIV) and people living without HIV in the Ndlovu Cohort Study (NCS), within South Africa.

Material and Methods: Baseline data of individuals within the NCS was examined. Euler diagrams were constructed to examine and compare the interactions of six NCDs (hypertension, diabetes, hypercholesterolemia, obesity, albuminuria and depressive symptoms) among PLHIV and those living without HIV. Multivariate logistic regression analysis was conducted to examine the adjusted relationship of HIV and multimorbidity.

Results: Data was analyzed from 1785 participants. Within this population, 46.1% of individuals were HIV-positive and 56.5% were female. The majority

of PLHIV were on combination ART (cART) (77.5%). The prevalence of multimorbidity among PLHIV was estimated to be 21%, while that of HIV-negative individuals was 24%. Among the HIV-positive participants, hypercholesterolemia, albuminuria and depressive symptoms were most common. Hypertension, hypercholesterolemia and obesity were most prevalent among HIV-negative individuals. Multivariate logistic regression revealed a significant association between HIV status (including ART status), male sex, age and current smoking ($P < 0.05$). Hypertension, hypercholesterolemia and obesity were most prevalent among HIV-negative individuals.

Conclusion: We observed a high prevalence of NCD multimorbidity in a rural South African population irrespective of HIV status. The results emphasize the importance of regular NCD screening for all individuals of this region. Future research should be longitudinally conducted to examine the potential of ART in contributing to specific NCDs.

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HIV Associated High-Risk HPV Infection Among Women Attending a Routine Cervical Cancer Screening at the Dream Program, Maputo, Mozambique

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Background: Human papillomavirus (HPV) associated invasive cervical cancer (ICC) is common in Mozambique, but the prevalence and multiplicity of high-risk HPV (hrHPV) infection, a necessary cause of cervical cancer, appears different comparing HIV+ to HIV- women. Little is known about HIV and HPV co-infection in the country. Screening for the hrHPV showed to be more sensitive and better stratify patients at risk for developing CC.

Material and Methods: This was a hospital-based cross-sectional study from July 2021 to May 2022,

involving 1,207 women aged 30–55-year-old, attending for their routine CC screening locally. Cervical scraping samples were screened for hrHPV using the HPV Cobas 4800 assay (Roche Molecular Systems). The women were tested for before HIV and Follow-up assessments for cervical outcomes were done by visual inspection with acetic acid (VIA). A routine structured form was used to obtain sociodemographic data. Descriptive statistics and univariable analysis to describe hrHPV burden and association between hrHPV, potential risk factors and cervical outcomes.

Results: The median age was 43 years (IQR 38 – 55) and 577 (47.8%) women were HIV positive. hrHPV prevalence was 26.9% (n = 325), being higher in HIV infected women (36.7% in HIV infected women vs 17.9% in HIV uninfected). Among the hrHPV infected women the genotype distribution was: 32 with HPV-16, 12 HPV-18, 3 HPV-16 and HPV-18, and 221 with other genotypes than -16 and -18. Among the recruited women, 124 (10.3%) women were VIA positive and among the positives, 111 women had a lesion <75% of the cervical area, one with ≥75% and 12 a suspicion of cancer. HIV positive women had a higher risk to be infected with hrHPV (36.7% vs 17.9%, OR 2.65 [2.04-3.46]), and testing VIA positive (11.1% vs 9.5%, OR 1.19 [0.82-1.72]).

Conclusion: HIV infection was associated with increased risk of any HPV, hrHPV and multiple HPV infections. current VIA screening protocol misses infection from very high-risk HPV such as 16 and 18, potentially missing an opportunity to detect and treat cervical cancer and precancer.

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Prevalence and Predictors of Suicidal Ideation in Substance Users and Non-users Among HIV-Infected Youth Treated at Botswana-Baylor Children's Clinical Centre

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Background: Youth living with HIV/AIDS and those with early onset of substance use (cigarette smoking, alcohol drinking, cannabis) are among high-risk groups for suicidal ideation. This study aimed at comparing the prevalence and predictors of suicidal ideation between the two groups: substance users and non-users among HIV-infected youth treated in Botswana-Baylor Children's Clinical Centre.

Material and Methods: An analytical cross-sectional study was conducted among 15-24 year old HIV-infected youth treated at Botswana-Baylor Children's Clinical Centre in Gaborone, Botswana. A structured questionnaire incorporating a modified Youth Risk Behavior Surveillance System tool, the Oslo Social Support Scale and Patient Health Questionnaire-9 was administered face-to-face to the participants. The data from the interviews were analyzed using the Stata/IC 13.1 software. Chi2 test was used to compare the prevalence of suicidal ideation between substance users and non-users. Bivariate and multivariate analyses for binary logistic regression model were employed to identify factors associated with suicidal ideation. The level of statistical significance was set at p-value of <0.05, and precision at 95% confidence interval.

Results: A total of 255 participants were enrolled. The median age of the respondents was 21 years (IQR): 19-22. Females constituted the majority with 52% of the participants. Overall prevalence of suicidal ideation was 29% and that of depression was 39%. Smoking was prevalent at 20%, alcohol use at 46% and illicit drug use was at 12%. There was no statistically significant association between suicidal ideation and substance use: smoking (p-value = 0.356), alcohol use (p-value = 0.871) and illicit drug use (p-value = 0.616). Only depression and bullying were strongly associated with suicidal ideation in the multivariate logistic regression analysis, with adjusted odds ratios (AOR) of 8.06 (95% CI 4.22-15.39) and 5.64 (95% CI 2.25-14.16), respectively. All respondents with suicidal ideation and depression were referred to the Clinical Psychologist based at the Botswana-Baylor Clinical Centre.

Conclusion: Depression and bullying were strongly associated with the suicidal ideation among youth living with HIV in this study. Considering the burden

of mental health issues in the Botswana setting, Botswana-Baylor Clinical Centre is advised to upscale their clinical psychology services to this special population.

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Introduction of a Standard of Care for the Management of Cryptococcal Infection Amongst HIV Patients in Nigeria – Lessons Learned

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Background: Cryptococcal infection (CI) is a common opportunistic infection among severely immunocompromised HIV clients, with cryptococcal meningitis (CM) representing a major driver of AIDS-related deaths. An estimated 6,000 people in Nigeria are infected annually, which represents 3% of the global incidence, however, no clear national guidance existed for management of CI using a public health approach. In 2019, the National HIV program developed a standard of care (SoC) for the management of CI as part of the National AHD Package of care. We documented lessons from the first phase of implementation of the SoC.

Material and Methods: The SoC incorporates diagnostic and treatment modalities for CI in HIV; it recommends that all newly enrolled HIV-positive clients with CD4+ cell count <200cells/mm³ be screened for blood cryptococcal antigen using CrAg Lateral Flow Assay, and those with a positive result receive a CSF CrAg test. All persons with a positive CSF CrAg result are treated for CM, while those with a negative CSF CrAg receive pre-emptive treatment to prevent the development of invasive cryptococcal disease. Liposomal amphotericin B, flucytosine and fluconazole are the recommended treatment and prevention options. We collected and analyzed data on implementation of the SoC

from the 28 first phase facilities following training of healthcare workers (HCWs) at the ART clinics.

Results: Between Q1 2021 and Q3 2022, 5,486 newly enrolled clients had CD4+ cell count <200cells/mm³ and 83.4% (4,576) received blood CrAg screening with 2.3% (106) positivity yield. CSF CrAg screening was conducted for 35.8% (38) of eligible clients and 23.7% (9) had positive results; 6 patients ultimately received CM treatment. Despite the introduction of the SoC, there was poor access to lumbar puncture (LP) for CM diagnosis. Clients' refusal to consent to LP procedure due to safety concerns and out-of-pocket expenditure for LP packs and hospitalization was a major reason for the gaps. Also, there was hesitancy from some trained HCWs to conduct LP.

Conclusion: The introduction of a CI SoC improved CI case identification. However, countries should incorporate patient literacy, HCW capacity building, and strengthen LP referral mechanism in their SoC to mitigate gaps in CM management.

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HIV-Infected Children With Malaria Parasites and Associated Factors in Accra

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Background: Human Immunodeficiency Virus (HIV) and malaria are two important diseases in Sub-Saharan Africa and the coinfection rate between the two diseases may be as high as 30%. The carriage of malaria parasites significantly drives malaria transmission and replication of HIV. This drive impacts malaria control and elimination strategies as well as increasing viral load levels in HIV-infected patients. Objective: The study determined the proportion of HIV-infected children with malaria parasites and associated factors at Korle Bu Teaching Hospital and Princess Marie Louis Hospital.

Material and Methods: This was a cross-sectional study. A consecutive sampling method was used to recruit 277 patients aged 8 months to 14 years, attending the Paediatric HIV clinic at Korle Bu Teaching Hospital and Princess Marie Louis Hospital, Accra, who had been on ART for at least 6 months. Socio-demographic, malaria preventive practices and ART related data were collected using questionnaires. Study participants were screened for malaria using microscopy and viral load was determined using GeneXpert. Study variables were tabulated and chi square tests and logistic regression were used to assess associations between predictor variables and the outcome of interest (presence of malaria parasites). P-values < 0.05 were considered as statistically significant.

Results: The median age of the subjects was 9 years (IQR: 6-12). The proportion of males was 57.0%. Of the 277 subjects, 66 (23.8%) had malaria parasites. Out of the 66 who had malaria parasites, 61 (92.4%) were asymptomatic for malaria. After adjustment for significant variables, age was the only factor associated with carriage of malaria parasites. The odd of malaria parasites amongst the age group 5 and 9 years was 50% less as compared to the age group 10-14 years (AOR: 0.50, 95% CI: 0.26-0.95, $p=0.033$). Out of the 277 study participants, 82 (29.6 %) had virological non-suppression.

Conclusion: The incidence of the carriage of malaria parasites as well as asymptomatic malaria among HIV-infected children in these hospitals is high and is a cause for concern. Health education on malaria preventive practices should be prioritized in ART clinics at KBTH and PML.

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TB Treatment Outcome Among HIV/TB Co-infection and Associated Factors in Anambra State Nigeria

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Background: Tuberculosis and HIV are among the most challenging infectious diseases facing mankind as of today with its enormous burden on

healthcare systems. Nigeria is among the high burden countries for tuberculosis (TB), TB/HIV co-infection and multi-drug resistant TB worldwide. TB/HIV patients usually encounter barriers to effective treatment ranging from poverty, ignorance, stigma and discrimination in resource-limited countries like Nigeria. TB is the leading cause of death among People Living with HIV (PLHIV). The objective is to identify factors associated with negative treatment outcomes (Loss To Follow Up, Death, Treatment Failure) of PLHIV that is co-infected with TB in Anambra State Nigeria.

Material and Methods: This was a retrospective cohort study of Drug Susceptible Tuberculosis (DSTB) cases (1666) notified in 2021 in the private and faith-based health facilities in Anambra State Nigeria. Logistic regression and Chi Square analysis were done.

Results: Among the 1666 DSTB patients, 197 (12%) were co-infected comprising of 51% male. 30 (15%) of the co-infected patients had negative TB treatment outcomes as against 10% among the HIV negative DSTB patients. Logistic regression analysis showed that previous history of TB and retreatment TB cases have increased risk negative outcome with odd ratio, 3.18 (95% Confidence interval (CI): 2:89 - 3.52)). Other associated variables with significant odds to negative outcome include accessing anti-TB medicines and antiretroviral therapy (ART) at different health facilities 1.72 (95% CI: 1:48 - 2.16) and refusal to home visit for TB contact investigation 1.46 (95% CI: 1.22 - 1.84). No functional phone details, distance to health facility, sex and occupation were also predictors of increased risks of negative outcome but there was no significant difference between HIV positive and HIV negative TB patients. 2-Month AFB microscopy conversion (0.46 (95% CI: 0.32 - 0.74)) and good adherence to ART (0.41 (95% CI: 0.28 - 0.76)) were predictors of reduced risk among co-infected patients.

Conclusion: As both TB and HIV impact on each other progression, TB/HIV co-infection increases the risk of negative outcome. Our finding can help TB and HIV clinics tailor their programming for improved treatment outcomes.

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High Prevalence and Incidence of Herpes Simplex Virus Type 2 (HSV-2) Among High-Risk Young Adults in an HIV Incidence Cohort Study in Maputo, Mozambique

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Background: Herpes simplex virus type 2 (HSV-2) is a common infection worldwide and a major cause of genital ulcer disease. HSV-2 infection is associated with increased risk of human immunodeficiency virus (HIV) acquisition. We assessed the prevalence and incidence of HSV-2 antibodies among high-risk young adults in Maputo, Mozambique.

Material and Methods: From January 2014 to November 2017, male and female subjects from the general community, and from female sex workers and men who have sex with man populations, aged 18-35 years, were recruited into an HIV incidence cohort study. At baseline, participants were tested for HIV using two sequential immunochromatographic strip tests, for hepatitis B virus using GS HBsAg EIA 3.0 kit, and for HSV-2 antibodies using ELISA HSV-2 IgG (Human Diagnostics Worldwide). Those with a negative HIV test result were enrolled and followed quarterly for 24 months (M24). At M24, all enrolled subjects were re-tested for HSV-2 antibodies. Chi-square test and logistic regression were used to establish a relationship between the variables, considering $P < 0.05$ as an indicator of significance.

Results: Of the 1150 adults screened, 1093 had a valid HSV-2 antibody test result and were included in these analyses. The mean age was 22.6 years (interquartile ranges IQR: 19-25), 54.3% (593/1093)

were females and 76.7% (838/1093) were single. The overall prevalence of HSV-2 was 96.9% (95% CI: 95.7- 97.9), being 95.6% (478/500) and 98.0% (581/593) among men and women, respectively. Co-infection with HIV and HBV was found in 10.4% (113/1091) and 7.3% (78/1068), respectively. Factors positively and negatively associated with the prevalence of HSV-2 antibodies included female gender ($p = 0.024$; OR:2.23; 95% CI: 1.09-4.55) and age at sexual debut ≥ 25 years ($p = 0.024$; OR:0.22; 95% CI:0.06-0.82), respectively. Four (4/15) participants seroconverted for HSV-2 during follow-up, with an overall incidence of 13.4% per 100 person-years (PY).

Conclusion: The observed high prevalence and incidence rates of HSV-2 infection in this high-risk cohort underlines the need to consider implementing control measures for HSV-2, to reduce STI transmission, including HIV.

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Estimated Prevalence of Hepatitis B and C in Correctional Facilities in South Africa

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Background: The magnitude of hepatitis B (HBV) and C (HCV) in incarcerated persons in South Africa has not been clearly described. We conducted a cross-sectional study to estimate HBV and HCV prevalence including associated factors.

Material and Methods: Between August and December 2019, we conveniently sampled, recruited and enrolled adults inmates from two South African correctional facilities. Trained interviewers collected socio-behavioral and clinical data using a standardized questionnaire and collected 5ml whole blood by venipuncture for point of care (POC) testing of HBV surface antigen (HBsAg) and anti-HCV antibodies. Whole blood specimen from positive POC test results was sent to

the laboratory for HBV surface and core antibodies, quantitative HBV DNA, and quantitative HCV RNA testing. Active HBV infection was defined as a positive HBsAg whereas HCV infection as a positive antibody test and detectable HCV RNA (≥ 15 IU/ml). HBV and HCV prevalence estimates were descriptively summarized including 95% confidence intervals (CI) and Chi-square tests assessed for associated factors.

Results: We enrolled 633 participants; mostly black males ($n=549$, 86.7%), of median age 36 years (IQR: 29-41), and incarcerated for a median of 19.3 months (IQR: 7.2-55.7). HBV infection was present in 18 participants (2.8%, 95% CI: 1.7%-4.5%) and HBV DNA was $>10,000$ IU/mL in two. HBV/HIV-coinfection was observed in 13 (72.2%, 95% CI: 46.5%-90.3%). HBV was detected in those who self-reported sharing piercing equipment (25.0% vs 1.5%; p -value 0.01), and injection drug use (14.8% vs. 2.5%; p -value <0.01). HCV antibody positivity was present in 28 (4.4%, 95% CI: 3.0%-6.3%) and HCV infection present in 13 participants (2.1%, 95% CI: 1.6%-5.4%); 10 of whom had HIV co-infection (35.7%, 95% CI: 18.6%-55.9%). HCV infection was observed in younger inmates [<35 (7.2%) vs. ≥ 35 (2.0%) years; p -value 0.01], those sharing tattooing tools (14.1% vs. 5.1%; p -value 0.02) and injection tools (73.3% vs. 20.0%; p -value 0.03), and use injection drugs (59.3% vs. 2.1%; p -value <0.01).

Conclusion: HBV and HCV infection were present with low prevalence in South African correctional facilities. Both infections were associated with injection drug use and shared tattooing equipment. These findings highlight the risk factors for transmission of hepatitis in high HIV burden settings.

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The Association of HIV Status and Depressive Symptoms in the Ndlovu Cohort Study, South Africa

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Background: HIV is a major contributor to the burden of disease in South Africa. Depressive symptoms are among the most common psychiatric comorbidities in HIV-infected people. Previous studies have shown that depressive symptoms are associated with medication non-adherence and sexual risk-taking. Few studies managed to compare depressive symptoms in HIV-positive and HIV-negative groups. The aim of this study was to investigate the association of HIV status and depressive symptoms in the Ndlovu Cohort Study.

Material and Methods: The baseline data of the Ndlovu Cohort Study was used to conduct a cross-sectional analysis among HIV-positive and HIV-negative participants in rural South Africa, recruited between 2014 and 2017. Data was collected on demographics, socioeconomic status, and depressive symptoms by use of PHQ-9 questionnaire. To determine the association between HIV status and depressive symptoms logistic regression analysis was used.

Results: The study included 1,927 participants, of which 887 (46%) were HIV-positive. The prevalence of depressive symptoms in the population was 12.5%. HIV-infected participants were more likely to have depressive symptoms than those being HIV negative (OR = 1.34, 95% CI 1.01-1.77). However, this association was not statistically significant after adjusting for confounding factors (OR = 1.22, 95% CI 0.92-1.63). Compared to HIV-negative participants, ART naïve participants had statistically significant higher odds of depressive symptoms (OR = 1.84, 95% CI 1.20-2.78). This association remained after adjusting for confounders (OR = 1.72, 95% CI 1.11-2.61). There was no statistically significant difference in depressive symptoms between HIV-negative participants and those on ART, regardless of their treatment regimen.

Conclusion: The study showed that primarily HIV-infected patients who are not on ART are at risk of having depressive symptoms, suggesting to commence ART as soon as possible. Further

research is necessary to determine the causal relationship between HIV status and depressive symptoms and to identify changes in the occurrence of depressive symptoms over time.

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Burden of Non-communicable Diseases Among People Living With HIV in Nairobi and Kajiado Counties, Kenya

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Background: Access to effective antiretroviral therapy (ART) has translated to increased life expectancy in people living with Human Immunodeficiency Virus (HIV). A large ageing HIV-infected population is associated with an increased prevalence of non-communicable diseases (NCDs). Although HIV/NCD service integration is cost-effective and impactful, there is scanty facility level data to inform implementation. We evaluated screening efforts and burden of NCDs at 70 facilities providing HIV care in Kenya, and assessed level of awareness of health administrators on NCD policies and infrastructure.

Material and Methods: We purposively sampled 38 facilities in Nairobi (urban) and 32 in Kajiado (periurban-rural). We trained 12 evaluators and conducted a cross-sectional survey between October 2022 and December 2022, using a validated tool. Data on NCD indicators was extracted from electronic medical record (EMR) systems and abstracted from patient files in non-EMR sites. Knowledge data was obtained through verbal interviews. Analyses employed simple descriptive statistics.

Results: In the 12 months preceding data collection, 96,693 visits to the CCC were recorded (n=67,535 [70%] for Nairobi, n=29,158 [30%] for Kajiado). Overall, 55.6% (n=53,781) of visits were screened for hypertension; 15.5% (n=14,970) for diabetes; 11.4% (n=11,061) for chronic kidney

disease; 18.1% (n=17,456) for cancer, and 58.7% (n=56,766) for overweight. Of visits screened, 4.8% (n=2,576) were positive for hypertension; 4.7% (n=711) for diabetes, 6.3% (n=699) for chronic kidney disease; 2.2% (n=389) for cancer; and 16.2% (n=9,188) for overweight. Hypertension and diabetes prevalence was higher in Kajiado (6.2% vs 4.1%; 24.5% vs 1.8%, respectively). Cancer prevalence was slightly higher in Nairobi (2.4% vs 1.7%). Cancer and cardiovascular disease proportions were higher in males (54.8%; 73.5%), while diabetes was higher in females (59.1%). Awareness on availability of county cancer registries was higher in Nairobi (57% vs 50%), as was awareness of integrated NCD policies (58% vs 42%). Knowledge of availability of policies for diabetes was lower in Kajiado (26% vs 50%). Kajiado respondents recorded a higher level of awareness on national screening programs for cervical and breast cancer (88% vs 79%; 59% vs 55%, respectively).

Conclusion: The highlighted screening and awareness gaps call for urgent mitigation using a primary health care approach.

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The Role of Social Support in Overcoming Barriers to HIV Care Engagement for Adolescents Living With HIV and Comorbid Depression in Malawi

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Background: Sub-Saharan Africa is home to the largest population of adolescents living with HIV (ALWH). Depression is common among ALWH in Malawi and adversely affects engagement in HIV care. This qualitative study focuses on ALWH's experiences with depression and its impact on

engagement in HIV care while exploring the types and sources of social support that may improve both depression and HIV care outcomes.

Material and Methods: We are conducting in-depth interviews (IDIs), social support mapping exercises, and focus group discussions (FGDs) with ALWH and comorbid depression to explore experiences of depression and its impact on engagement in HIV care, as well as sources and types of available social support. A targeted sample of ALWH are being recruited from three public ART clinics in Lilongwe, Malawi. To date, we have conducted three IDIs and two social support mapping exercises with a goal of completing 10 IDIs, 10 social support mapping, and five FGDs by March 2023.

Results: Study participants range in age from 13 to 19 and have acquired HIV through both vertical and horizontal transmission. Participants describe how depressive symptoms, particularly feelings of worthlessness and negative coping mechanisms, hamper motivation to stay engaged in HIV care. Further, preliminary analysis suggests that other factors including fear of HIV status disclosure, fear and/or experiences being mocked or laughed at because of their HIV status or engaging in HIV care, travel time to the ART clinic, and food insecurity all contributed to poor HIV care engagement. However, social support from family and friends, particularly emotional, informational, and tangible support, may help ALWH with comorbid depression overcome barriers to HIV care engagement. For example, reliable relationships, compassion and concern for ALWH's wellbeing, encouragement to take medications, and monetary assistance for logistical challenges were all described as facilitating sustained engagement in HIV care.

Conclusion: Depression treatment interventions for ALWH that are augmented with social support components may have important potential to improve HIV care engagement.

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Pediatrics HIV and Asymptomatic Malaria Parasitemia (AMP) Co-Infection

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Background: Pediatrics HIV viral suppression remain a major challenge across Africa. In this study, we sought to establish the relationship between AMP and a sustained plasma HIV viremia among a population of pediatrics clients on Antiretroviral Therapy (ART). We also seek to determine the prevalence of AMP among the study population.

Material and Methods: 180 pediatrics clients on ART at four (4) Comprehensive Hospitals in Jos, Nigeria, participated in this study between the months of October to December 2022. The mean age of the study participants was 13 years. Venous blood was drawn from the participants after consents were sought, and ethical approval obtained from the Plateau State Specialist Hospital (PSSH) Research and Ethics Committee. All samples were screened for AMP using the CareStart[®] HRP2 Malaria kit. The Absolute and % CD4 values of the clients were obtained using the BD Presto[®] CD4 Analyzer. The separated plasma samples were assayed for HIV viral load using the Roche Cobas C4800[®] system. Obtained data were analyzed using simple descriptive statistics.

Results: From the 180 participants in this study, 12.8% (23) have AMP. 90.6% (163) were virally suppressed (<1000 copies/ml), while 9.4% (17) were virally unsuppressed (>1000 copies/ml). 11.7% (19/163) of the virally suppressed population have AMP, with a mean absolute and % CD4 values of 648 and 31% respectively. The virally suppressed population without AMP have a mean absolute and % CD4 values of 719 and 32% respectively. 24% (4/17) of the virally unsuppressed population have AMP, with a mean absolute and % CD4 values of 514 and 26% respectively. The virally unsuppressed population without AMP have a mean absolute and % CD4 values of 292 and 16% respectively.

Conclusion: Our study shows that there is a high prevalence of AMP among the study populations (11.7% and 24% respectively). The high AMP prevalence among the virally unsuppressed with a mean absolute and % CD4 values of 514 and 26% alludes to the fact that malaria co-infection with HIV fosters a dysregulated immune complex response which favors an increase HIV plasma viremia. We thus recommend the routine use of Malaria IPT in pediatrics HIV clients.

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Distribution and Predictors of Fibrotic Liver Disease among People Living with HIV/AIDS in Urban and Rural Uganda

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Background: Liver fibrosis is common among HIV-infected patients. Risk factors vary by location. Understanding this variation may inform prevention strategies. We compared the prevalence and correlates of liver fibrosis among HIV-infected patients attending care clinics in Uganda.

Material and Methods: Cross sectional study involving 2030 HIV-infected patients attending care clinics in urban and rural Uganda. Liver fibrosis was defined as liver stiffness measurement (LSM) >7.1KPa. Proportions and correlates of liver fibrosis were assessed and compared using logistic regression stratified by gender and site.

Results: Prevalence of liver fibrosis was higher among participants in the rural clinic (15% Vs 11%; p0.017). History of tobacco use (urban p0.022; rural p0.035) and serologic evidence of hepatitis C infection (HCV) (urban p0.028; rural p0.03) was associated with liver fibrosis in all men. Elevated liver transaminases (urban p0.002; rural p0.028) and increasing age (urban p0.008; rural p0.052) were risk factors among all women. Tobacco use

among women was only a risk factor in those attending the rural clinic (p0.003) and detectable HIV viral load (p0.002) for men in the urban clinic.

Conclusion: Liver fibrosis is prevalent among HIV-infected persons in Uganda. HIV viral suppression and avoiding tobacco may be strategies to prevent liver fibrosis and cancer risk.

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Diabetes Mellitus Among Adults Living With HIV in a Multi-Center Chronic Care Program: The Case of TASO Uganda

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Background: Universal access to life-saving anti-retroviral therapy (ART) has led to sharp declines in HIV-related morbidity and mortality world-over. As PLHIV survive into older adulthood, the confluence of HIV and age-related non-communicable diseases (NCDs) such as hypertension (HTN) and diabetes mellitus (DM) is a growing concern. Moreover, evidence suggests that these NCDs may occur at younger ages in PLHIV than among HIV negative individuals. We aimed to determine the prevalence of DM to guide resource allocation for integrated HIV-DM care. Purpose: To determine the prevalence of HTN among PLHIV attending chronic care clinics in Uganda

Material and Methods: We reviewed clinical care records of all PLHIV active on ART by end of December 2022, across ten TASO centers, for a record of diagnosis of DM. We used MS Excel and STATA to determine the prevalence of DM, and determine associations among sex, age group and DM, applying Chi square statistics, binary logistic regression and Mann Whitney U test as appropriate.

Results: We reviewed a total of 69,047 records. Of these, 67.3% (46,457/69,047) were female, 54.1% (37,378/69,047) were aged over 45 years, median age was 46 years (IQR: 38 – 54 years), median duration on ART was 122.0 months (IQR: 72.8 – 159.3). Overall prevalence of DM was 1.2% (853/69,047), and was 0.0% (0/1,767), 0.4% (16/3,844), 0.7% (62/8,460), 1.0% (174/17,598) and 1.6% (601/37,378) for age groups <15, 15 – 24, 25 – 34, 35 – 44 and 45+ years respectively. Compared to individuals without DM, those with DM had a longer duration on ART (median 130.4 vs 120.8 months, $p < 0.01$)

Conclusion: DM is prevalent among PLHIV on ART. DM screening should be systematically integrated in HIV care, for timely identification of young adults with co-morbid DM and HIV.

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Using Community Owned Resource Persons Model Improves Tuberculosis Treatment Outcomes in a Nomadic Population Of Karamoja Region, North Eastern Uganda

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Background: The Karamoja region has the highest Tuberculosis prevalence in Uganda, with the lowest cure rate of 32.8% and Treatment success rate (TSR) of 69.4% due to increased interruption of treatment attributed to the long distances to the few health facilities (HFs), insecurity, and pastoral nature of the Karamojong. This was further augmented by the COVID pandemic lockdowns where both the patients and health workers could not travel to HFs. To improve treatment completion rates The AIDs Support Organization (TASO) through support from Center for Disease Control and Prevention (CDC) implemented a differentiated service delivery model involving the use of community-owned resource persons (CORPS) to

improve treatment completion and cure rate. In this paper, we describe the contribution of the CORPs in improving patient treatment outcomes in the south Karamoja region.

Material and Methods: From April 2021, eight trained CORPS were engaged to support four high-volume diagnostic and treatment units in four districts. TASO supported the CORPs to deliver TB drugs to patients who could not travel to the HFs. The CORPs also conducted physical and phone call follow-ups of patients who missed appointments/who could not return to the HFs and returned them to care, CORPs from the same locality as the patient were tasked to do treatment adherence support and community sputum collection for monitoring. With support from local leaders and religious workers, CORPS improved community awareness by conducting community dialogues.

Results: The TSR improved by 14.7% from 76.3% in April-June 2021 to 91% in October-December 2022 cohorts, also the cure rate increased steadily by 50% from 28% to 78% in the respective cohorts, with a reduction in lost to follow-up from 12.6% to 3%, treatment failure from 3.6% to 0%, the Death rate from 8.1% to 8% and 0% non-evaluation.

Conclusion: Engaging skilled community resource persons strengthened the health systems among the nomadic population in Uganda significantly improving the TB client's treatment outcomes. Therefore, we recommend the use of the CORPS-led model as one of the key strategies for improving treatment outcomes-cure and TSR in order to reduce TB-related mobility and mortality thus achieving the goal of ending TB.

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Impact of a Mobile Phone-Based Interactive Voice Response Software on Tuberculosis Treatment Outcomes at Public Facilities in Uganda

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Background: Tuberculosis (TB) is the leading infectious cause of death. Treatment success rate for TB in Uganda is 77% and barriers to optimal results include inadequate engagement and empowerment of patients, sub-optimal screening of presumptive TB cases and high attrition. Digital health innovations (DHIs) may address operational barriers and improve treatment. This study investigated the effect of an interactive voice response system (CFLTb) on TB treatment success among drug-susceptible TB patients at five public health facilities in Uganda.

Material and Methods: An open-label randomized controlled trial; participants with TB randomized (1:1) to CFL-TB or standard of care (SOC). CFL-TB is an interactive voice response (IVR) software providing daily adherence call reminders, health tips, appointment reminders, and allows remote symptom reporting. Participants interviewed at months 0(baseline), 2, and 6. Data collected on socio-demographics and TB knowledge. TB treatment response and appointment data taken from Ministry Of Health and CFL-TB records. Follow-up continued until completion of treatment (six months), or lost to follow-up, if earlier. Treatment success, missed visits rates were compared using chi-square.

Results: By December 2021,260/274 participants had been enrolled,113 completed 6 months' treatment (CFL-TB 129;SOC 131). Median (IQR) age, body mass index and distance from health facility were 34.4(26.6-45.3) years,19.6(17.4-21.4), and 30(25-60) kilometers, respectively. Overall,

165(63.5%) were male and 90(34.6%) had HIV. At baseline,84/260(32%) not aware that TB treatment halts transmission,72/260(27.7%) not aware of TB vaccination,112/260(43.1%) not aware of TB resistance arises from poor treatment adherence. At 6 months, TB treatment success rate higher in the CFL-TB arm 51/54 (94.4%) than SOC 52/59(88.1%) [crude RR 0.47,95%CI 0.13-1.72,p=0.326]. Fewer missed visits noted in the intervention arm (3/129) vs SOC(6/131) [Crude RR =0.51,95%CI 0.13-1.99,p=0.320].

Conclusion: There was a trend towards higher treatment outcomes and fewer missed visits in TB patients who received software-enhanced support compared to SOC. DHIs may be helpful especially during epidemics that preclude physical facility visits.

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Introduction of the Optimal Regimen for Cryptococcal Meningitis Treatment Into Routine HIV Care in Africa: Lessons From National Implementation in Uganda

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Background: Before 2019, fluconazole remained the mainstay of Cryptococcal Meningitis (CM) treatment (outside study settings) in Uganda despite the unacceptably mortality rate of 70% with this monotherapy. The Ministry of Health, Uganda (MOH), through the Unitaid-Clinton Health Access Initiative, Inc. (CHAI) AHD initiative introduced the optimal treatment drugs; flucytosine (5FC) and liposomal amphotericin B (L-AmB) for the management of CM in people with advanced HIV disease. This initiative aimed to reduce morbidity and mortality from CM through improved access to these optimal products.

Material and Methods: In November 2020, the MOH, with support from the CHAI-Unitaid AHD initiative, introduced the optimal drugs; 5FC and L-AmB at 19 regional referral hospitals to diagnose and treat CM. Client volume, HIV burden, and geographic coverage informed facility selection. Prior to distributing the commodities to sites, training on the use of the products and CM management was conducted for healthcare workers (HCWs). Post-training supportive supervision visits and virtual webinars were conducted to address any gaps identified and build HCW confidence with product use.

Results: In 2021, 951 clients received CM treatment at the 18 facilities, and 607 (64%) of these clients were treated using the two optimal CM medications. Longitudinal tracking of treatment outcomes was low especially post admission as most clients returned to their ART sites outside the CM treatment sites. Commodity stockouts and knowledge capacity gaps due to the high turnover of HCWs who had been trained on CM management contributed to gaps in access. Supportive supervision visits, and cross-facility virtual webinars utilizing case studies, were found to be instrumental for continuous mentorship of HCWs. The recently concluded AMBITION trial regimen could further improve access to this treatment through regimen simplification.

Conclusion: The introduction and availability of optimal CM medications is expected to reduce CM-related morbidity and mortality in Uganda, and the lessons learned from its introduction may serve as a blueprint for other countries in the region. Increased availability of these commodities in Uganda, via additional donor commitment for procurement and decentralization to lower-level health facilities, has the potential for even larger impact in reducing CM-related morbidity and mortality across the country.

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Understanding and Dealing With Tuberculosis Case Finding Bottlenecks at Private Not for Profit Health Facilities in Acholi Region, Uganda

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Background: The nine USAID Local Services Delivery for HIV/AIDS Activity (LSDA) supported health facilities in Acholi region were expected to identify 358 TB patients every quarter. However, analysis of the routine HMIS data revealed that 125 (35%) TB patients were identified on a quarterly basis. In November 2021, a root cause analysis (RCA) for the low TB case finding in Acholi region revealed knowledge gap among the health workers and lack of tools for screening as the major root causes for the low TB case finding. LSDA instituted continuous quality improvement interventions to improve TB case finding in Acholi region.

Material and Methods: Following the RCA findings, USAID LSDA trained all the district TB focal persons of the six districts where LSDA facilities are located in a 5-days detailed Integrated Comprehensive TB and Leprosy Management guidelines (ICTLM) training. The district focal persons were then supported to conduct site level trainings in their respective districts. All facilities were provided with ICF stamps, ICF guides, Active TB case finding tool kit and the ICTLM guidelines and desk job aids. Monthly Support supervision, mentorship and coaching's were conducted using a quality improvement approach at all the facilities. Weekly data review and feedback meetings were conducted by facility teams.

Results: A total of 795 TB cases were identified between October 2021 and July 2022. The number of TB cases kept improving every quarter. Details of the quarterly achievements are in the graph below.

Conclusion: Building capacity of health workers in TB care, provision of the requisite tools, improved documentation and use of data contributed to improvement in TB case finding. Discussion: The great improvement in TB case finding is attributed to the improved knowledge, skills and attitude of health workers in the TB care cascade. Provision of the tools and reference materials like job aids coupled with use of quality improvement approach in TB care also contributed to the observed improvements.

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Prevalence and Effect of Intimate Partner Violence (IPV) Among Discordant Clients Who Are Recipients of HIV Care; Survey of Busia County; Kenya.

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Background: Harmful gender norms and inequitable attitudes about gender put individuals at risk for HIV and serve as a barrier to the uptake of HIV prevention, testing, and care and treatment services. Gender-based violence poses a significant barrier to our efforts to achieve HIV epidemic control. Violence and harmful gender norms inhibit one's ability to access HTS and disclose their status. Many people report fear of violence and/or abandonment if their partner learns their status. Violence is associated with reduced linkage to HIV care services and initiation of ART. The objective is to determine the prevalence and effect of IPV to sero discordant clients receiving HIV care.

Material and Methods: The study population includes clients who are receiving HIV care and are in Sero discordant relationships within Busia County in Kenya. Development of the questionnaire and identification of 5 study sites with high HIV Sero discordant. the facilities included Nambale Sub-County hospital, Bumala A & B health centers, Khunyangu sub-county hospital & Busia CRH. Identification of interviewers and distribution of the survey tool. Data entry into excel and analysis using Pivot table.

Results: The study respondents were 82, Males 21% and females 79% with 39% reporting having physical violence, 51% emotional violence, and 0.004% reporting having sexual violence. Out of the respondents, a prevalence of 54% of IPV was noted with most of the reporting has ever missed an appointment with an average of 10 years on ART. The respondents felt comfortable reporting the cases to chiefs and police and the Majority of the respondents who did not report fear of marriage or relationship breakage felt if they reported could not get help. 43% of the Violation started before the HIV diagnosis and 50% reported Worsening of the violence after the HIV diagnosis. 69% of the respondents reported the Violation makes them feel that they can stop the ARVs and 88% reported ever missing their clinic or ARVs due to violation from the perpetrator.

Conclusion: HIV diagnosis can increase GBV violation among discordant couples. Recipients of HIV care in discordant relationships are to be given routine psychosocial support.

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Mental Disorders and Adherence to Antiretroviral Treatment in Health Facilities in Mozambique

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Background: Less adherence to antiretroviral treatment (ART) has been found among people suffering from HIV (PWH) with comorbid mental disorders like depression and alcohol use in Mozambique, a Sub-Saharan African country. However, less is explored with regards to other mental disorders.

Material and Methods: This study assessed the association of multiple mental disorders and adherence to ART based on the data from primary/tertiary health care facilities in Maputo and Nampula, Mozambique. We administered a sociodemographic questionnaire, Mini International Neuropsychiatric Interview (MINI) Plus 4.0.0 adapted for use in Mozambique to assess mental conditions, and a 3-item self-report to measure ART adherence.

Results: Out of 1469 participants, 409 were HIV positive (self-report), with an average age of 36.7 years (SD=9.8), and 30.4% were male. The most common mental disorders were major depressive disorder (27.34%) followed by psychosis (22.03%), suicidal ideation/behavior (15.44%), and alcohol-use disorder (8.35%). Higher levels of non-adherence to ART [(Mean Difference=1.19, 95% CI: 1.04, 1.37)] and the likelihood of missing at least one dose in the last 30 days (OR=3.06, 95% CI: 2.00, 4.67) were found in participants with any mental disorder compared to those without a mental disorder. The highest levels of non-adherence were observed among those with drug use disorders and panic disorder.

Conclusion: In Mozambique, PWH with any co-occurring mental conditions had a lower probability of ART adherence. Integrating comprehensive mental health assessment and treatment and ART adherence interventions tailored to PWH with co-occurring mental disorders is necessary to attain optimal ART adherence and reach the UNAIDS ART target.

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Hypertension Treatment Outcome Among People Living With HIV on Dolutegravir Antiretroviral Therapy and One Form of Anti-hypertensive Therapy in Northern and Southern Nigeria

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Background: Clinical management of hypertension in people living with HIV requires awareness about drug-drug interaction between antiretroviral drugs and anti-hypertensive for effective blood pressure control. This study aims to assess hypertension treatment outcome among PLHIV on Dolutegravir antiretroviral drugs who had clinically diagnosed hypertension, and its associated factors.

Material and Methods: A cross sectional study design that measures the blood pressure of known clinically diagnosed hypertensive PLHIV on dolutegravir antiretroviral drugs and one form of antihypertensive drug, to assess the anti-hypertensive therapy outcome. The study was done in November 2022, in two HIV clinics in Northern and Southern Nigeria. A total of 410 PLHIVs were recruited. Hypertension was defined as patients with systolic BP of ≥ 140 mmHg and diastolic BP of ≥ 90 mmHg. Outcome variable was patient BP status categorized as normal and uncontrolled hypertension (Further categorized into Grade 1, and Grade 2 hypertension). Data was analyzed using SPSS IBM version 20 and presented in tables. Univariate and multivariate logistic regression was done to assess factors associated with hypertension treatment outcome at p of 0.05.

Results: Most participants were females (64.6%), in the age range of 40-59 years (67.8%). Majority were HIV virally-suppressed (92.4%), without any co-morbid condition such as diabetes (98.3%) or tuberculosis (83.9%). About 60.5% were on thiazide only anti-hypertensive. 197 (48.1%) still have uncontrolled hypertension after an average period of anti-hypertensive use of 6.7 ± 4.5 years (Grade 1 hypertension, 30.7%, Grade 2 hypertension, 17.3%). After controlling for confounders, respondents in the age group 60 years and above and those on other antihypertensive (aldomet only, ACE inhibitors or angiotensin blockers) are two and three times likely to have uncontrolled hypertension than colleagues in age range 20-39 years and on calcium-channel blockers respectively. Furthermore, participants on thiazide only (AOR = 0.519, CI = 0.303 – 0.887) or thiazide-based therapy (AOR = 0.482, CI = 0.228 – 1.020), have lower likelihood of uncontrolled hypertension compared to those on Calcium-channel blocker only.

Conclusion: The burden of uncontrolled hypertension is high among hypertensive PLHIV on dolutegravir-based ARV. This study shows that thiazide-based antihypertensive is more effective in controlling blood pressure in HIV patients with hypertension.

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Are Viral Load Un-Suppression and Persistent Low-Level Viremia Associated With High Blood Pressure (BP) Among PLHIV? Findings From a Retrospective Longitudinal Study in Northern and Southern Nigeria

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Background: Globally, there are several emerging theories on the reasons for the relatively high non-communicable disease burden among people living with HIV beyond what could be attributed to population ageing. Widely discussed amongst these were the roles of chronic inflammation and immune activation, due to persistent low-level viremia or un-suppression, in increasing hypertension risk. This study aims to assess the association between PLHIV BP, their blood HIV viremic level, and period of ART use.

Material and Methods: Retrospective longitudinal study that reviewed BP records of 2615 PLHIV enrolled into HIV care between 2007 – 2021 in two HIV clinics in Nigeria. Outcome variables were systolic BP and diastolic BP records either at the point of clinically diagnosed hypertension, or at the end of the study (December 2021) for patients who were normotensive throughout. Independent variables included respondents age, respondent's HIV viremic and duration of antiretroviral drug (ARV) use. Clustered box was plotted to describe the interaction pattern. Regression analysis with interaction was done to show interaction magnitude and direction at p of 0.05.

Results: Participants' mean age was 45.3 ± 9.8 years. Majority were females (74.2%), on DTG-based ARV (93.1%). The average duration of ARV use was 7.9 ± 4.1 years. Findings show higher median DBP and SBP among the low-level viremic and virally unsuppressed patient group compared to the virally suppressed group in the middle age and old age ranges. The difference in the BP across the HIV viremic level was more marked among the old age population (≥ 60 years). In addition, median DBP and SBP reduced with increase in period of ARV use across all the age groups. Regression analysis with interaction shows that age potentiates the effect of patient HIV viremic level on their DBP and SBP. Furthermore, ARV use reduces the effect age on patient blood pressure.

Conclusion: HIV viremic level and ART use has additive and antagonist moderating effect respectively on the relationship between age and BP of PLHIV. The effect is more marked among elderly. Early ART initiation, strict ART adherence and viremic control in should be prioritized, as strategies to control high BP in adult PLHIV.

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Prevalence of Risk and Non-communicable Disease in Newly Diagnosed HIV Infected Patients in North Central Nigeria

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Background: Non-communicable diseases (NCDs) are a leading cause of morbidity and mortality in low- and middle-income countries (LMICs). The HIV epidemic in LMICs long-term use of antiretroviral therapy (ART) and increasing life expectancy have been reported as contributing to this trend. In this study, we identified and characterized the risk and prevalence of NCDs among clients newly diagnosed with HIV in Abuja, Nigeria.

Material and Methods: We conducted a cross-sectional study and enrolled newly tested HIV

clients who met pre-set eligibility criteria and provided informed consent. Over a period of 12 months, clients from purposively selected PEPFAR funded HIV testing health facilities in Abuja Nigeria were enrolled in the study. We administered an interviewer-based questionnaire and captured sociodemographic, behavioral, clinical (existing NCDs) and associated risk factors as well as collected samples (blood, cervical swab, stool, urine) for safety labs and specialized tests (Viral load, CD4, hepatitis B & C, prostate specific antigen test and cervical visual inspection assessment). We performed statistical analysis using STATA version 17.

Results: Of the 354 participants enrolled, 154 were HIV positive and 200 were HIV negative. The mean age was 43.2 years (SD 8.1), with the majority being female (52.5%; 186). Approximately a quarter of all clients tested had at least one NCD (26.5%), with commonest NCD reported as cardiovascular disease (12.7%) When stratified by HIV status, 23.2% HIV+ compared with 29% HIV- had at least one NCD ($p=0.22$). On assessment of risk factors, 15.3% HIV+ compared to 5.1% HIV- had hepatitis B infection ($p<0.01$) while 8.9% compared to 9.1% were positive for hepatitis C ($p=0.94$) respectively. Similarly, passive smoking was higher among HIV+ compared to HIV- (21.2% vs 7.5%; $p<0.01$).

Conclusion: Surprisingly risk for cardiovascular disease based on BMI (overweight and obesity) was lower among the HIV+ (36.4%) compared to the HIV- (76.1%). There is high burden of NCDs among clients at risk of HIV infection and this risk varies by HIV status for some NCDs. While HIV- individuals seemingly had a higher risk of cardiovascular diseases, HIV+ individuals reportedly had a higher risk for chronic liver diseases. Understanding this difference is key for targeted or vertical public health interventions.

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Impact of TB/HIV Joint Policies on TB Treatment Outcomes: A Ten-Year Review Among TB/HIV Clients From the Largest Tertiary Hospital in Ghana

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Background: Tuberculosis (TB) and HIV co-infection is still a challenge in Ghana. Ghana has a joint TB/HIV policy and guidelines which was first rolled out in 2007 and revised in 2014. Revision was to consolidate gains already achieved and address identified gaps after the initial roll out. We assessed the impact of TB/HIV integration on TB treatment outcomes.

Material and Methods: Anonymized patient data was collated from TB registers from 2012-2021 at the largest tertiary hospital in Ghana. Treatment success was defined as either completion of TB treatment or cured. Unsuccessful treatment defined as either TB treatment failure, lost to follow up (LTFU) or death. Data was analyzed using Stata v.16 to determine TB treatment outcomes prior to and after policy revision.

Results: Treatment completion rates declined prior to 2014, post-2014 there was a steady trend between 43.8% (95%CI;33.9-54.4)-32.7%(95%CI;21.4-46.4) with incremental fluctuations in 2015 and 2021 to 52.5%(95%CI;39.6-65.1) and 51.2%(95%CI;36.8-67.7). Comparably between 2012-2016, mortality rates increased from 30.0% (95%CI;21.7-39.8) to a peak of 47.2% (95%CI;36.9-57.7), followed by a subtle plateau then a steady decline to 29.3% (95%CI; 15.6-43.7) in 2021. A notable rise in deaths was also seen in 2020. Over the 10-year period, cure rates saw a progressive downward trend from 6.0% (95%CI;2.7-13.8)-2.4%(95%CI;0.3-16.6), LTFU rates increased from 1.0% (95%CI;0.1-7.0)-14.6%(95%CI;6.7-30.2) and failure rates remained low.

Conclusion: Treatment completion rates and mortality rates showed inconsistent gains post-2014, with unremarkable changes in the trends of the other treatment outcomes. There is need for a national evaluation of TB/HIV integrated activities to achieve sustainable positive long-term impact on treatment outcomes.

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Obstructive Sleep Apnoea Is Associated With Higher Cardiometabolic Risk Among People Living With HIV: A Case for Screening in Africa

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Background: Obstructive sleep apnoea (OSA), the most common respiratory sleep disorder, is associated with an increased risk for cardiometabolic disease. HIV has been found to be an additional risk factor for OSA, even in young patients and those without obesity. Despite the potential impact of OSA on quality of life and cardiometabolic health, there are limited data among people living with HIV (PLWH) in southern Africa where both HIV and obesity are at epidemic levels and cardiometabolic comorbidities are common. Understanding the extent of the problem is a critical step towards developing appropriate interventions for less-resourced high HIV burden settings.

Material and Methods: This is a cross-sectional, observational study of a well-characterised cohort of patients enrolled in the ADVANCE trial in South Africa. Between September 2021–November 2022, OSA risk was evaluated using the Berlin questionnaire (BQ), a screening tool with high specificity to detect OSA and comprised of 10 questions in three categories. Category one, high-risk was defined as persistent symptoms related to snoring; category two, high-risk was defined as persistent daytime sleepiness, drowsy driving, or both and category three, high-risk was defined as a history of hypertension or a body mass index (BMI) ≥ 30 kg/m². Overall OSA risk was defined as high-risk in at least two out of three categories. Demographic and known cardiometabolic risk (CMR) markers were compared between participants at low-risk versus high-risk for OSA and a CMR score was calculated using waist

circumference (WC), fasting glucose, high-density lipoprotein cholesterol (HDL-C), triglycerides, and mean arterial blood pressure.

Results: Of the 210 individuals included in this analysis, the overall mean age was 38.4 years, 62.4 % were female, 41 % had hypertension and 17.1 % were high-risk for OSA. Wilcoxon rank sum tests showed high-risk OSA versus low-risk OSA participants had a greater BMI ($P < 0.0001$), higher WC ($p = 0.0053$), and higher triglycerides ($p = 0.0118$). CMR score was greater in patients at high-risk of OSA than those at low risk ($p = 0.0002$).

Conclusion: In a relatively young cohort of PLWH, CMR and hypertension were common. OSA is a modifiable risk factor for cardiometabolic disease, yet not screened for in routine HIV care.

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Sexually Transmitted Infections Amongst Female Sex Workers in Five South African Districts

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Background: Female sex workers (FSWs) are a high-risk group for acquiring sexually transmitted infections (STIs). South Africa uses a syndromic approach to STI case management. This has a poor predictive value for chlamydial or gonococcal infections in vaginal discharge syndrome and cannot diagnose asymptomatic infections which comprise the larger proportion of STIs. The Wits RHI PEPFAR-funded Key Populations programme, through USAID, provides dedicated HIV-related services to FSWs in five districts in South Africa. Our analysis aimed to understand the prevalence of STI syndromes amongst FSWs accessing our services.

Material and Methods: Professional nurses conducted symptomatic screening followed by a clinical evaluation to diagnose the following STI syndromes: lower abdominal pain, vaginal

discharge, or genital ulcer. Clinic staff collected patient data manually in clinical stationary and entered records into a REDCap database. We used data collected between January 2019 and September 2022 to summarise client characteristics. We determined STI syndrome prevalence using descriptive statistics in Stata v16.

Results: During the review period, professional nurses provided clinical consultations to 22 223 FSWs. Patients' average age was 32 years and their duration in sex work three years. Of those consulted, 10% (2 154/22 223) were diagnosed with an STI syndrome and 40% (868/2 154) tested HIV-positive. The majority of FSWs reported condom use with each sex act with male clients (76%:1 628/2 154). More than half (58%:1 138/1958) perceived themselves at high risk of acquiring HIV. The most commonly self-reported STI symptom was painful urination (43%:919/2 145). The most frequent syndromic diagnoses included vaginal discharge (52%: 1 122/2 154) and lower abdominal pain (43%: 924/ 2 154). Clinicians prescribed and dispensed at least one antimicrobial for every STI syndrome diagnosed, according to accepted national guidelines.

Conclusion: Although the prevalence of STIs in our cohort of FSWs was lower than the 20% reported in South African women, asymptomatic STIs may go largely undiagnosed. An aetiological approach is warranted to accurately diagnose and manage STIs in South Africa, especially in high-risk groups. Moreover, this practice may promote antimicrobial stewardship and possibly reduce over-treatment and associated drug resistance.

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Prevalence of DM in Patients With Co-infection HIV /TB Province and City of Maputo, Mozambique, 2021-2022

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Background: (TB) and HIV/AIDS are still a major challenge for public health. Mozambique is one of those countries where the trilateral overlap between TB, DM and HIV may have implications for the control on the three diseases. Objectives: Determine the prevalence of DM in patients with TB/HIV co-infection and describe the associated risk factors.

Material and Methods: The cross-sectional study was conducted in 4 Health Centers from March 2021 to July 2022. All new cases of pulmonary tuberculosis confirmed by bacilloscopy (BK) or GenExpert and positive for HIV were recruited and tested for DM measuring glycosylated hemoglobin (HbA1c). Socio-demographic variables were collected through a questionnaire with closed questions.

Results: Of the 166 recruited patients, 57.8% (n96) were male, with aged between 17-85 years, with a mean age of 39 years. Of those, 96.4% (n160) were on ART, of which 76.5% were on first line (TDF+3TC+DTG) for TB/HIV. The prevalence of DM (HbA1c> 6.5%) in patients with TB/HIV co-infection was 16.3% (n27) and prediabetes (HbA1c 6.0-6.4%) was 13.9% (n23). Of the diabetics, 33.3% (9/27) had a family history of TB, 7.4% (2/27) a family history of DM, 55.5% (15/27) alcoholic habits, 14.8% (4 /27) smoking habits, 92.5% (25/27) did not practice physical activity. Of the pre-diabetics, 34.7% (8/23) had a family history of TB, 17.3% (4/23) a family history of DM, 56% (13/23) alcoholic habits, 78.2% (18 /23) did not practice physical activity.

Conclusion: This study show that one third of patients with TB/ HIV co-infection have a high prevalence of diabetes and pre-diabetes. So, is recommended to establish screening test for DM amongst TB/HIV co-infection patients.

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No Evidence for an Association of HIV and Antiviral Treatment With Changes in Framingham Cardiovascular Risk Score in the Ndlovu Cohort Study

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Background: HIV and antiretroviral therapy (ART) have been associated with increased cardiovascular risk in high-income countries. We studied the association between HIV and ART and non-laboratory Framingham Risk Score (FRS) during 36-month follow-up of a rural cohort in South Africa, a middle-income country.

Material and Methods: Longitudinal analysis of the Ndlovu Cohort Study (NCS) using baseline to 36 months follow-up data. Information on demographics, HIV and ART status and cardiometabolic measures of participants was obtained from the NCS from 2014 to 2019. FRS was used as measure of cardiovascular disease (CVD) risk. Linear mixed models were used to study trends of FRS over time and the association with HIV.

Results: Analysis included 1136 participants, 609 (54 %) with HIV, of which 495 (81%) were on ART. 9.8% Participants had a high FRS at baseline. People living with HIV (PLHIV) had a 3.2% lower FRS than HIV-negative participants ($p < 0.001$). FRS increased similarly for both PLHIV and HIV-negative participants over time. Other factors associated with FRS were secondary, and college and university education (β -value: -0.075, $p < 0.001$; β -value: -0.084, $p < 0.001$) and alcohol consumption (β -value: 0.011, $p < 0.001$).

Conclusion: No association of HIV and ART with changes in FRS over a 36-month period was observed, suggesting the need for further research using clinical endpoints to elucidate the effects of HIV and ART on CVD risk. Population-based prevention of CVD risk factors is warranted, regardless of HIV status. Discussion: CVD risk increased for both PLHIV and HIV negative

participants over a period of 36 months, suggesting classical risk factors rather than HIV status or ART are drivers of CVD risk. PLHIV had a significantly lower overall FRS than their HIV negative counterparts, possibly related to HIV itself or a more frequent interaction with healthcare services.

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Early Experiences of a Novel Integrated HIV-Geriatric Clinic at Newlands Clinic in Zimbabwe

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Background: Following the global success of effective antiretroviral therapy (ART) programs, the population of older people living with HIV (OPLH) is increasing. Due to prioritization of access to ART, focus on the burden of disease in this cohort has largely been overlooked. As the proportion of OPLH increases in sub-Saharan Africa, services to address their complex needs are urgently required.

Material and Methods: In October 2022 Newlands Clinic designed a novel integrated HIV-geriatric clinic (IHGC) based on the World Health Organization's Integrated Care of Older People guidelines. Patients >65 years were reviewed by a multidisciplinary team. Validated tools were used to assess cardiovascular risk, mental health, cognition, nutritional status, osteoporotic fracture risk and geriatric syndromes. Electronic medical records of all IHGC attendees from October 2022-January 2023 were analyzed using Stata software. Interventions included initiation of statin and vitamin B12 therapy, medication rationalization, sexual dysfunction management and referral to specialist services including audiology, opticians and physiotherapy.

Results: 45 patients, 30 (67%) females and 15 (33%) males were reviewed. The median age was 69 (IQR 66-71) years. Viral suppression was 91%. The median number of comorbidities and comedications at review was 2(0-5) and 3(1-9)

respectively. Thirty (67%) patients were frail according to the Short Physical Performance Battery. Vitamin B12 was deficient (<200pmol/l) in 24 (53%) patients. 13 (28%) patients had mild or moderate anxiety and/or depression according to PHQ-9 and GAD-7 scores. 9 (20%) patients scored <9 on cognition assessment using the Abbreviated Mental Test Score. Using FRAX scoring, 2 (4%) patients had >3% risk of hip fracture and 1 (2%) patient had a >20% risk of a major fracture. Eighteen (40%) patients had >15% 10-year risk of a cardiovascular event. Following assessment using the whisper test and Snellen chart, 18 (40%) patients required further visual or hearing assessments. 33% of men reported sexual dysfunction.

Conclusion: We describe a cohort of OPLH with well-controlled HIV but a high prevalence of multi-morbidities, many of which would have been overlooked during routine HIV care. Our results highlight the need for differentiated care and specialist services designed to focus on the specific complex care needs of OPLH.

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Scaling-up HPV Testing for Cervical Cancer Screening in WLHIV in Zambia

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Background: Zambia has an estimated cervical cancer incidence rate of 66.4/100,000. cervical cancer remains the most common cancer accounting for nearly 25% of all cancers diagnosed and causing more cancer deaths in Zambia. The Ministry of Health (MOH) established the national cervical cancer screening program in 2006 using Visual Inspection with Acetic Acid (VIA) enhanced with digital cervicography. Recently, WHO made a call to eliminate cervical cancer through the 90-70-90 approach. The 70 target demands that 70% of eligible women are screened with a high-precision test at 35 and 45 years of age. We present Zambia's progress in scaling-up HPV testing for cervical cancer screening in WLHIV.

Material and Methods: Through PEPFAR funding, the Ministry of Health procured HPV test kits which were distributed across the country in 2021. Through the support of Hologic, we held a country-wide orientation in September 2021 to improve the uptake of HPV testing for cervical cancer screening in WLHIV.

Results: A team of 24 facilitators, distributed across 8 of the 10 Zambian provinces trained a total of 133 healthcare workers. This included 38 staff from the laboratory, 82 nurse providers, and 13 medical doctors. The orientation included the basics of cervical cancer and available screening methods and why the country was moving towards HPV testing. Other key topics included sample collection, courier systems, and testing on the Hologic Panther and other platforms. This orientation showed an immediate increase in the utilization of HPV testing from a monthly average of 641 to 4,081 before and after the training, respectively. The overall HPV positivity rate was 32% (6,966/21,451).

Conclusion: These orientations are expected to improve the utilization of HPV testing for CaCx screening. Support from PEPFAR and HPV testing kits manufacturers such as Hologic is key in the integration of HPV testing in Low- and Middle-Income Countries.

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Determinants of Adherence to Tuberculosis Treatment Among Adolescents at Selected Health Facilities in Adjumani District, North Western Uganda

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Background: Tuberculosis is a preventable and curable disease. However, it continues to negatively impact on the lives of adolescents globally. In 2021, 10.6 million people had TB and adolescents accounted for 11%. Uganda ranked

among the top 30 countries in the globe with the highest burden of tuberculosis. Therefore, this study assessed determinants of tuberculosis treatment among adolescents at selected health facilities in Adjumani District, North Western Uganda.

Material and Methods: A Cross sectional study design that employed both qualitative and quantitative data collection approaches. And used SPSS version 26.0 used to analyze quantitative data, qualitative data was analyzed manually and grouped themes and reported in form of quotation. Binary logistic regression model was fitted to determine factors associated with adherence to tuberculosis treatment among adolescents and the results were reported using odds ratio while inductive thematic content analysis was used to analyze qualitative data.

Results: 185 respondents and three key informant interviews conducted. Adherence to TB treatment was 58.92% The factors influencing treatment adherence were; being new on TB treatment (aOR=0.206; 95%CI: 0.071 - 0.597; p=0.004). Treatment duration two months above (aOR=6.723; 95%CI: 1.753 -25.787; p=0.005). Experience of any drug side effects (aOR=3.257; 95%CI: 1.45 -7.315; p=0.004). Having poor health workers' attitude towards patients (aOR=0.024; 95%CI: 0.001 -0.493; p=0.016). Alcoholism, smoking, stigma and isolation. Comorbidities, knowledge gap, lack of food support, long-distance, high transport cost, drug stock-out, inadequate counselling, limited space at ART clinic, long waiting time, lack of budget for contact tracing and follow-up.

Conclusion: Adherence to TB treatment was found lower than 88.1% got from Mulago National referral hospital. Recommendations: Health care workers need to offer adequate counseling services and budget allocation for food during intensive phase of treatment.

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Distribution of Vaccine-Preventable High Risk-Human Papillomavirus Genotypes and Association With Cervical Cytology Patterns Among Women Living With HIV in the ART Era at Kenyatta National Hospital

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Background: There are sustained cervical cancer incidental and mortality rates among women living with HIV (WLHIV) in Kenya irrespective of available HPV vaccines. Data on the distribution of vaccine-preventable HR-HPV genotypes in Kenya is scarce. Objectives: We aimed to determine the distribution of vaccine-preventable HR-HPV genotypes and their association with cervical cytology among WLHIV in the Antiretroviral (ART) era at the Kenyatta National Hospital (KNH).

Material and Methods: WLHIV aged ≥ 18 years enrolled in HIV care at KNH HIV clinics were eligible and approached for participation during their routine HIV clinic visits between September 2021 and February 2022. Participants had a face-to-face interview with a research assistant. A nurse collected a cervical sample with a cytobrush for HPV genotyping using Gene Xpert and HPV Genotypes 14 Real-TM Quant" V67-100 FRT kit (Cepheid, Sunnyvale, CA, USA, and SACACE biotechnologies[®], Italy) respectively.

Results: Overall, 647 WLHIV participated in the study. The mean age of the participants was 42.8 years (SD 8.7) and the majority (63.8%) were aged 35- 49 years. Almost half of the respondents

(43.4%) reported a history of STD treatment in their adult lifetime and 68.5 % of the participants had a sexual partner/s currently and/ or in the last six months. The overall HR-HPV prevalence was 34.6% (n=224), whereas the prevalence of vaccine-preventable HR-HPV was 29.4% (n=190). The highest distributed vaccine-preventable HR-HPV was type 52 (38.4%), followed by (in descending order) types 16 (28.6%), 18 (23.7%), 58 (12.9%), 45 (10.3), 31 (8.5%), and 33 (6.7%). For the WLHIV having vaccine-preventable HR-HPV genotypes, 72.1% had normal cytology whereas 13.7% had ASCUS, 3.2% had LSIL, 4.7% had HSIL, and 3.2% had ICC. Consequently, 3.2% of the participants had cervicitis. WLHIV with multiple vaccine-preventable infections were likely to have abnormal cytology as compared to those with single HR-HPV infections (39.6% vs 10.2%, AOR=6.3; 95% CI 3.0-12.9, P=<0.001).

Conclusion: There is an increased distribution of vaccine-preventable HR-HPV genotypes and associated cytological abnormalities among WLHIV on care. There is an urgent need to consider the expanded coverage provided by the nonavalent HPV vaccine targeting eligible girls and young women in Kenya.

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Barriers to Cervical Cancer Screening Among HIV Positive Women at Ziobwe Health Center III

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Background: Worldwide, cervical cancer is the fourth most frequent cancer in women with an estimated 604 000 new cases in 2020. (WHO, 2022). With the highest HPV rates occurring in sub Saharan Africa at 24%, cervical cancer is the leading cause of cancer morbidity and mortality in Ugandan women with an estimated 6959 new cases and 4607 deaths in 2020. (Kristen et al., 2022). Cervical cancer is also more aggressive in the HIV infected women, thus

the recommendation to integrate cervical screening in routine HIV services. (Agnes et al, 2015). In March 2021, cervical screening using Visual inspection with acetic acid (VIA) was integrated into HIV care at Ziobwe health center III. During the district cervical cancer screening review meeting held in June 2022, it was pointed out that cervical cancer screening among eligible HIV positive women (25-49 years) was at 43.2% at ziobwe health Centre III. Several gaps and questions remain in terms of in-depth understanding of why high-risk women should fail to screen for cervical cancer even after integration of this service into their routine HIV care (Agnes et al, 2015) hence the need for the study.

Material and Methods: Qualitative cross-sectional study using in-depth patient interviews was conducted were study participants were purposively selected including HIV positive women aged 25-49 years who had never been screened attending Ziobwe health center III HIV clinic. A total of Twenty (20) in-depth interviews were conducted in July 2022 to sept 2022 in both English and the local language (Luganda).

Results: Barriers mentioned included: Fear of outcomes, Inadequate knowledge about cervical cancer screening, Cancer screening not considered important in the absence of symptoms, long waiting hours at the facility, fear of invasion into their privacy, Myths and misconceptions about the process of screening for cervical cancer, competing health priorities, being handled by male health workers, age difference where older women are screened by younger health workers, negative health workers attitude.

Conclusion: Patient's health education on cervical cancer screening should address risk perceptions, women's attitude towards screening and address the fears held by the women so as to enhance the uptake of screening services.

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Preferences Among Adolescents Living With HIV for Depression Support and HIV Care Engagement in Malawi: A Qualitative Study

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Background: Depression has been identified as a significant barrier to initiating and remaining in HIV care for adolescents living with HIV (ALWH) in sub-Saharan Africa. Resource-appropriate interventions that improve depression and address engagement in HIV care for ALWH are needed. Our goal is to conduct formative research in Malawi to adapt and enhance the Friendship Bench (an evidence-based depression counseling intervention) with peer support for ALWH. We report on adolescent preferences for adaptation and enhancement.

Material and Methods: We are conducting in-depth interviews, social support mapping, and focus groups to understand optimal strategies for supporting HIV care engagement within the context of the Friendship Bench. We expect to enroll 25 ALWH from Lilongwe District ART clinics, 15 participants and study staff of a previous Friendship Bench adaptation, and five key stakeholders by March 2023. Participants were asked their opinions on various forms of peer support for HIV engagement among ALWH, including having a peer escort them to the ART clinic, receiving text message reminders for medication adherence and appointments, talking with a fellow ALWH, and group peer support.

Results: Preliminary findings suggest youth have varying preferences around social support to improve engagement in HIV care. Underlying adolescents' preferences are desires to feel encouraged, have comfort with the person

providing social support, and a sense of confidentiality. Adolescents welcomed the idea of having group conversations with peers living with HIV due to shared experiences and the ability to motivate one another when taking medication: "Now we can be encouraging each other that you should be trying to take your medication so that your future is bright hence fulfill your dreams." Adolescents discouraged both text message reminders and escorts to the clinic because "though if he is not disciplined enough to keep secrets, he can end up disclosing about your status to other people."

Conclusion: Our results suggest that an adaption of the Friendship Bench for ALWH could incorporate group support sessions to unite ALWH but must attend to their confidentiality concerns. This adaptation will foster more adolescent-friendly interventions that both meet the mental health needs of ALWH and promote engagement in HIV care.

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Rural-Urban Differences in Risk Factors for Non-communicable Diseases Among People Living With HIV (PLHIV) In Zimbabwe

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Background: With the expansion of ART programs, a greater number of PLHIV are transitioning into geriatric care. This raises concerns over their risk of non-communicable disease morbidity and mortality. Almost two-thirds of PLHIV in Zimbabwe reside in rural areas. We looked at the differences in risk factors for NCD acquisition, particularly Hypertension and Diabetes Mellitus, between PLHIV in rural and urban settings.

Material and Methods: In February 2022, OPHID supported NCD screening for adults aged 40 years and above in 24 supported public health facilities across 9 districts in Zimbabwe. Screening consisted of lifestyle and NCD risk-associated questions

administered by a clinician and measurement of blood pressure, random blood sugar, weight and height from which Body Mass Index (BMI) was calculated. Hypertension was defined as a blood pressure measurement greater than or equal to 140/90mmHg, while a Random Blood Sugar greater than 11.8mmol/L signified diabetes mellitus as per national guidelines. Chi-Square tests were used to make comparisons between the groups.

Results: A total of 744 recipients of care were screened during the period, with 67.1% (n=499) receiving care in urban facilities. The median age was 48 years for both groups, and over 60% of respondents in both settings were female. There was a significant difference with respect to physical activity ($p<0.05$) with 97% of rural PLHIV reporting engaging in moderate-intensity exercise for at least 150 minutes a week compared to 57% of urban respondents. Family history of diabetes or hypertension, alcohol consumption and smoking were not significantly different between the two groups. 46% of PLHIV receiving care from urban facilities had a BMI greater than 25, compared to 28% from rural facilities. Overall, the prevalence of hypertension and diabetes among the PLHIV screened was significantly greater among urban PLHIV ($p<0.05$).

Conclusion: As the PLHIV population continues to age, there is a need for programs that address demographic-specific risk factors for Non-Communicable diseases. In addition to routine NCD screening, the development of interventions that discourage a sedentary lifestyle and encourage weight loss is critical, particularly for urban-dwelling PLHIV.

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Trends of Human Papilloma Virus Vaccination Uptake Among Young Adolescent Girls in Kabarole District, Western Uganda

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Background: World health organization (WHO) together with Uganda's ministry of health (MOH) recognized primary prevention of cervical cancer since most of the cervical cancer cases are preventable. Vaccinating girls aged between 9 to 14years with human papillomavirus (HPV) vaccine before exposure to the virus can offer protection against cervical cancer. Hardly any trend analysis has been conducted on the uptake of HPV vaccination among young adolescent girls in Kabarole District. Objective: This study aimed at describing trends of HPV vaccination uptake among young adolescent girls before and during COVID-19 crisis in Kabarole district.

Material and Methods: This was a retrospective cross sectional study that involved review of health facility monthly summary health management information systems (HMIS) 105 forms and data extraction from district health information systems (DHIS2) electronic data base for the years 2017-2020. A total of thirty two (32) health facilities that offer HPV vaccination services and report to district health officer's (DHO) office were purposively selected.

Results: The district vaccinated 189 and 147 girls with HPV1 vaccine and HPV2 vaccine respectively in the first quarter (January-March) of 2017. In the same year, 438 girls and 327 girls were vaccinated with HPV1 vaccine and HPV2 vaccine respectively during the second quarter (April-June). In 2018, 148 girls were vaccinated with HPV1 vaccine and 98 with HPV2 vaccine during the third quarter (July-September). In 2020, only 198 girls received at least a doze of HPV vaccine.

Conclusion: The study revealed that every year (2017-2020) the numbers of young adolescent girls vaccinated for HPV vaccine decreased rapidly in the first (January-March) and third (July-September) quarters. Furthermore, girls who received HPV2 vaccine were significantly lower than those those who received the first doze. Interventions geared towards increasing HPV vaccinations uptake among adolescent girls should focus on these two quarters of the financial year.

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Digestive Candidiasis Among People Living With HIV in Bamako: Species Distribution and Antifungal Susceptibility Pattern

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Background: HIV infection is now a chronic disease with the advent of HAART which has contributed to increase the life expectancy of people living with HIV. However we need to update knowledge on pathologies associated with HIV such as candidiasis in order to better manage HIV cases.

Material and Methods: This is a cross sectional study conducted in the infectious and tropical diseases department of Point G Teaching Hospital in Mali, from July to September 2020. Including all patients infected with HIV and presenting digestive candidiasis diagnosed by mycological test. Clinical and biological data were collected and analyzed.

Results: Of the 74 HIV infected patients hospitalized during the study, 60 had digestive candidiasis, a frequency of 88%. The mean age was 41.4± 11.8 and female were predominant with a sex ratio of 0.94. Furthermore, we noted 31.7% of patients were housewives and 60% of our patients lived in urban areas. HIV1 infection accounted for 96.7% of cases and the majority of patients, 43.3%, were WHO stage IV and 89.4% were classified as stage C according to the CDC classification. CD4 count was lower than 200cells/mm³ in 89.4% of patients. General examination of our patients noted bad general condition in 56.7% of cases, malnutrition in 61.7%. Physical examination found whitish deposits of mouth in 88.3%, inflammatory lip in 18.3%, diarrhea in 25%, and dysphagia in 13.3% of patients. Complete blood count showed abnormalities such as microcytic anemia in 48.7%,

leukopenia in 28.6%, and thrombocytopenia in 31.9% of patients. Mycological tests found 85% positivity on direct examination. In culture, *C. parapsilosis* was the most frequent specie (28.2%). whitish deposits showed a sensibility of 100% and specificity of 54% for the diagnosis. On antifongogram, *C. ciferii* and *C. guilliermondii* showed highest drug-resistance, respectively 83% and 29%. The most effective antifungal drug used is fluconazole with 65% of fungal improvement. However 41.7% of patients died.

Conclusion: there still a high frequency of digestive candidiasis among HIV patient, clinical examination is important for the diagnosis and fluconazole remain effective for the treatment. However addition of opportunistic infection can result to death.

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Menting Common Elements Treatment Approach (CETA) For Improved Mental Health in HIV Client Care: The Catholic Relief Services (CRS) Experience in Zambia

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Background: The Common Elements Treatment Approach (CETA) is an evidence-based mental health intervention that has been proven to address many problems including trauma, depression, anxiety, violence, substance abuse and personal safety (suicide, homicide). These issues serve as barriers to optimal HIV treatment and may exist before, during and after clients are diagnosed with HIV. These mental health problems can have a negative impact on adherence to anti-retroviral therapy (ART) and overall quality of life. CETA helps to address issues such as Interruption in Treatment (IIT), poor adherence, HIV status disclosure and attrition, thereby improving HIV outcomes and epidemic control. The EpiC 3-90 project aimed to integrate CETA into its HIV care and treatment

program to prevent Interruption in Treatment (IIT) and unsuppressed Viral Load.

Material and Methods: Intensive training was held for facility management and counsellors, equipping them to screen for CETA eligibility. The training was interactive, covering the CETA elements. CETA providers held 6 to 12 one-hour sessions with each enrolled client. Qualifying clients were referred for CETA and introduced to the program and the element flow was decided using the Component Decision Making Table. The client's progress was tracked session by session, to make sure that the treatment plan was addressing the client's key problems and symptoms by assessing the Client Monitoring Form scores.

Results: From October 2021 to September 2022, about 223 clients were assessed, with 43% (96/223) enrolled into CETA. At submission time, 77% (74/96) of clients had completed CETA and were retained in HIV care and a suppressed viral load (defined as <1,000 viral copies/ml). About 6.3% (16/96) were still undergoing CETA and the 6 had dropped out owing to; busy business schedules and not having time to attend weekly sessions; feeling better after a few sessions; and losing interest in the program because of the many sessions.

Conclusion: It is feasible to successfully integrate CETA into HIV care and treatment program. CETA is key to prevent Interruption in Treatment (IIT) and unsuppressed Viral Load.

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“It Saves a Lot of Time. Someone Will Be Out in 15 Minutes”: Acceptability of Point of Care Testing for Sexually Transmitted Infections in Community Pharmacies in Uganda

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Background: The availability of STI treatment in public health facilities in Uganda remains a challenge. This forcing many to seek care from alternative health care providers like Community Pharmacies (CP) However, CP as first point of STI treatment in Uganda remains under regulated and researched increasing the risk of antimicrobial resistance (AMR). We aimed to assess acceptability and satisfaction of Point of Care (POC) STI testing in CP in Uganda.

Material and Methods: Between September 2020 to June 2022, we enrolled 450 participants who were seeking STI and non STI treatment in CP in Uganda. Participants provided blood and self-collected samples for testing and were followed up to ascertain STI status and treatment completion. Abbott Bio-line Due, OSOM repaid diagnostic and GeneXpert were used. In-depth interviews were conducted with 50 participants to assess the acceptability of POC STI testing. The data were transcribed, coded, and thematically analyzed.

Results: Out of 50 participants, 27-female, 23-male, 4 were seeking Emergency Contraceptives, 18-STI treatment and 13-Non STI, 15 pharmacy staff/stakeholders. 2 themes emerged; Acceptability: Clients highly accepted POC testing at CP due to the quality and comprehensiveness of its services as affirmed by R “they were fast... not difficult to use...”. POC saves time... one is out in 15 minutes”. D “Clients claim to be too busy to test, but if told tests take 10-15 minutes, they are much willing”. Awareness: lack of awareness about POC testing which was causing patients and health workers to miss out on the benefits of POC testing as alluded to by R a symptomatic business woman “I got to know about these services inadvertently: “No, I had never heard about it. I just bumped on to it.....” H a symptomatic trailer driver corroborated this: “many do not know that testing is there...” “There is a knowledge gap...if the public could know that point of care is accurate...quick then they would take it up...’

Conclusion: Findings showed that POC testing for HIV and curable STIs at CP is feasible and well-accepted, and that there is need to increase awareness and roll out POC testing to curb the risk of AMR.

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Predictors and Frequency of STIs Among PrEP Using Men Who Have Sex With Men in Kiambu County, Kenya

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Background: Globally, men having sex with men (MSM) brace a high burden of STIs, thus a vital target population for public health response. Chlamydia trachomatis, Naisseria gonorrhoeae, and syphilis are the most prevalent STIs among the MSM. The use of pre-exposure prophylaxis (PrEP) is recommended among high risk populations. The convergence of PrEP, has seen an increase in STIs. In Kenya, 35% of the MSM on PrEP have acquired an STI and this is a 21% increase at a national level. STIs contribute to 41% of morbidity among the MSM. 29% of population on PrEP in Kiambu are MSM and there is an increment of STIs by 14% in Kiambu County. The study assessed the prevalence of selected STIs and pre-disposing factors among MSM on PrEP in Mamboleo Peers Empowerment Programme (MPEG) Progam in Kiambu County.

Material and Methods: The study used a descriptive cross-sectional study, involving quantitative and qualitative methods. This was a community-based study and venue-based and snowballing sampling was adopted to identify participants. Quantitative data was collected from 129 participants, while qualitative data was collected from 4 key informants and 3 FGDs conducted. Quantitative data was analyzed using SPSS and qualitative using NVIVO. Ethical considerations from the Kenyatta University ethics committee, NACOSTI, MPEG programme and consent obtained from participants were observed.

Results: The findings indicated the prevalence of STIs was 37.5% in the past three months. The more

prevalent STIs as highlighted in the study were co-morbidities of Chlamydia & Gonorrhoeae, and genital warts at 47.9% and 31.3% respectively. The regression analysis results indicated that, there were significant associations between STI prevalence and the type of sexual typologies [OR=25.565; 95%CI=0.144-25.328; P=0.022]. Partner notification to testing positive for an STI had a strong significance effect on STI prevalence at [OR=0.447; 95%CI=0.862-1.393; P=0.013]. On the other hand, the number of sexual acts per week had no significant relationship with STI prevalence (28.6%) [OR=0.584; 95%CI=0.000; P=1.000].

Conclusion: STI prevalence among MSM on PrEP was associated with sexual behavioural patterns such as lack of use of condoms especially with paying clients, not using condoms during anal sex, and different sexual typologies.

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Epidemiological Characteristics of Deaths in Clients Receiving HIV Care and Treatment in the Mozambican Armed Defense Forces

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Background: In Mozambique, HIV is the leading cause of adult deaths (15–49). National prevalence is estimated at 13% with regional variation ranging from 5% in Tete to 24% in Gaza Province. As part of the U.S. Department of Defense-funded project, Jhpiego works with the Forças Armadas de Defesa de Mozambique (FADM) to implement a comprehensive HIV prevention, care, and treatment program targeting military personnel, their families, and civilian communities.

Material and Methods: A total of 29,480 persons living with HIV receive ART in 26 FADM sites. Of the clients eligible for a viral load 24,774 have had the test and 96% are suppressed (23,683/24,774). Death is documented in OpenMRS based on verbal

information. This is a descriptive analysis of the 50 persons living with HIV who died between July – September 2022 (0.1%) at 13 FADM sites.

Results: 64% (32/50) of deaths occurred among men and 36% (18/50) women. 46% (23) received services in MDF southern region, 34% (17) and 20% (10) in center and northern region respectively. Over 42% (21) were 50 years or older. All were prescribed TDF+3TC+DTG; 30%, (15) of the deaths were among those on ART < six months and were not eligible for VL. CD4 cell count was not available for 84% (42); for those with CD4 (8), none had CD4 <200 cell/mm. 36% (18/50) were WHO stage III and IV, and of these only five had CD4 available. Of the 50 clients who died, 56% (28) had a documented VL and of those, 93% (26/28) were suppressed. 44% (22/50) were either due or past due for VL testing. 12% (6/50) had tuberculosis.

Conclusion: Despite advances in HIV treatment, death disproportionally affects men as well as PLHIV on ART for < 6 months. Strategies to strengthen rapid ART initiation including assessment and management of advanced HIV disease, screening, treatment and prevention of opportunistic infections should continue. Mentoring providers is needed to ensure all clients have a baseline CD4 and VL testing with timely results available. Additional efforts are needed to document cause of death especially in the community where 86% of deaths occurred.

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Effectiveness of PrEP in Reduction of HIV New Infections in Young Females

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Background: HIV epidemic has impacted negatively on global health; the second largest epidemic of the 20th and 21st centuries after influenza. Although it has been controlled since 2000, there is a worrying trend of new infections, especially among women aged 15-29years. Sub-Saharan Africa has a higher HIV incidence rate in women aged 15-29years compared to men in same age group, and accounts for about 70% of people living with HIV worldwide.

In the National Systematic Disease Control's report of 2021, Kisumu County had 3118 New Infections, coming second after Nairobi County, 67% being women and 73% of these women being 15-29years. This accounts for 10% of the total new infections collected from top 10 counties with the highest number of new infections in Kenya. PrEP has been noted to highly reduce new infections in young females between 15-29 years. Several studies and surveys have been conducted on the efficacy and accuracy of prevention among PrEP users, with positive indicators. Dreams Initiative study which is collaboration between The Henry Jackson Foundation and Pamoja CBO evaluated the impact of PrEP on HIV incidence rates in Kombewa.

Material and Methods: Dreams Initiative recruited 5,144 HIV negative girls aged 10-24 years with 1,955 enrolled in the 15 -24 cohort that received PrEP throughout the 1 year study duration. This cohort was chosen because the sero-conversion was noted to be higher. A control group, a number of young females randomly tested from the same region was also observed for sero-conversion.

Results: For the study period, only one participant in the 18-24 cohort seroconverted, translating to 0.05% infection rate. Compared to the same proportion of young females tested randomly at the various health facilities within Kombewa HDSS; 5621 females between 15-24 years were tested, 71 seroconverted, translating to 1.2%.

Conclusion: PrEP was effective in reducing new infection among the young females who adhered strictly to the treatment plan. Recommendations: 1. PrEP should be integrated as part of HIV care and treatment and made available for use, with special emphasis to females between 15-29 years. 2. Create Safe spaces for the young females and increase their accessibility to PrEPs

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Progress in Offering PrEP to Adolescent Girls and Young Women (AGYW) through DREAMS in Nampula, Mozambique

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Background: Mozambique continues to have a high HIV prevalence (12.5%), with women being hardest hit by the epidemic. HIV prevalence among women aged 20 to 24 in Mozambique is 11.8% but 3.8% among their male counterparts (INSIDA 2021). ICAP works in collaboration with the provincial health and education ministries to implement PEPFAR's DREAMS (Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe) strategy, to reduce adolescent girls and young women (AGYW) vulnerability to HIV, including increasing pre-exposure prophylaxis (PrEP) literacy and demand. Nationwide, less than 10% of men and women have heard of PrEP.

Material and Methods: ICAP has worked in close collaboration with Nampula provincial leadership to implement DREAMS in Nampula City and Erati district across 16 health facilities (HFs). ICAP DREAMS supervisors were trained on PrEP key messaging, counseling and clinical follow-up. They provided health talks about PrEP literacy and created demand at secondary schools, universities, and technical schools, as well as in waiting areas at the supported HF in coordination with ICAP-supported peers. Community partners' DREAMS mentors received initial training on PrEP and weekly support from ICAP DREAMS supervisors on how to manage misinformation and myths related to PrEP at the community level.

Results: The DREAMS Mentors' training and the subsequent demand creation resulted in greater service provision of PrEP for AGYW. Prior to DREAMS implementation (Oct 2019- Sept 2020), 840 AGYW between 15-24 years of age, initiated PrEP across the 16 HFs. During the first year of DREAMS implementation (Oct 2020-Sept 2021),

PrEP initiation increased over eightfold to 6,872 at the same HFs, with sustained high-enrollment levels the following year (8,459), an increase of 23.1%.

Conclusion: DREAMS implementation contributed significantly to the initiation of PrEP among AGYW, efforts to increase literacy and demand creation among AGYW before contact with HF, addressing fear, stigma and disinformation were essential to increase demand for PrEP, while the involvement of community actors was crucial in supporting PrEP initiation among AGYW, a group at particularly high risk for HIV.

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Preferences for Non-Surgical and Surgical Vmmc Among Adolescents and Their Parents in Zimbabwe: Findings From a Cross-Sectional Study

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Background: Voluntary medical male circumcision (VMMC) is an essential option in the toolkit of HIV prevention interventions in East and Southern Africa. Zimbabwe's policy supports use of device-based methods such as the Shang Ring (SR) in males aged 15 and above, but WHO guidelines advise these devices can be used in males as young as 10, and there is interest in lowering this age threshold. There is a need to understand potential demand for non-surgical devices in younger adolescents and their parents who must provide consent for the procedure.

Material and Methods: Cross-sectional surveys were conducted in September 2022 in Zimbabwe among uncircumcised adolescents/young men

(AYM) aged 13-16 (n=881), circumcised AYM aged 13-20 (n=247), and parents (n=443) of uncircumcised adolescents aged 13-16. Surveys asked each group about perceptions of surgical and device based VMMC, and drivers and barriers for VMMC uptake. Descriptive statistics were used to characterize attitudes in each group.

Results: There was clear preference for SR compared to surgical VMMC; 81%, 68% and 68% among uncircumcised AYM, circumcised AYM and parents respectively reported SR preference. Top perceived benefits of SR were similar across groups: fast procedure time, no stitches, and less pain compared to surgery. For uncircumcised AYM, top drawbacks were having to wear the device for a week and fearing pain of during device placement and removal. For parents, the top drawback was that SR was a newer procedure lacking provider experience as compared to surgery. Among circumcised AYM, a higher percentage reported experiencing pain the day and night of the procedure among those who had surgery (43%, 85/198) compared to SR (22%, 11/49).

Conclusion: The strong preference for Shang Ring indicates that non-surgical VMMC devices could play an important role to increase VMMC demand and uptake for long-term sustainability of Zimbabwe's VMMC programme. From the recount of men who have been circumcised, Shang Ring was also less painful than surgery, which is known to be the primary barrier to uptake of VMMC. Coupling this data on preference with safety data from an ongoing trial of Shang Ring will provide important information to guide VMMC programming in Zimbabwe.

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Motivators for Urban Heterosexual Men in Kwazulu-Natal to Consider Using Pre-exposure Prophylaxis (PrEP)

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Background: Heterosexual men form part of the population affected by the HIV transmission dynamics, globally, and South Africa is no exception. However, Pre-Exposure Prophylaxis (PrEP) roll-out programs have primarily focused on high-risk groups, including men who have sex with men, sex workers, and women, thereby neglecting the integration of heterosexual men in HIV prevention programs. Objective: The aim of this study was to understand what motivates heterosexual men of different HIV statuses to consider or not to consider using PrEP when having sex with young women aged 18-25 years.

Material and Methods: Using a qualitative exploratory design rooted in the interpretivist paradigm, we interviewed 10 men living with HIV and 10 without HIV, who had self-reported experiences of having sex with women aged 18-25 years. NVivo 12 qualitative software was used to code and thematically analyze data.

Results: More than half of the participants reported having multiple sex partners and nearly all (85%) recounted having condomless sex in the previous three months. Major themes included perceptions and knowledge about PrEP, motivations, uptake, and access to PrEP, Men acknowledging their risky behaviors, and suggestions for PrEP motivation interventions. Men generally appeared to be unaware of PrEP prior to the study but were demonstrably positive about its potential after being introduced to it. Men identified motivators of PrEP use, including HIV prevention, healthy pregnancy among serodiscordant couples, and the ability to have condomless sex with multiple partners. Despite these motivators and irrespective of their HIV status, men reported HIV stigma, pill burden, side effects, and PrEP access through healthcare facilities, as deterrents to using PrEP.

Conclusion: The results showed potential for the uptake of PrEP, hence PrEP prevention strategies need to incorporate heterosexual men. PrEP roll-out programs need to be decentralized in order to reach a diverse population, thereby enhancing knowledge, and creating demand.

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Associations Between PrEP Use, HIV Risk Behaviors, and Perceived HIV Risk Among Fisherfolk in Siaya County, Kenya: A Cross-Sectional Multilevel Analysis

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Background: Fishermen are a high priority population in Kenya to reach with oral PrEP, as risk of HIV acquisition is high, and their mobility disrupts uptake of health services. To optimize HIV prevention efforts and reduce HIV transmission in fishing communities, we must understand the relationship between fishermen's risk perceptions, HIV risk behaviors, and PrEP use.

Material and Methods: Baseline survey data were collected in 2022 from 712 adults in 3 fishing communities in Siaya County, Kenya, in the ongoing 'Owete' trial (NCT# NCT04772469). Mixed effects logistic regression models were used to examine associations of self-reported PrEP use in the past 6 months with 1) HIV risk perception (none/low vs moderate/high), and 2) selected high-risk behaviors (partnership concurrency, higher-risk partnerships (e.g., commercial sex workers), hazardous drinking), controlling for age, education, marital status, occupation, and wealth, with random intercepts for community and social-network clusters.

Results: Median age was 37 years [IQR:31-44], 86% were married, 12% reported higher-risk partnerships, and 3.9% reported using PrEP. In

bivariate analyses, partnership concurrency (OR:2.61; 95%CI:1.56,4.37), higher-risk partnerships (OR:1.65; 95%CI:1.14,2.39), and condom use (OR:3.76; 95%CI:1.07,13.21) were associated with higher odds of PrEP use. In adjusted models, relationship(s) with higher-risk partners remained associated with PrEP use (adjusted OR (aOR):1.98; 95%CI:1.45,2.70). Perceived HIV risk, hazardous alcohol use, and partner concurrency were not associated with PrEP use.

Conclusion: PrEP use was low despite availability in government clinics at baseline of an intervention study. PrEP use was associated with higher-risk sexual partnerships, but not reported HIV risk perception. Targeted promotion of PrEP is needed to increase uptake and reduce HIV acquisition among fishermen.

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Perceptions of Long-Acting Injectable HIV Pre-exposure Prophylaxis Among Adolescent Girls and Young Women in Kenya

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Background: The uptake of daily oral HIV pre-exposure prophylaxis (PrEP) remains low among populations that could benefit most, including adolescent girls and young women (AGYW). Additionally, many AGYW using PrEP struggle with daily pill taking. Long-acting injectable PrEP (i.e., bimonthly injections) may help overcome barriers associated with oral PrEP uptake (e.g., stigma) and adherence (e.g., daily pills). We examined perceptions of long-acting injectable PrEP among AGYW in Kenya.

Material and Methods: We completed quantitative questionnaires with AGYW (≥ 16 -24 years) who self-reported being HIV-negative and having behaviors associated with HIV risk (e.g., sexual partners of unknown HIV status). These AGYW were participating in a pilot study of peer PrEP referral, thus, some were using oral PrEP while others were not (CT.gov: NCT04982250). In questionnaires completed about one month following peer referral, we assessed participants' interest in injectable PrEP, preferred setting for injection access (healthcare clinic, family planning clinic, private pharmacy, other), preferred PrEP form (bimonthly injections, daily oral pills), and willingness to pay per injection (asked only among AGYW not using PrEP). We reported descriptive statistics.

Results: From May to July 2022, we enrolled 46 AGYW (16 using and 30 not using PrEP); all completed questionnaires. The median age of participants was 22 years (IQR 20-23) and 22% (10/46) had one primary partner. Most participants (61%, 28/46) were interested/very interested in injectable PrEP. Among those interested, most preferred accessing injectable PrEP at healthcare clinics (86%, 24/28), followed by family planning clinics (7%, 2/28), and private pharmacies (4%, 1/28). Almost all participants (96%, 27/28) reported a preference for injectable PrEP over daily oral PrEP. Additionally, many participants (60%, 9/15) were willing to pay for injectable PrEP; the median amount they were willing to pay was 200 KES (IQR 150-200), ~\$2.00 USD (IQR \$1.50-\$2.00).

Conclusion: AGYW in Kenya were interested in long-acting injectable PrEP and perceived this PrEP form as preferable over daily oral PrEP pills. When injectable PrEP is introduced and scaled up in countries like Kenya, innovative strategies to reach AGYW are needed. Future research could help inform the design and determine the effectiveness of different implementation strategies to reach this priority population.

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Factors Associated With Being Unaware Self-HIV Positive Status: Threats to Achieving UNAIDS Fast Track Targets by 2030, Zambia 2016 PHIA Survey

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Background: HIV epidemic remains a major public health concern globally. Despite major achievements in HIV response including ensuring universal access to testing (1), treatment (2) and prevention services (3), about 28.6% of people living with HIV (PLHIV) in Zambia were unaware of their HIV positive status in 2016 (4) and little was known about factors associated with this.

Material and Methods: To find out these factors, We used STATA 16 to analyze data of 2,439 PLHIV in the 2016 Zambia PHIA, where only 72.9% of them were aware of their status.

Results: Current findings show that females were 1.59 [95C.I: 1.30-1.94] times more likely to be aware of their HIV positive status as compared to males. Participants aged 25-34, 35-44, 45-54, and 55+ years were 2.40 [95C.I: 1.81-3.18], 5.08 [95C.I: 3.80-6.80], 5.43 [95C.I: 3.90-7.56], and 5.45 [95C.I: 3.25-9.14] times more likely to know their HIV positive status than those aged 16-24 years old, respectively; the younger the less likely to know self-HIV positive status. Participants with Tertiary education/university and above were 1.79 [95C.I: 1.23-2.60] times more likely to know their status than those with primary education. Widowed PLHIV were 1.55 [95C.I: 1.12-2.16] times more likely to be aware of their status than those who were married. Considering attitude questions, participants who agreed that: they can buy fresh vegetables from someone known to live with HIV, a child living with HIV should study with other children, and that they cannot be ashamed if they have a PLHIV in their family were 1.62 [95C.I: 1.02-2.58], 2.20 [95C.I: 1.35-3.59], and 1.85 [95C.I: 1.25-2.75] times more

likely to know their status than those who did not, respectively. Being aware of self-HIV positive status was not statistically associated with knowledge on HIV transmission and sexual behaviors of the study participants.

Conclusion: This study shows that being male, younger age, married or divorced, and having lower education and HIV related stigma are major determinants of being unaware of self-HIV positive status. Therefore, programs and campaigns targeting to increase community awareness on HIV transmission and reduce HIV/AIDS related stigma can speed up the achievement of the first 95% by 2030.

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Knowledge and Attitudes of Health Professionals in Maputo City Towards HIV Vaccine-Induced Seropositivity

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Background: Since 2011, Mozambique has been conducting vaccine trials to prevent infection by the human immunodeficiency virus (HIV). Participants who receive these vaccines may develop vaccine-induced seropositivity (VISP) when tested with the HIV rapid tests available in health facilities. VISP is a new phenomenon, and as such, participants with VISP could be misdiagnosed and mismanaged, resulting in both clinical and social harm. The aim of this study was to assess the knowledge and attitudes of health professionals toward a possible or confirmed case of VISP.

Material and Methods: We conducted a mixed-methods, descriptive study, that performed semi-structured and in-depth interviews with health professionals from five health facilities in Maputo. Qualitative interviews were audio-recorded and later transcribed in Microsoft Excel and content analysis was performed. Quantitative data was entered in REDCap and analyzed in SPSS.

Results: A total of 26 health professionals were interviewed from May-August 2022. The mean age was 32 years (interquartile ranges:26-35 YO), 57.7% were women, 46.2% had secondary education, 80.7% were health counselors, and 46.2% had been employed for longer than three years. Approximately 65% had heard about HIV vaccine trials, but only 23% could answer questions correctly about them; 22% of the participants heard about it from colleagues and the internet. Only 14.8% of the respondents had received training on HIV vaccines and VISP. Additionally, 30.8% of the interviewed reported that they had heard of VISP, of whom only 50% could correctly answer questions about it. Regarding HIV testing, 53.8% stated they would still test a patient even if they had participated in an HIV vaccine trial. Further, 65.4% reported they would enroll that same person on antiretroviral treatment if the test came back positive. When questioned about the correct HIV test to use with a patient who had been in an HIV vaccine trial, only 19.2% correctly responded that Polymerase Chain Reaction (PCR) is the appropriate test.

Conclusion: The health professionals interviewed showed limited knowledge regarding clinical trials of the HIV vaccine and VISP. Strategies for training, including disseminating information using appropriate channels and audiovisual material, should be developed to improve the way health professionals approach.

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Step by Step With Oral Pre-exposure Prophylaxis in Liberia: Strategy for HIV Prevention and HIV Case Finding

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Background: In Liberia, key populations (KPs) and others with at-risk behaviors are the drivers of the HIV epidemic. However, access to HIV services, including oral pre-exposure prophylaxis (PrEP), for KPs presents several challenges due to poor societal and policy tolerance. The Meeting Targets and Maintaining Epidemic Control (EpiC) project in Liberia supported the National AIDS Control Program (NACP) to introduce oral PrEP to prevent HIV transmission, and to enhance HIV case finding. We present the processes and initial country results.

Material and Methods: Advocacy and sensitization with NACP and Civil Society Organizations between December 2020 and February 2021 led to the establishment of a multi-stakeholder group and design of a road map. Guidelines and job aids were developed to support the training of providers. A hub of 21 KP-friendly facilities and a spoke of multiple KP-focused community-based organizations (CBOs) in 4 counties were coordinated for demand creation and safe service delivery of oral PrEP. A monitoring team with monitoring tools visited the CBOs and facilities for quality assurance and compliance. A quarterly technical working group meeting collated the experiences and discusses approaches to improve the program.

Results: From April to October 2022, 2,231 clients were screened for oral PrEP. Of the eligible 2,197, 2,003 were started on oral PrEP, including 936 on daily PrEP (742 female sex workers and 194 general population females) and 1067 on event driven PrEP (635 men who have sex with men, 132 transgender women, and 300 general population men). Eighty-seven eligible clients declined due to fear of side effects; 130 clients were ineligible; 1 was referred for post-exposure prophylaxis; and 129 were suspected of having acute HIV infection, including 37 out of 2,231 who tested positive (case finding = 2%) and were linked to treatment (100%) through a case management approach. A total of 932 clients have returned to pick up their refills (56%).

Conclusion: Good advocacy and stakeholder engagement led to the smooth operationalization of PrEP services for HIV prevention intervention in Liberia. It is also an opportunity to find new HIV cases. There is a need to scale up the intervention for countrywide impact.

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Correlates With Voluntary Medical Male Circumcision in Men 20 and Older, Tanzania

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Background: Voluntary medical male circumcision (VMMC) has been shown to reduce the risk of heterosexually acquired HIV in men by approximately 60%. A critical gap in Tanzania's VMMC program is that only 30% of VMMC clients are aged 20 or older, the age group most likely to be sexually active and therefore where the program would have the most immediate impact. To better prioritize this population, we sought to identify correlates of VMMC in men aged ≥ 20 years.

Material and Methods: We analyzed data from the 2016 Tanzanian Population-based HIV Impact Assessment, a household-based nationally representative survey. The survey used a complex, two-stage sample design which was incorporated into the analysis. Among respondents who reported that they had not been circumcised by age 20, multivariate regression analyses were conducted to compare demographic, behavioral, knowledge, and belief factors between those who remained uncircumcised and those who were subsequently medically circumcised. Multiple imputation methods were used to impute missing values.

Results: Approximately 27% of men who were still uncircumcised by age 20 were subsequently medically circumcised. In multivariate analyses, the following factors were positively associated with higher odds of VMMC at age 20 or older: higher wealth (adjusted odds ratio [aOR]=1.67, 95% confidence intervals [CI]=1.48-1.89), getting married at 25 or older (aOR=1.47, 95% CI=1.26-1.72), reported condom use (aOR=1.14, 95%

CI=1.03-1.26), and reported ability to obtain condoms (aOR=1.19, 95% CI=1.04-1.36). Having no education (aOR=0.63, 95% CI=0.53-0.76) and alcohol use (aOR=0.89, 95% CI=0.81-0.98) were both negatively associated with VMMC at age ≥ 20 .

Conclusion: Over a quarter of Tanzanian men who had not been circumcised by age 20 were subsequently medically circumcised. This suggests adult VMMC is an acceptable means of HIV risk reduction in Tanzanian adult men. However, to reach circumcision coverage goals of reaching 90% of men aged 15 and older, more will need to be done to reach groups not currently being reached. Based on this analysis the VMMC program may benefit from focusing on men with lower incomes, those who use alcohol and those with less education.

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Demand Creation Strategies to Increase Acceptance of HIV Pre-Exposure Prophylaxis Among Pregnant and Breastfeeding Women (PBFW) as Part of the eMTCT Strategy in Mazowe District, Zimbabwe

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Background: Pre-exposure prophylaxis (PrEP) is effective in reducing risk of HIV acquisition among all populations, including pregnant and breast-feeding women (PBFW) as part of the national elimination of mother-to-child transmission (eMTCT) strategy in Zimbabwe. However, PrEP uptake has been low among PBFW due to limited awareness. Pangaea Zimbabwe AIDS Trust (PZAT), in collaboration with MOHCC and partners

initiated targeted demand creation activities to ensure PBFW are reached with PrEP services across public health facilities in Mazowe district.

Material and Methods: From July to October 2022, 50 Health workers (HCWs) from 29 supported facilities including nurses, primary councilors, health promotion officers were trained using the standard MOHCC training package. During the same period, 35 existing PrEP Champions (PCs) were oriented on demand creation and PrEP for PBFW. PCs are women trained to raise awareness, mobilize, and advocate for PrEP uptake through peer-peer models. The HCWs and PCs delivered targeted demand creation activities including eMTCT and PrEP Information Sessions (PISs) directed at PBFW at Family and Health Care departments. Facilities held 1-2 sessions per day, depending on patient volume. Safety and benefits of using PrEP during pregnancy and breast-feeding were emphasized. PBFW Interested and eligible for PrEP were linked to services.

Results: Targeted demand creation activities through multiple platforms at facility level increased PrEP uptake among PBFW. Between March and June 2022, before employment of targeted demand activities, 56 PBFW were initiated on PrEP. From July-October 2022, 220 PISs reached 578 PBFW. During the same period, 210 pregnant and 224 breast-feeding women were initiated on PrEP translating to 73% uptake. However, facility-based PISs are limited in that they only reach PBFW who are coming to the facilities. To reach more, PICs and other strategies will need to be conducted at community level.

Conclusion: Employing multiple, targeted demand creation strategies at facility level increases oral PrEP uptake by PBFW. However, this strategy will need to be complemented by community-based strategies targeting PBFW, their partners and other influencers.

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Assessment of the Shangring Implementation in Zambia: Early Lessons Learnt

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Background: Zambia has a generalized HIV/AIDS epidemic with a national HIV prevalence of 13.9% in males and Voluntary medical male circumcision (VMMC) coverage of 32%. To explore a safe and acceptable alternative to conventional surgery for VMMC, between 2018 and 2020, Zambia evaluated the ShangRing (SR) device actively and passively according to the World Health Organization (WHO) guidelines. We sought to examine SR implementation, compliance to follow up requirements and adverse events rates during this period following passive surveillance period.

Material and Methods: In October 2020, PEPFAR Zambia and its implementing partners, in collaboration with Ministry of Health (MoH), scaled up the SR procedure to 10 provinces. Guidelines and standard operating procedures (SOP) were distributed, commodities distributed based on surveillance consumption data and VMMC providers, proficient in conventional surgery were trained with periodic mentorship. Providers described procedure options to eligible clients >15 years, who made a choice between SR using a non-injectable local anesthetic or conventional surgical circumcision. Clients were counseled to return for device removal but were not followed up. We recorded outcome measures for clients who chose the ShangRing, returned for device removal and experienced adverse events (AEs).

Results: During October 2020 - September 2021, out of 324,498 VMMCs conducted, 4% (12,215/324,498) were SRs. Within 14 days there was a return rate of 89%, while 2 did not return for removal and 1 had an adverse event of pain after 2 days requiring removal. Between October 2021-September 2022, 19,833 SR were placed out of 522,589 VMMCs done, a return rate of 99% within 14 days and 103 (0.5%) did not return for removal, while 5 (0.03%) had adverse events of pain on

removal. The ShangRing AE rate was 0.015%, while 99% of the clients returned for device removal with 94% returning within 14 days.

Conclusion: In the Zambian context, ShangRing circumcision was found to be effective, safe, with a low adverse events rate and high device removal rates. Monitoring provider adherence to guidelines, continued emphasis to clients on adherence to review, and monitoring of program data to respond to program issues, are key to improving its safe scaling up.

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Reasons for Uptake, and Discontinuation of Pre-exposure Prophylaxis Among Young Persons in Nigeria: A Retrospective Study

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Background: Young persons are a high HIV-risk group targeted for preventive interventions such as pre-exposure prophylaxis (PrEP). This study examined the reasons for the uptake, and discontinuation of PrEP among young persons in Akwa Ibom and Cross River States, Nigeria.

Material and Methods: This retrospective cross-sectional study reviewed data from the electronic medical records of young persons aged 15-24 years who received PrEP services across 155 health facilities supported by PEPFAR through USAID. As part of HIV testing services, young persons who test HIV negative at the health facility are routinely referred for prevention services where PrEP is offered. Screening for PrEP eligibility and reasons for PrEP uptake were documented using a standard checklist. Clients who are eligible and willing were counseled and commenced on PrEP in line with the national treatment guidelines. Descriptive statistics was used to summarize reasons for the uptake and

continuity of PrEP between January 2020 and December 2022. Bivariant regression analysis was used to compare outcomes by client demography and Kaplan-Meier to analyze continuity on PrEP using STATA ver.14.

Results: A total of 4,810 young persons were initiated on PrEP within the period (males=1,908 [39.7%]; females=2,902 [60.3%]). 51.7% of young persons (n=2489) commenced PrEP due to a sero-discordant relationship (M:932, 48.8%; F:1557, 53.7%; p=0.001), while 20.6% (n=993) was due to involvement in high-risk sexual behaviour (M:422, 22.1%; F:571, 19.7%; p=0.006). Those with unknown partner HIV status constituted 17.1% (n=824, M:325, 17.0%; F:499, 17.2%; p=0.306), while other reasons made up 10.5% (n=504, M:229, 12.0%; F:275, 9.5%; p=0.001). Only 10.9% of young persons who initiated PrEP were still on PrEP as of December 2022 (M:10.8%, 206/1908; F: 11.0%, 319/2902; p= 0.83). The mean duration on PrEP was 2 months and did not differ by sex [aHR=1.02; 95% CI = 0.96-1.08]. Of the 25 persons who gave reasons for discontinuation, the majority (44.0%, n=11/25) were due to a change in the relationship.

Conclusion: Young persons did not remain on PrEP for long durations. Programs need to improve support for PrEP continuation for young persons beyond the first month if the goals of HIV prevention will be attained.

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Dapivirine Vaginal Ring (DPV-R): An Acceptable and Feasible HIV Prevention Option: Evidence From Zimbabwe

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Background: HIV burden remains high in Zimbabwe. Adolescent girls and young women (AGYW) are disproportionately affected with an HIV incidence of 0.54% compared to 0.13% among their male counterparts. Whilst oral PrEP remains a key HIV prevention modality, pill burden, and privacy

are key barriers to oral PrEP uptake and continuation. Population Solutions for Health, PSI, and the Ministry of Health and Child Care are implementing a demonstration project to determine the acceptability and feasibility of using monthly DPV-R as an alternative to oral daily PrEP for HIV prevention.

Material and Methods: A two-arm prospective cohort design is being implemented across 8 districts in Zimbabwe. AGYW aged 18-35, screened as high-risk and eligible for PrEP chose between oral PrEP and DPV-R. Clients from both arms were followed up monthly between June and November 2022. Uptake and continuation rates were compared between the two arms for significant differences. Key informant interviews were conducted with clinicians involved in PrEP service provision.

Results: A total of 1,535 AGYW were screened for PrEP, 1,466 were eligible and of these 1,128 (76.9%) (95% CIs: 74.7-79.7) chose DPV-R. Uptake was similar by age but differed significantly by residence, with higher uptake observed in rural (97.5% - 95%CI: 96.0-98.6) relative to urban (61.0% - 95%CI: 57.6.0-64.3) districts. Continuation rates were consistently higher among clients on DPV-R compared to oral PrEP as shown below. Five of 1,128 high-risk AGYW (0.4%) tested HIV positive since commencement on DPV-R compared to 1/338 (0.3%) receiving oral PrEP over the same period. Service providers reported high motivation for DPV-R among AGYW for its convenience and discretion.

Conclusion: DPV-R is a feasible and preferable PrEP option for AGYW in Zimbabwe and should be scaled up. More demand-generation activities are required in urban settings for improved uptake.

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Abstract 517 was withdrawn.

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Use of Vouchers as an Incentive to Increase Demand for VMMC Services in Zambezia Province, Mozambique

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Background: Voluntary medical male circumcision (VMMC) is an effective intervention for reducing new HIV infections, especially in high HIV prevalence countries. In Mozambique, 27% men aged ≥ 15 years have not been circumcised, and Zambezia Province has lower VMMC coverage (33%). One of the main challenges for VMMC services uptake is the loss of income men can experience during the post-operative period. To address this, ICAP Columbia University implemented a strategy of providing non-coercive vouchers to VMMC recipients.

Material and Methods: ICAP collaborated with the Ministry of Health and US Center for Disease Control and Prevention in Mozambique to define vouchers eligibility criteria, focusing on men (≥ 15 years) who would experience loss of wages during the post-operative period. In January 2022, ICAP started implementation at 3 health facilities (HF) in Nicoadala and Quelimane districts, two of the highest VMMC saturated districts in Zambezia Province. ICAP registered vendors in the catchment area of the selected HF to distribute food baskets in exchange for vouchers corresponding to ~9 USD, and trained VMMC HF staff on the voucher eligibility criteria and process. Existing VMMC mobilizers were also trained on key messages and on how to identify clients' barriers to utilizing VMMC services. Program data from April to September 2019 (pre-implementation period) and April to September 2022 (post-implementation period) are presented.

Results: Pre-implementation period, 1,854 individuals received VMMC services at the selected HF and 2,900 received VMMC services in the post-implementation period, which represents an increase of 56%. Of the 2,900 individuals

circumcised after implementation of the voucher demand creation strategy, 75% (2,165/2,900) received a voucher and 78% (1,694/2,165) were aged between 15 to 29 years old.

Conclusion: Identifying and addressing barriers to VMMC services is essential to reach men and engage them in health services. The implementation of a voucher strategy contributed to an increase in the number of clients receiving VMMC services in the two most saturated districts in Zambezia Province. Expansion and strengthening of this strategy are needed to continue to reach men in highly saturated areas, improve program performance and ultimately reduce new HIV infections; however, ethical considerations and sustainability should be analyzed.

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Community HIV Prevention and Care and Treatment for Adolescents and Youth in Nampula, Mozambique

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Background: Adolescent and young people (AYP) aged from 15 to 24y in Sub-Saharan Africa (SSA) are disproportionately affected by the HIV epidemic. In 2020, 1.75 million adolescents were living with HIV worldwide, with 88% (1.5 million) in SSA. In 2020, 40% (39,200) of the 98,000 individuals newly infected with HIV in Mozambique were adolescents (UNAIDS, 2020). ICAP worked with Nampula's Provincial Health Authorities (DPS/SPS), community-based organizations (CBO) and private sector to design and implement a community service delivery model targeting AYP, to engage them in health services in Nampula Province.

Material and Methods: In June 2022, ICAP started implementing AYP-targeted mobile brigades (MB), in collaboration with provincial and facility

leadership. The MB offer comprehensive HIV prevention, care and treatment at the community level, integrated with general health services (MCH/FP, outpatient consultation). Preferred locations were identified with AYP, focusing on AYP congregation areas, universities and technical schools. In coordination with local CBOs, recreational activities, such as music's and sports, complemented clinical services to promote demand for services and to strengthen HIV and health literacy.

Results: Between June and November 2022, 31 MB outreach events were held, reaching 1,043 AYP (615 female and 428 male). Of these, 730 tested for HIV, with 28 (4%) testing positive and all initiating ART. Of the 702 who tested negative for HIV, 259 were eligible for PrEP (141 girls and 118 boys) and 98% (138/141) of girls and 95% (112/118) of boys accepted and initiated PrEP (Table 1).

Conclusion: Contextualized interventions to reach AYP are essential, as targeted demand creation and health literacy strategies using peers, coupled with decentralization of services to communities, resulted in a high uptake of health services. Compared to facility-based services, a relatively high percentage of males were reached, and demand and acceptance of PrEP was high among adolescent females and males. These initial results reinforce that service delivery models should be reviewed to ensure they respond to AYP needs, in order to reach this subpopulation with much-needed HIV prevention and C&T services. ICAP will continue to work with local partners to strengthen and expand this strategy to other communities within Nampula Province.

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Continuity of HIV Testing Services Through Adoption of HIV Self Testing During the COVID-19 Pandemic in Plateau State, North Central Nigeria

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Background: In 2020, Nigeria had one of the highest number of people living with HIV (PLHIV) globally. The 2018 Nigeria HIV/AIDS Indicator and Impact Survey (NAIIS) estimated that only 46.9% of PLHIVs aged 15-64 years were aware of their HIV status pointing to a significant gap. The emergence of the COVID-19 pandemic further threatened to widen the gap by hampering access to HIV testing services. To improve the identification of HIV-positive individuals, self-testing services was introduced in Plateau State, Nigeria. In this study, we highlight the adoption of HIV self-testing in the face of the COVID-19 pandemic towards sustaining HIV case identification in Plateau State.

Material and Methods: The study is a descriptive cross-sectional study of clients offered HIV self-testing from October 2021 through September 2022. Individuals were screened using a standardized HIV screening tool to determine their eligibility for a HIV test. Of those screened, approximately 15,041 clients were offered free HIV self-testing kits. Data was sourced from the National HIV testing service (HTS) registers and the Nigerian Medical Record System (NMRS) and statistically analyzed using Excel worksheet.

Results: 3% of clients {n=415 (115 males and 260 females)} had a positive HIV result following use of the self-test kit. All 415 individuals reporting a reactive self-test result were referred for a confirmatory test based on the National HIV testing algorithms. 95% {n=396 (145 males, 251 females)} of the referrals remained positive and were all linked to treatment services.

Conclusion: To ensure continuity of HIV testing services during the COVID-19 pandemic, there is need to adopt innovative testing strategies that provide the opportunity to adhere to existing protocols and reduce the risk of exposure for both beneficiaries and health care providers. Therefore, the adoption of HIV self-testing will lend to continued case identification by promoting access to safe, effective, and more convenient testing services.

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Improving PrEP Continuity of Services Among Key Populations Through Engagement of Drop-In-Centers (DICE). A Case of St Francis Health Centre Migeera, Nakasongola District (Uganda)

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Background: Pre-Exposure Prophylaxis (PrEP) is one of the recommended HIV prevention measures used by HIV negative clients recommended by the world health organization. PrEP as a prevention method targets key and priority populations (KPs and PPs) mostly female sex worker (FSW) a predominate sub population in Migyera town council. However, continuity of PrEP services is dependent on its availability and accessibility to the user. At St. Francis HC III, PrEP continuity (PREP_CT) among KPs was at 25% as of November 2021 against the expected 60% target as guided by ministry of health, Uganda. This was because of lack of awareness for PrEP use among KPs, 2) poor documentation lack of mechanisms for tracking defaulters knowledge gaps among service providers and poor service access due to long distances from the facility. It is against this background that the facility team sought to improve this suboptimal performance using a CQI approach from 25% in November 2021 to above 60% by June 2022.

Material and Methods: We conducted a data use meeting involving the facility, DICE team to identify performance gaps affecting continuity of PrEP services, and developed interventions, which included: line listing all KPs eligible for PrEP_CT and conducting follow up with help of KP peers from different hotspots; attached facility staff to the DICE to run the clinic; improving use of PrEP appointment registers for easy tracking of appointment and conducting community outreaches to reach those that cannot easily access

PrEP services. We also reviewed registers and KP combination tracker on a weekly basis to evaluate PrEP_CT performance.

Results: Following the implementations of the tested interventions, a progressive improvement was registered. The continuity on PrEP moved from 25% in November 2021 to 86% by end of Jun 2022. Stigma among KPs reduced since the service area (DICE) was convenient and more private.

Conclusion: PrEP clinics and improved use of PrEP appointment book improves PrEP appointment keeping hence improved continuity of PrEP services. Availability of DICE as a community service point for KPs created easy access PrEP services. Periodical monitoring of the utilization of services at the DICE created an opportunity for improvement.

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Leveraging Private Sector Partnerships to Promote HIVST Uptake in Kampala, Uganda

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Background: In the efforts to strengthen HIV self-testing in the private sector, partnerships provide improved access to financial resources, efficiency, scalability, sustainability and jointly solutions design. SHIPS project mapped out key partners in HIVST space to leverage their long-standing experience in HIVST. Established partnerships with various players based on project needs including the need to sell HIVST, clients' needs to be linked to HIV prevention, confirmatory testing and treatment services and demand creation, among others. We established partnerships between January 2022 to date to build a private sector market with public health impact.

Material and Methods: These partnerships were needed to create mutually beneficial and impactful solutions through collaboration where the public benefits from increased access to HIVST services as the private sector's self-care business increases. Retail physical and online pharmacies located in

Kampala and licensed to operate and two distributors of quality assured HIVST kits licensed to operate as the country distributors were identified. An implementing partner with a well-established toll-free line was approached to provide call in and referral services to HIV prevention and confirmatory testing services. We contracted a digital agency to create awareness via digital platforms such as Facebook, twitter and Instagram. These partnerships were made official through signed MOU's and contracts. To strengthen capacity, training, support supervision and reporting are done. For contracted agencies, biweekly performance reviews are done to enable achievement of partnership goals.

Results: It is cost effective to jointly conduct demand creation activities with distributors leveraging on IEC materials and message development (Reached 9,065 and 11,994 individuals at pharmacy and community activations). Despite policy regulation by MOH, non-quality assured HIVST kits are available on the market- 66% non QA Kits sold. Reporting by implementing partners avails data that informs learnings and adaptations. The toll-free line received 655 inquiries on HIVST with 473 being males and 178 being females. Results interpretation was the highest reason for the calls with 365.

Conclusion: Partnerships are key in policy regulation and ensuring availability of HIVST Kits. MOH in collaboration with NDA need to regulate prefoliation on non quality assured kits on the market.

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Oral Pre-exposure Prophylaxis Continuation Rates in Serodiscordant Couples, Members of Key Populations, and At-Risk Adolescents and Young People in Manica Province, Mozambique

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Background: The efficacy of HIV oral pre-exposure prophylaxis (PrEP) is well-established, but its effectiveness is determined by its continued use during periods of risk for HIV infection. Many studies conducted in real-world programmatic settings in Africa have shown six-month continuation rates (defined variously) to be around 30%. The PEPFAR-funded and USAID-implemented Efficiencies for Clinical HIV Outcomes (ECHO) project started offering PrEP in Mozambique in October 2021, and it is now offered at 43 health facilities in four provinces (Sofala, Niassa, Manica, and Tete). ECHO analyzed PrEP continuation rates and assessed the sociodemographic factors associated with continuation of PrEP in Manica province.

Material and Methods: This is a quantitative, observational, cross-sectional study of routine data collected from the health facility PrEP registration book about HIV-negative patients who initiated PrEP between December 21, 2020, and March 20, 2021, in two urban and two periurban facilities in Manica province. These patients were followed for a period of 14-17 months, through May 20, 2022. PrEP medication was prescribed for daily dosing, with 30 doses dispensed at each visit. PrEP continuation, in this study, was defined as a person having picked up PrEP medication at least six times during the observation period.

Results: 382 clients were included, of whom 61% were female (median age 29 years; IQR 24-35 years). 66% of the clients were members of serodiscordant couples, 18% were sex workers, 8% were men who have sex with men, and 8% were at-risk adolescents and young people aged 15-24 years. 32 clients, or 8% of those in the study (95% CI: 5.5%-11.1%), met the definition of PrEP continuation. 25 (78%) of those who continued PrEP were female, 30 (94%) were part of serodiscordant couples, and 27 (84%) were over 24 years of age.

Conclusion: PrEP continuation rates are very low in Manica province, and nearly all clients who met the definition of PrEP continuation were members of serodiscordant couples. ECHO will conduct a qualitative study to understand clients' experiences of discontinuing PrEP in order to design an

appropriate programmatic response to improve prevention-effective adherence.

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Acceptability of Pre-exposure Prophylaxis Use in a High-Risk Cohort in Maputo, Mozambique

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Background: As part of strategies to reduce human immunodeficiency virus (HIV) transmission, the World Health Organization recommends combination prevention approaches. Oral pre-exposure prophylaxis (PrEP) reduces HIV transmission by over 90% and is recommended in high-risk populations. In Mozambique, PrEP is being implemented in the national health system since 2020 targeting female sex workers (FSW), men who have sex with men (MSM), and discordant couples. This secondary analysis of a high-risk cohort in Maputo-Mozambique, in preparation for a clinical trial of HIV prevention, assessed PrEP acceptability.

Material and Methods: Between January 2019 and February 2022, high-risk subjects for HIV infection, recruited from the general community, FSW, and MSM populations, were screened for HIV and prospectively followed for a minimum of six months. A structured questionnaire on knowledge and acceptability of PrEP was administered at baseline. Descriptive statistics were used to summarize responses to the questionnaire (StataCorp V16.1).

Results: In total, 272 participants responded to the questionnaire of whom 212 (77.9%) were men and women from the general population, 30 (11.0%) were FSW and 30 (11.0%) were MSM. The mean age of study participants was 23 years (interquartile ranges [IQR]:19-26), and 208 (76.5%) had or were attending secondary level of education. Over half of subjects (157; 57.7%) had never heard of PrEP and none had ever taken PrEP. The majority of participants (90.1% [245/272]) would accept PrEP

if it was offered, while 9.9% (27/272) would either refuse it or was uncertain of their choice. Of the latter, 55.6% (15/27) were males, 40.7% were aged 20-25 years, 81.4% (22/27) had 2 or more sex partners, and 29.6% (8/27) were FSW/MSM.

Conclusion: PrEP acceptability was high, both in the general high-risk population and in FSW and MSM. About a third of those who either refused or were uncertain of their choice were FSW or MSM. We did not assess the need for consistent use of PrEP or its side effects, which contribute to lower uptake of PrEP in some settings. There is a need to reinforce education on PrEP and increase access to this method in high-risk populations in Mozambique.

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Assessment of Private Sector Involvement in HIVST and PrEP Implementation in Nigeria

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Background: Nigeria has made significant progress with the implementation of HIVST and PrEP such as the approval of products, development of national guidelines, and reporting tools. However, there is need to understand how the private sector can optimize delivery of HIVST and PrEP. This study was conducted to identify existing systems that support the availability, correct usage, affordability, and accessibility in the private sector in Nigeria.

Material and Methods: Population Council in collaboration with NACA conducted an assessment in 6 states (Abuja, Nassarawa, Rivers, Imo, Lagos, and Ogun) in Nigeria. 151 Patent and Proprietary Medicine Vendors (PPMVs) and 136 Community Pharmacists (CPs) were recruited and quantitative survey was conducted among them. Stakeholders dialogues (16) and Key Informant (14) Interviews were conducted with government and private sector and advocacy groups.

Results: More HIVST than PrEP were sold in the private sector. CPs (63%) and PPMVs (27%) sold HIVST while CPs (15%) and no PPMV sold PrEP. Stakeholders reported that a lack of awareness

about HIVST and PrEP in the community has contributed to the suboptimal sale of these products. CPs and PPMV sold many HIVST brands and were not aware of the brands authorized for use in Nigeria. Guidelines for PrEP and HIVST were not widely available within the private sector. Less than half of PPMVs and CPs (45.6%) had guidelines for HIVST dispensing and only one-third had guidelines for HTS. Also, only CPs (23%) and PPMV (43%) selling HIVST are HTS centers. HIVST is more expensive at CPs N1,138(\$3.0) than PPMV N548(\$1.4). Since more CPs sold HIVST, the price of the kit was unaffordable for many service users.

Conclusion: Government partnership with private sector is critical for the sustainable provision of HIVST and PrEP. NACA can increase public demand for HIVST and PrEP by investing in disseminating knowledge on HIVST and PrEP and where it can be obtained in the country. To improve service quality, guidelines for HIVST / PrEP and referral pathway directories should be developed by government and widely disseminated to the private sector. Approved brands of HIVST in Nigeria should also be communicated by NACA to the private sector.

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Serodiscordant Couples' Perspectives on an HIV/PrEP Educational Storytelling Intervention Piloted in Zambézia Province, Mozambique

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Background: In Mozambique approximately 10% of men/women couples are HIV serodiscordant. All persons living with HIV are eligible for antiretroviral treatment (ART), and seronegative pregnant and lactating women are eligible for pre-exposure prophylaxis (PrEP) medication to reduce

transmission risk. With adequate information, partners can support each other's PrEP and ART adherence. In 2021-2022, we piloted a storytelling educational intervention and explored its impact on HIV/PrEP service retention among serodiscordant expectant couples attending PrEP/HIV services in two rural health facilities in Zambézia Province. We herein describe participants' perspectives and experiences with receiving storytelling sessions.

Material and Methods: A purposive selection of participants took part in a semi-structured interview, between June-December 2022. Interview objectives were to elicit (i) perspectives and (ii) perceived impacts of the intervention, and (iii) suggestions for intervention improvement. Interviews were conducted by experienced interviewers in either Portuguese or local language, were audio recorded, translated to Portuguese as needed, and transcribed. Research team members applied a coding framework to all interview transcripts (in Portuguese) based on the interview questions.

Results: In total, 29 participants were interviewed, 15 (52%) women, with a median age of 24 years (IQR 21-30). Most participants reported positive experiences participating in storytelling sessions. Despite not all respondents being able to remember all content, most described the stories' content as relevant, addressing community members' main concerns regarding serodiscordant statuses and challenges associated with taking medications. Most participants reported learning about HIV and the importance of taking PrEP/ART medications from stories, while several others also recalled learning how to maintain a healthy partnership. Women generally reported that sessions improved their motivation and belief in their ability to continue taking PrEP, while many men reported a strengthened motivation to continue taking ART and support their partners to take PrEP. Many suggested expanding storytelling to other community settings (e.g., churches), reasoning that not enough community members were aware of PrEP's uses and benefits.

Conclusion: The intervention was perceived to be beneficial by the couples, increasing PrEP/HIV knowledge and confidence. Educational sessions based on storytelling could be beneficial to a wider community as a strategy to improve knowledge and awareness.

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Forgetfulness!- Unpacking and Addressing Structural Barriers of Antiretroviral Adherence Amongst HIV Positive Children and Adolescents in Eswatini

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Background: Achieving undetectable viral load is crucial for the reduction of HIV transmissions and AIDS related deaths. In Eswatini, there has seen great progress in the effectiveness antiretroviral therapy (ART), along with increasing numbers of persons living with HIV (PLWH) taking ART with optimal adherence and achieving HIV viral suppression. HIV positive children and adolescents 10-19 years old (CALHIVs) however experience many barriers to reaching optimal ART adherence and have worse treatment adherence and lower viral suppression rates compared to adults. The Triple-R project is supports the government of Eswatini to prevent new HIV infections and reducing the HIV vulnerability for children and adolescents aged 10-19 years. Aim: To understand the barriers for ART adherence amongst children and adolescents aged 10-19 years in Eswatini.

Material and Methods: Secondary data analysis of data collected routinely from January 2022 to December 2022 in the Triple R project was explored. Home Visitors (HVs) enrolled C/ALHIVs who are on treatment and conduct monthly home visits to provide treatment adherence support. During the visit, HVs facilitate active identification of C/ALHIV at risk of interruption to treatment using the HV manual. CALHIVs with poor adherence are also referred to teen clubs for further adherence support by HVs and nurses.

Results: In 2022, about 1615 (27%) of 5919 CALHIVs participated in teen clubs. The main reasons for poor adherence was forgetfulness (35%) and lack of family support, high viral load (9%), lack of food (5%), none disclosure (4%) lost to follow-up. There were other reasons like transport challenges and sickness and acceptance which also seem to be contributing factors of poor ART adherence.

Conclusion: Most CALHIVs forget their medication and as such they default. CALHIVs further default treatment because of lack of family support. Recommendation: Developing strategies and tools to help CALHIVs and their caregivers organize and prioritize their commitments may help increase their capacity to manage their condition. For CALHIVs who have trouble remembering to take their medication, text messaging reminders could offer easily accessible support and play a supportive role in providing adherence support. There is need for interventions that involve family members providing adherence assistance.

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Is Epidemic Control Real? Breakthrough QI Collaborative Learning on the Continuation of Treatment of (CoT); Case Study of Busia CRH and Mt. Elgon SCH

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Background: Dumisha Afya project achieved a TX current of 54801 clients at the end of Q1 2022, a drop from 54904 Tx current at the end of Q4 2021. The loss in the TX current was associated with Transfers out (19%), deaths 7%, and IIT (74%). To curb this, the project initiated CQI projects for improvement to provide quality services to the clients. Improvement objectives. - (SMART Objectives): 1.To reduce the rates of overall IIT in Mt Elgon sub-county hospital from 7% to less than 2 % by April 2022; 2.To reduce the overall rate of IIT in Busia County and Referral Hospital from 7% to less than 2 % as of April 2022

Material and Methods: Brainstorming and analysis of data to find the gaps and root causes. Develop interventions through work improvement teams (WITs) at facilities with support from the QI coaches. Identifying indicators and frequency of monitoring, the team to collect data, data collection tools, and scheduling for data collection. Implemented activities and followed up through regular meetings every two weeks to review the

progress and assess the extent of interventions implementation. The project team provides regular support through regular TA visits to the facilities, attending the WIT meeting, and providing mentorship. Regular reviews (weekly) of the processes with the aim of studying the extent of implementation.

Results: Improved patient flow. Busia CRH reduction of IIT from 7% as of February 2022 to 0.8% as of August 2022. Improved appointment keeping from 75% to 81%. Improvement in enrolment of clients in special clinics and DSD models (NCD/HIV clinics, DDD/DSD, Male clinics). Introduction of Flexi hours clinic at BCRH (Early morning clinic from 6 am). Reduction of IIT in Mt Elgon SCH from 7% to less than 2%. Increase in TX current from 506 (Feb 2022) to 547 (August 2022)

Conclusion: HIV epidemic control can be achieved by ensuring all recipients of care are maintained on care and suppressed. Quality improvement methodology greatly impacts the implementation of interventions with an impact on epidemic control.

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PrEP Delivery Among Adolescent Girls and Young Women in Sub-Saharan Africa: A Scoping Review

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Background: In sub-Saharan Africa (SSA), adolescent girls and young women (AGYW) account for six in seven new HIV acquisitions. PrEP provision

is recommended by the WHO and UNAIDS for AGYW who are in high HIV burden areas. We conducted a scoping review to map the research that is currently available on real-world PrEP roll-out among AGYW in SSA.

Material and Methods: We searched PubMed and Ovid (including Embase, MEDLINE) from June 2022 to January 2023 with terms related to PrEP, AGYW, roll-out, and SSA countries. Eligible studies included quantitative and qualitative studies that reported outcomes (e.g., PrEP uptake and persistence), and facilitators and barriers for both the user (AGYW) and implementer (e.g., healthcare workers). One reviewer searched and screened studies for inclusion and a second reviewer independently reviewed a selection of studies to ensure reliability and consistency of inclusion. Narrative synthesis of data from included studies was conducted to present findings.

Results: Out of 649 studies identified, 41 studies were eligible for inclusion (6.3%). 11 studies were excluded for not disaggregating findings by age and sex despite including AGYW. Most studies were qualitative (56%) and conducted in South Africa and Kenya (95%). Only studies on oral PrEP met the inclusion criteria. Quantitative studies presented challenges with PrEP initiation and persistence among AGYW. Main reasons for discontinuation include low perceived HIV risk and daily pill burden. Qualitative studies provided insights from AGYW and implementers on the barriers (e.g., side-effects, stigma, practical issues) and facilitators (e.g., social support, empowerment) for uptake and adherence. Key lessons from implementers include the need for raising PrEP awareness, youth-friendly services, and counselling to support AGYW in PrEP uptake and persistence.

Conclusion: This review highlights real-world PrEP roll-out challenges, especially poor PrEP adherence due to individual-, household- and community-level barriers, and lessons learnt from PrEP implementers. Findings demonstrate that AGYW require additional support for effective PrEP use. Studies should stratify by age and sex to inform the PrEP delivery evidence base for AGYW. Studies identified were limited in geographical scope; more data is needed for PrEP delivery among AGYW across the region, including other PrEP modalities as they roll-out.

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Voluntary Medical Male Circumcision (VMMC) Is an Effective Intervention for Reducing New HIV Infections

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Background: Voluntary medical male circumcision (VMMC) is an effective intervention for reducing new HIV infections. In Mozambique, VMMC services started in 2009, and by June 2022, more than 2,421,646 men had received VMMC. Despite these efforts, 27% of men aged ≥ 15 years in Mozambique have not been circumcised. ICAP, in collaboration with the provincial health leadership (DPS/SPS) and the Mozambique National Directorate of Prison Services (SERNAP) implemented VMMC services in selected prisons to improve access to HIV services for this vulnerable population.

Material and Methods: ICAP, in collaboration with DPS/SPS and SERNAP, mapped and identified prisons within ICAP-supported VMMC health facility catchment areas. Preparatory work included advocacy with prison leadership, meetings to promote demand for VMMC with prison workers and prisoners, a needs assessment to determine the preferred service delivery model (minor renovations of the existing space or mobile units) and allocation of temporary staff. HIV services were offered with prisons functioning as temporary sites, in which all men received VMMC services and post-operative follow-up. We reviewed VMMC service data from three prisons within Quelimane and Matola districts, two of the highest VMMC saturated districts within Zambezia and Maputo provinces, respectively.

Results: Between October 2021 and September 2022, 7,918 men (≥ 15 years) were circumcised within these two districts through health facilities and temporary sites (including prisons). A total of 12% (926) of these procedures were performed through temporary services within three prisons. Of these men, 95% (882/926) were tested for HIV and 27% (234/882) tested positive, which is higher than the 16% among men in the general population

attending VMMC services within the same districts. Of the individuals circumcised during this period, 98% (903/926) received at least one post-operative follow-up visit. The adverse event rate was 0.03% (1 infection) and was followed until cure.

Conclusion: Adapting service delivery models to implement temporary services at prisons successfully reached this vulnerable key population with essential HIV prevention services. HIV positivity yield in this sub-population was higher than among men in the general population, reinforcing the importance of HIV prevention services and the need to ensure linkage to HIV care and treatment is available.

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Barriers to PrEP Implementation; Uptake and Retention for Gays, Bisexuals, and Men Who Have Sex With Men in Ghana - Perspectives From PrEP Implementers

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Background: Pre-exposure Prophylaxis (PrEP), if taken as prescribed, is highly effective in preventing HIV infection. Increasing access to and uptake of PrEP is crucial for reducing the spread of HIV among gays, bisexuals, and men who have sex with men (GBMSM) in Ghana, as they carry a disproportionate burden of HIV (17.5%). Despite ongoing program efforts, uptake and retention remain challenging among GBMSM in the country. This study, therefore, serves as one of the first to explore barriers to PrEP implementation among GBMSM from the perspectives of providers in the country.

Material and Methods: We held a focus group discussion with current and previous PrEP implementing partners in Ghana to evaluate the

factors affecting the initiation and continuation of PrEP among GBMSM. The implementing partners included seven program implementers and two healthcare workers. We developed a qualitative short descriptive questionnaire completed by implementing partners to solicit their individual views and experiences on targeted areas of PrEP implementation in Ghana. We performed a summative content analysis to define the identified barriers and recommendations to PrEP implementation among GBMSM in Ghana.

Results: We found that individual-level factors, e.g., fear of PrEP side effects, the stigma associated with taking PrEP, challenges with daily medication use, and fear of HIV testing procedures, affected PrEP initiation. At the community level, the stigma associated with HIV and PrEP affected the interest of potential PrEP mentors to take the lead in PrEP promotion. Implementation-level factors, e.g., stigma from healthcare facilities, lack of decentralized PrEP support, target-focused implementation programs that failed to cultivate sustained PrEP understanding and uptake, and lack of safe spaces for PrEP support services, also affected PrEP uptake among GBMSM in Ghana.

Conclusion: This study highlights the need for targeted interventions to increase education, support, and behavioral change for PrEP uptake and retention for GBMSM instead of focusing on only reach and enrollment numbers. The study also shows that addressing stigma at both individual and healthcare levels and improving access to PrEP services in safe and inclusive spaces remain crucial for increasing PrEP uptake and reducing the spread of HIV among GBMSM in Ghana.

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Strategies to Optimize Integration of PrEP Into Harm Reduction Services for People Who Use Drugs: Perspectives From Healthcare Workers in Kampala, Uganda

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Background: Integrating pre-exposure prophylaxis (PrEP) delivery for people who use drugs (PWUD) into facility- or community-based harm reduction programs may optimize service provision and reduce HIV acquisition in this key population. Healthcare workers (HCWs) providing PrEP or other harm reduction services offer important insight into potential challenges and strategies for optimizing service integration.

Material and Methods: Between March 2021–September 2022, semi-structured in-depth interviews were conducted with HCWs experienced in PrEP or harm reduction service provision for PWUD in Kampala, Uganda. Thirty HCW interviews were conducted across five program sites. HCWs represented a range of cadres including clinical officers, nurses/nurse counselors, medical doctors, psychologists, social workers, and counselors. Harm reduction services included needle syringe programs and medication-assisted treatment. Interviews were audio recorded, translated, and transcribed verbatim. Grounded in the Consolidated Framework for Implementation Research, directed content analysis of transcripts was used to identify HCW perspectives on strategies for integrating PrEP and harm reduction services.

Results: HCWs were knowledgeable about PrEP, recognized the importance of PrEP for HIV prevention among PWUD, and were willing to prescribe PrEP. Offering the “whole package” of services in one setting addresses key challenges to service utilization identified by PWUD enrolled from program sites. Healthcare workers believed strategies to integrate PrEP into harm reduction services prioritized client needs and resources and provided a relative advantage when compared to existing delivery via HIV clinics within public health facilities. Transportation costs for clinic visits were perceived as prohibitive for many PWUD. Therefore, HCWs were most enthusiastic about community-based PrEP integration strategies that

would take “services to clients where they are” and address client concerns around stigma experienced in facilities. Other strategies to overcome transportation barriers included community-based refill models and availability of long-acting PrEP. Strategies to reduce stigma barriers included engaging peers in delivery approaches, believing this could facilitate creation of a more “friendly” environment that improves service utilization.

Conclusion: Healthcare workers viewed integration of PrEP into harm reduction services as an effective strategy to increase overall uptake of HIV services for PWUD, especially when delivered in a community setting, such as at drop-in centers providing services for PWUD.

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A Comparative Analysis of Pre-exposure Prophylaxis Uptake Rate Amongst Sub-Populations of High Risk Adolescents and Adult Population in 5 States of Nigeria - A CDC Funded Program

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Background: In 2015, the WHO recommended Oral Pre-Exposure prophylaxis (PrEP) to be offered as additional prevention for people at substantial risk of acquiring HIV. Adolescents, especially adolescent girls and young women, drive the epidemics of HIV new cases in Nigeria. While there is accelerated gains towards epidemic control in adult population, major gaps still exist amongst adolescents and PrEP use has been found to be an effective strategy in HIV prevention and epidemic control. This study looks at PrEP uptake amongst high-risk adolescents 10-19 years compared to the high risk older population (20 years and above) in a US-Centers for Disease control (CDC) funded grant in Benue, Oyo, Ogun Ondo and Plateau states of Nigeria.

Material and Methods: Adolescent- friendly PrEP service providers offered PrEP to high risk Adolescents and sero discordant couples drawn from the general population and Key population after screening and ascertaining their eligibility for PrEP uptake. A retrospective data analysis was conducted with data from health records collated from October 2022 to January 2023. This data looked at PrEP uptake amongst the adolescent group disaggregated by ages 10-14 and 15-19 years compared to the older population.

Results: A total of 7,308 (3,067 Males and 4,241 females) persons were enrolled for PrEP services in the 5 states across the adolescent and Adult population. 6,852 (94%) were >19 years old, 369 (5%) were 15-19 years, and 87 (1%) were 10-14 years. Most of the PrEP beneficiaries were female for both adolescents, 247 (54%) and adult 3,994 (58%) population.

Conclusion: Optimizing PrEP uptake amongst adolescents will help progress towards achieving epidemic control amongst this sub-Population. There is a need to deploy cutting edge strategies to improve PrEP uptake amongst high risk adolescent population.

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The AWAMU HIV Awareness Campaign: Training Peer Educator Champions to Spread HIV Prevention and Awareness Information Among Key Populations in Five Districts Across Uganda

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Background: In Uganda, as of 2021, the estimated HIV prevalence among adults aged 15-49 is 6.2%, with HIV prevalence among key populations estimated to be 3times that. This is attributed to a

number of factors, including: commercial sex, drug use, limited access to HIV prevention and testing services, and poor perceptions and attitudes towards HIV prevention programs.

Material and Methods: Working in partnership with DHOs and local health partners, communities in need of HIV prevention and testing, outreach were identified for awareness. A two-day Peer Educator Champions (PECs) training in HIV prevention messaging aimed at overcoming barriers between HIV knowledge and social stigma was conducted in each of the 5-districts. PECs approached key populations in various locations for free HIV services, including: HCT, PrEP information and condom distribution. A structured survey was conducted to collect program data which was uploaded in real time onto a secure encrypted database using cellphone data or wi-fi.

Results: A total of 67 PECs were trained in Kabale, Sheema, Mbarara, Kasese and Lira. They consisted of young people, HIV +ve individuals, and key community leaders. 4,996 people from key populations were reached with HIV information and awareness. Of these, 27% were sex workers, 13% truck drivers, 24% 'Boda Boda' drivers and 36% youth and adolescents. 3,641 were referred for HIV testing with 403 people referred for PrEP. The program opened a mobile HIV clinic in Katuna (Ug/Rwanda border) for targeted testing among special groups. A total of 147 HIV +ve individuals have been linked to care through our HIV Adherence, Retention and Treatment (HART) program which uses quality improvement methodology to monitor adherence and retention. PECs were successful at creating networks among key populations which increased attendance.

Conclusion: The results show that a peer-to-peer approach to HIV awareness is effective. Despite the challenges of low resources and hard to reach communities, we were able to exceed our targets by 50%. we are confident that AWAMU program will yield positive results in Uganda as we continue.

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4th Generation Rapid Test Kits- Managing Opportunity and Threats in Liberia

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Background: Globally, HIV remains an important public health concern with 38.4 million people living with the virus, 650,000 deaths and 1.5 million new infections in 2021. With a dwindling funding landscape, the need to mitigate new infections cannot be overemphasized, especially in Liberia with a disproportionately higher HIV prevalence; 37.9% among MSMs, 16.7% among FSWs and 27.6% among TGs Liberia compared to 2.1% in General Population. WHO recommends immediate treatment for newly diagnosed clients, and a prevention strategy with pre-exposure prophylaxis to mitigate HIV transmission. The commonly used 3rd Generation rapid test kits for HIV screening have limitations with missing early HIV infections. The 4th generation test kits present complexity in algorithm confirmatory for anti-retroviral therapy. WHO recommends three serial antibody-positive results for HIV test confirmation. Liberia does not routinely support nucleic acid testing for HIV confirmation. We present a framework for successful integration of HIV diagnosis with 4th generation test kits in Liberia.

Material and Methods: Four (4) paired result outcomes are possible with 4th generation tests: i) antibody negative, antigen-negative; ii) antigen negative, antibody positive; iii) antigen positive, antibody positive, and iv) antigen positive, and antibody negative. First outcome independently confirms HIV negative test outcome and does not need further action. Second and third outcomes qualify for the second antibody test on routine serial algorithm. The fourth outcome presents discordance of a more specific positive test result and a sensitive negative test result. Two arms of laboratory and clinical interventions are proposed. First arm (HIV treatment intention where a nucleic acid test is not routinely available, as in SSA) – recommended to delay treatment with psychosocial counseling with repeat testing within 2-weeks. Second arm (HIV prevention intention) - proceed with 2nd and 3rd serial testing antibody

testing and start immediate PrEP for a confirmed HIV-negative outcome.

Results: The 4-arm analysis shows HIV testing using 4th generation test kits is feasible in Liberia and a national program with a similar context.

Conclusion: HIV testing with 4th generation has potential for earlier diagnosis of HIV and should be promoted for earlier anti-retroviral therapy and HIV prevention with PrEP in Liberia.

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Assisted Partner Notification Through Psycho-Social Support Amongst Adolescents Living With HIV at the Mulago ISS Clinic

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Background: Makerere University Joint AIDS Program runs one of the largest HIV/AIDS pediatric, adolescent and youth clinic in Africa based at Mulago Hospital, Kampala. Over 1000 HIV-positive adolescents and youth are under care. In Uganda about 81% of the population know their HIV status. Assisted partner notification on the other hand, is a public health strategy that provides HIV testing to individuals with exposure to HIV and are at risk of infection. Data indicates that only 23% of adolescent girls and 17% of adolescent boys aged 15-19 in Eastern and Southern Africa- the region most affected by HIV have been tested in the last one year (UNICEF 2018, July).

Material and Methods: The Peer Support Groups strategy was started to cater for the psychosocial needs of all HIV positive adolescents undergoing medical care. It promotes positive health lifestyles e.g. emotional well-being, adherence to medications, etc. for secondary HIV prevention among young people and partner notification, this would further reduce on the incidences of new HIV-infection.

Material and Methods: The Peer Support Group is a learning and support intervention delivered to all children, adolescents and youth aware of their HIV positive sero-status. All HIV positive adolescents aged between 10–18 years and youth 19 years plus are enrolled into the support group once disclosed to about their HIV positive status. Main activities include but not limited to peer education and counselling, reading and writing using a team of committed health workers as facilitators.

Results: Through the peer support groups, 17 out of 50 eligible clients were interviewed, 31 clients were elicited, 31 clients were notified, however 29 of the notified were tested, with only 9 females and no males turning out HIV positive, 9 were linked to access HIV care at mulago ISS clinic.

Conclusion: The empowerment from the peer groups attained by the adolescents, avails them with the necessary tools to disclose to their significant others, this can be used in prevention of secondary infections, usually due to non-disclosure and poor adherence. This can be adopted in other adolescent HIV care centers, this enables attainment of the 95-95-95 by 2030.

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Factors Contributing to Pre-exposure Prophylaxis Access and Discontinuation Among Adolescent Boys and Young Men in Kwazulu-Natal, South Africa: A Qualitative Study

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Background: Pre-exposure prophylaxis (PrEP) is an HIV prevention strategy that can reduce the risk of HIV acquisition by more than 90% if taken consistently. South Africa started rolling out PrEP in 2016, initially for selected population groups before expanding access to more people. However, there is a dearth of research on PrEP among adolescent

boys and young men (ABYM), despite the high rates of new HIV acquisition among them. To address this gap, we explored factors contributing to PrEP access and discontinuation among ABYM in KwaZulu-Natal, South Africa.

Material and Methods: In June 2022, we conducted a qualitative study at uMgungundlovu district, KwaZulu-Natal province, South Africa, through face-to-face in-depth interviews. Sexually active ABYM aged 15 – 35 years who tested HIV negative were recruited at purposively selected PrEP service delivery points (SDPs) (i.e., healthcare facilities, secondary schools and Technical Vocational Education and Training (TVET) colleges, and community-based youth zones). We synthesized factors contributing to PrEP access and discontinuation. Thematic data analyses were conducted using Nvivo version 11, before collating and reconciling the results.

Results: The results included 11 male participants, aged 18-35years. We found that knowledge about PrEP was limited among the participants. The participants indicated that social media platforms, advertisements in TVs and radios, community outreach programmes or campaigns, taverns and schools should be used as important tools for educating young people about PrEP. In terms of preference, the participants indicated that they do not prefer to access PrEP through public health clinics, due to stigma, being judged and long waiting queues, but rather from schools, youth centers, pharmacies, and community designated areas that are closer to them. Participants were worried that side effects, stigma associated with taking ARVs, transport issues (long distance/no transport money), may affect PrEP access and/or continuity.

Conclusion: Many structural and personal factors inhibit PrEP access and/or contribute to discontinuation among AYBM. Targeted interventions to improve PrEP knowledge and increase the perceived value of PrEP to improve the demand among AYBM are urgently required, as well as concerted efforts to reduce existing hurdles that prevent AYBM from conveniently accessing PrEP.

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I Am Not at HIV Risk: Reasons for Sexually Active Eswatini Adolescents for Refusing PrEP

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Background: Evidence have shown that HIV pre-exposure prophylaxis (PrEP) is highly effective when taken correctly and consistently by individuals at substantial risk of HIV infection. Due to the high HIV incidence among the general population of Eswatini, PrEP for HIV-exposed individuals is recommended. The Triple-R project is supporting the government of Eswatini to prevent new HIV infections and reducing the HIV vulnerability for orphans and vulnerable children, adolescent girls and young women (AGYWs). As part of the project, AGYWs are assessed for their health needs and then linked to health services as per identified needs including PREP. Even though awareness on PrEP has been raised in the country, PrEP uptake remains very low. Research Question: Why are AGYWs refusing PrEP as an HIV prevention Strategy?

Material and Methods: Secondary data analysis of routine data collected within ongoing project implementation was explored to assess the needs of AGYWs. Trained Mentors recruit and complete needs assessment where AGYW's HIV risks and health needs are assessed. About 4300 AGYWs were assessed, 2500 were at HIV risk in which 929 of those AGYWs indicated that they are not willing to take PREP. The 929 clients formed the study sample.

Results: About 90% of the 929 AGYWs do not consistently use condoms during sex. The median age of AGYWs was 22 years. About 50% AGYWs did not view themselves as being sufficiently at risk of HIV to warrant PrEP use. There was also a 23% consistent belief that sexual partners will not approve PrEP as they will think they are on ART. About 17% cited lack of interest in PrEP and taking the treatment daily. "It's stressful to take medication everyday when not sick". Lastly, a few were scared of PrEP side effects.

Conclusion: There is need for more research about people's perceptions and understanding of HIV risks and PrEP. There is need for programs to address the stigma surrounding taking ART medication. There is therefore strong need to expand PrEP messaging for both men and women to increase uptake to help PrEP users identify HIV risk periods.

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Factors Affecting PrEP Client Retention. Case of Busia County, Kenya

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Background: HIV prevention through PrEP is a key intervention in HIV epidemic control. Daily oral PrEP has been shown to be very effective in reducing HIV acquisition. Effective prevention strategies for HIV acquisition are an important public health priority. The project has continually been performing poorly on PrEP retention while PrEP initiation is doing well. The objective of the study; determine factors leading to low PrEP retention. Hypothesis H0; Clients on PrEP care do not prefer getting services from HIV clinics.

Material and Methods: The study county is Busia in Kenya. The study period is three months (October to December 2022). The study population was the clients on PrEP both active and LTFUs/Defaulters. Development of the questionnaire and identification of 2 study sites; Busia CRH and Teso North Sub-County Hospital. Identification of interviewers and distribution of the survey tool. Data entry into excel and analysis using Pivot tables.

Results: The survey had 57 respondents with the majority age ranging (from 30-39 years) 25%. Females were the majority at age of 20-29 years (80%). The study found that Married clients (79%), those in discordant relationships (53%), and with multiple sexual partners (39%) were the major beneficiaries of taking PrEP with 84% of the respondents demonstrating to have knowledge of PrEP drugs and reasons they take with only 25% taking their drugs all time while 67% often taking the drugs. The respondents rated the services 42%

as good and 49% as often good. 47% often missed clinic and 35% never missed at all with those missing associated with conflicting tasks 12%. 47% are comfortable moving out of the HIV clinic and 40% are not comfortable at all. 88% were comfortable joining support groups while 82% not comfortable take drugs outside the health facility.

Conclusion: The lack of support groups and lack of multiple service delivery options for the provision of PrEP services affects the retention of PrEP clients.

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Contribution of Community Peer Educators in the Scale up of PrEP in Burundi Military Clinics

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Background: In Burundi, military personnel are disproportionately affected by HIV compared to the general population due to high mobility, concurrent sexual partnerships, deployment on foreign missions, and the environments in which they work. As of 2017, HIV prevalence among military personal was 1,8% versus 0.9% among the general population. In 2021, oral PrEP was introduced in Burundi for prevention of HIV transmission among high-risk populations. For military clinics, PrEP was initiated for military populations (active military, their family members and other sexual partners). The aim of this pilot study was to explore the acceptability and uptake of PrEP among military personnel and their sexual partners in Burundi.

Material and Methods: This study is a secondary analyse of Department of Defense program data collected between October 2021-September 2022 from 7 military clinics in Burundi. Data were analysed descriptively using Microsoft Excel.

Results: As of September 2022, 139 military personnel and their sexual partners had initiated

PrEP. Among those who initiated PrEP, 71% (n=99) were female and 29% male (n=40). Among female initiators, 19% (n=27) were between 15-24 years, 25% (n=35) 25-34 years, 14% (n=19) 35-39 years, 8% (n=11) 40-44 years, and 5% (n=7) 45 years or older. For male initiators, 2% (n=3) were between 15-24 years, 8% (n=11) 25-34 years, 6% (n=8) 35-39 years, 6% (n=8) 40-44 years, and 7% (n=10) 45 years and older. Regarding to the risk factors, 76%(n=106) have multiple sexual partners, 24%(n=33) are serodiscordant couples. The proportion of initiators increased over time with 1% in Q1, 9% in Q2, 47% in Q3, and 82% in Q4.

Conclusion: Results from this study suggest that PrEP may be an acceptable approach for HIV prevention among military with multiple sexual partners. Based on the findings, interventions may want to focus on the female sexual partners of military personnel given that 71% of participants who initiated PrEP were female. This study also showed an increase in PrEP uptake over time, showing the importance of long-term promotion and education strategies. Further research is needed to understand the factors that motivate or hinder PrEP uptake among military populations.

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Estado Positivo, Uma Forma de Ser e Agir*: Use of Facebook to Engage Young Boys Aged 15-24 Years in HIV Prevention, Care, and Treatment, in Four Provinces of Mozambique

*Positive Thinking, A Way to Be and Act

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Background: Reaching global targets to end AIDS by 2030 requires focusing on people who have not yet accessed HIV services. Young people (15-24 years of age) account for 30% of all new adult HIV infections. Although young women are disproportionately affected by HIV, young men are less likely than their

female counterparts to get tested for HIV, initiate antiretroviral therapy, and remain engaged in care. Social media is increasingly used to deliver HIV informational campaigns; Facebook, is a promising venue. This study analyzed the USAID-implemented and PEPFAR-funded Efficiencies for Clinical HIV Outcomes (ECHO) project's social media strategy performance to reach young boys in nine cities across the four provinces supported by the project. The study assessed the strategy's impact after the first six months of implementation.

Material and Methods: Research on social network habits among this study's target populations in the four mentioned provinces found that Facebook and WhatsApp are the social networks most used by those 15-24 years of age. ECHO designed a two-phase approach to implement its social media strategy: (1) recruit social 'followers' by communicating first-person narratives and highlighting role models and (2) promote of HIV services through challenges, quizzes, tips, and influencer outreach. Content focused on issues related to prevention and care and treatment. We analyzed performance using two indicators: (1) engagement rate, defined as the number of interactions (reactions, comments, shares, and clicks) by the number of users reached and (2) the growth rate of followers, or those who have 'liked' the outreach page.

Results: As of November 30, 2022, the number of fans on ECHO's Facebook page was 3,140, which showed a growth rate of 65.7% from the first 3 months of implementation (June-August 2022). 99% of the fans were men, 95% aged 18-24, and 97.5% were from target locations. The engagement rate was 4.9%.

Conclusion: ECHO's Facebook strategy is reaching its target population, though Facebook's age restrictions (<18) pose challenges reaching the 15-17 age group. An engagement rate between 3.5%-6% is generally considered high in the social media industry. Further analysis is necessary to measure the strategy's impact on demand for HIV services and retention.

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“I Just Thought I Was Lucky to Be Protected From HIV”: Qualitative Evaluation of Pre-Exposure Prophylaxis for High-Risk Adolescent Girls and Young Women in Urban Lilongwe, Central Malawi

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Background: The Malawian Ministry of Health approved the use of oral pre-exposure prophylaxis (PrEP) for populations with high risk of acquiring HIV, including adolescent girls and young women (AGYW), as national policy in 2016. In Malawi, AGYW aged 15-24 are more than twice as likely to acquire HIV than their male peers. Prior to the national PrEP roll-out, we conducted a formative assessment during a PrEP demonstration project in Malawi to understand barriers and facilitators to PrEP use among AGYW.

Material and Methods: We conducted seven focus group discussions and 14 in-depth interviews with 76 HIV-negative AGYW aged 18-24 at higher risk of HIV who were eligible for PrEP at two urban health facilities in Lilongwe, Malawi. Seven health care workers (HCW) providing PrEP also participated in focus group discussions. We used Protective Motivation Theory (PMT) as a framework to develop interview guides. We developed a codebook using a combination of theory-driven codes derived from PMT, such as vulnerability and self-efficacy and a priori structural codes informed by the interview guide.

Results: AGYW were enthusiastic about PrEP as a discreet method to protect themselves from HIV, especially when factors that put them at high risk were outside of their control (e.g., ability to require

condom use and their sexual partners' behavior outside of their relationship.) However, AGYW expressed concerns related to HIV stigma, namely taking a daily pill and its similarities to antiretrovirals. HCWs were also concerned that the promotion/use of PrEP may disincentivize condom use and subsequently increase risk of unintended pregnancy and sexually transmitted infections. HCWs also reported that many AGYW did not adhere to the prescribed daily regimen for PrEP and may require additional support. Both AGYW and HCWs noted interest in injectable PrEP as a preferred method.

Conclusion: The results from this study demonstrate that AGYW at higher risk of HIV acquisition in urban Lilongwe are enthusiastic about protecting themselves from HIV and are interested in PrEP as a prevention method including an injectable, long-acting form of PrEP. HCWs can play an important role in educating AGYW clients on PrEP effectiveness, adherence, and use of combination prevention methods.

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Comparison of Survival Analysis Approaches to Modelling Age at First Sex Among Youth in Kisesa Tanzania

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Background: Many studies analyze sexual and reproductive event data using descriptive life tables. Survival analysis has better power to estimate factors associated with age at first sex (AFS), but Cox proportional hazards models may not be right model to use. This study used accelerated failure time (AFT) models, restricted Mean Survival time model (RMST) models, with

semi and non-parametric methods to assess age at first sex (AFS), factors associated with AFS and whether the underlying assumptions for each analysis are met.

Material and Methods: Self-reported sexual debut data from respondents 15-24 years in eight cross-sectional surveys between 1994-2016, and from adolescents' survey in an observational community study (2019-2020) in Kisesa Tanzania. In each survey, median AFS was estimated using non-parametric and parametric models. Cox regression, AFT parametric models (exponential, gamma, generalized gamma, Gompertz, Weibull, log-normal and log-logistic), and RMST were used to estimate and identifying factors associated with AFS. The models were compared using Akaike information criterion (AIC) and Bayesian information criterion (BIC) where lower values represent a better model fit.

Results: The results showed that in every survey, the Cox regression model had higher AIC and BIC compared to the other models. Overall, AFT had the best fit in every survey rounds. The estimated median AFS using the parametric and non-parametric methods were close. In the adolescent survey log-logistic AFT showed that females and those attending secondary and higher education level had longer time to first sex (Time ratio (TR)=1.03; 95% CI: 1.01-1.06, TR=1.05; 95% CI: 1.02-1.08 respectively) compared to males and those who reported not being in school. Cell phone ownership (TR=0.94, 95% CI: 0.91-0.96), consumed alcohol (TR=0.88; 95% CI: 0.84-0.93) and employed adolescents (TR=0.95, 95% CI: 0.92-0.98) shortened time to first sex.

Conclusion: The AFT model is better than Cox PH model in estimating AFS among the young population.

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Coordinating Implementation Science for Cabotegravir for PrEP in Africa: BioPIC's Implementation Study Tracker

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Background: Clinical trials have shown injectable cabotegravir (CAB) to be a safe and effective method for HIV pre-exposure prophylaxis (PrEP), with CAB for PrEP now approved by regulators in South Africa and Zimbabwe. As implementation research projects scale up, coordination across partners is critical to highlight research gaps, avoid duplication, promote cross-learning, and ensure lessons from oral PrEP are considered.

Material and Methods: The Biomedical Prevention Implementation Collaborative (BioPIC) was formed in 2018 to support successful introduction of new biomedical HIV prevention options, starting with CAB for PrEP, and features over 100 HIV prevention experts across 80 organisations and 20 countries. One of BioPIC's key roles is to serve as a clearinghouse to monitor implementation research projects and product introduction studies using BioPIC's publicly-available Implementation Study Tracker.

Results: As of January 2023, 15 CAB for PrEP Implementation studies in Africa are being tracked. Nine studies include locations in South Africa, three each in Kenya and Uganda, two in Zimbabwe, and one each in Burkina Faso, Côte d'Ivoire, Lesotho, Malawi, Mali, Mozambique, and Togo. Adolescent girls and young women feature in four studies, the most of any key population. Gay and bisexual men who have sex with men, pregnant and lactating populations, and sex workers feature in three studies each, while trans women feature in two studies and trans men in one. There are currently no known studies including people who use drugs or prisoners, though two studies do not target specific populations and three are yet to define target populations. Of the ten studies with known sample sizes, four have less than 1,000 participants, two have between 1,000 and 5,000 participants, and four have over 5,000 participants.

Conclusion: Inclusion of diverse geographies and populations in implementation studies is crucial so evidence around safety, adherence, delivery, and uptake in real-world settings can be generated. By acting as a coordinating mechanism, BioPIC and the implementation study tracker can help ensure research is coordinated for maximum impact and efficiency, and highlight where evidence is lacking,

so that no populations in Africa that might benefit from CAB for PrEP are left behind.

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A Continuous Quality Improvement Project on How ART Health Education Talks Affect Client Knowledge at the ART Clinic: A Case Study of Viral Load Health Education Talks at Six Health Facilities in Blantyre, Malawi

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Background: Malawi AIDS Counseling and Resource Organization employs expert clients (ECs) and treatment supporters (TS) to deliver ART health talks (HTs) in all its Ministry of Health-supported facilities, with the aim of increasing People Living with HIV's understanding of HIV/AIDS, adherence to ART, and viral load (VL) suppression. However, there is limited evidence to show that HTs increase knowledge. We present findings from clients exposed to HTs at 6 health facilities in the Blantyre district.

Material and Methods: A questionnaire was administered to 60 clients who received ART services at six different Blantyre facilities. Trained ECs and TS collected data before and after HTs. STATA v17 was used for descriptive data analysis, and inferential statistics (paired t-test) were computed to see if differences in knowledge pre- and post-HTs were statistically significant at a 95% confidence interval.

Results: There were 120 responses (60 pre- and 60 post-HTs). Females were 68% with an average age of 35 and 58% had completed at least primary school. Post-HT responses demonstrated a significant increase in total scores compared to the pre-responses. The most significant improvements were in questions on VL; pre-health talk, only 20% knew that Pregnant & lactating moms are supposed

to have VL collection every 6 months while 90% knew that after the post-health talk (p-value=0.00); 40% pre- and 95% post- health talk agreed that when VL is high, a person undergoes IAC sessions and then have a 3rd-month follow-up VL collection, (p-value=0.00); 38% pre and 85% post health talk disagreed that eating balanced diet food can decrease VL even if you are not taking ART, (p-value=0.00); and 58% pre vs 95% post-health talk knew that when their VL sample is not collected at their milestone, they had the right to request (p-value=0.00).

Conclusion: Health talks have a significant positive impact on improving the client's HIV/AIDS knowledge. Further work should assess if improved knowledge leads to increased HIV service uptake.

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De Stigmatizing the Sale of HIV Self-Testing Kits Through Bundling: Lessons From Implementation Science in Kenya

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Background: Testing is a critical entry point for HIV prevention. While research indicates that HIV self-testing (HIVST) kits are becoming increasingly available through retail pharmacies, they remain stigmatized and less openly purchased compared to sexual and reproductive health (SRH) products. PS Kenya explored a product bundling strategy to determine whether clients could be convinced to purchase HIVST kits alongside other SRH products in retail pharmacies in a bid to combat stigma and promote selfcare. Activities were implemented between July to December 2022.

Material and Methods: PS Kenya in partnership with Ministry of Health mapped and onboarded 60 willing private pharmacies to support implementation of the concept. Pharmacy providers were trained on demonstrating use of

quality assured HIVST kits, engaging clients on self-care, customer care and product bundling-a technique where several products are grouped and sold as a single unit. Demand creation for the bundled products was done through self-care materials displayed at pharmacies, digital advertisements on Facebook, Instagram and twitter and thorough 204 support supervision visits were conducted to mentor pharmacists on product display and provide talking points to promoted bundled product sales.

Results: From cumulative sale of 72,515 SRH Products, a total of 3113 Bundles were sold over 6 months. HIVST kits and condom were the most preferred bundle contributing to 40% (1256/3113) of total bundle sales. HIVST kits +Contraceptives, HIVST kits+ Pregnancy test kits and HIVST kits +Lubricants bundles recorded 24% (744/3113), 21% (658/3113) and 15% (455/3113) of the total bundle sales respectively. Importantly, the bundle sales attributed to 26% of all HIVST kits sold in the period July to December 2022.

Conclusion: Retail pharmacies sell high numbers of individual SRH products. Minimal sale of HIVST as part of product bundles points to missed opportunities to upsell. More insight is required to determine how to leverage on SRH product purchase to increase the sales in retail pharmacies.

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Impact of Price Subsidy Strategy in Promoting Uptake of HIV Self-Testing Kits in Abuja, Nigeria- A Pilot Implementation

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Background: HIV self-testing (HIVST) is an HIV testing approach that may appeal to hard-to-reach individuals who require frequent HIV testing. Although HIVST kits have become available in pharmacies outlets, majority of people still find it

hard to purchase HIVST kit due to the high cost. To increase access, tackle pricing policies and promote uptake of HIVST in Abuja, we implemented price subsidy on HIVST kits at the pharmacy outlets.

Material and Methods: Society for Family Health conducted a pilot implementation between April 2022 – January 2023 in Abuja, Nigeria. Sixty pharmacies were recruited using the eligibility criteria which includes: registered with the Pharmacy Council of Nigeria, stocking or willing to stock HIVST and provide data on units sold per month. From September 2022 to January 2023, subsidized blood based HIVST kits were gotten from JHPIEGO and distributed to pharmacies already stocking oral fluid based HIVST kits at a retail price of N500 (1.10USD). The data from baseline and follow-up implementation were analysed quantitatively through the total number HIV test kits sold before and during the subsidy.

Results: Our findings showed that there was increase in the sales of HIVST kits during the subsidy period. Prior to the subsidy (from April to August 2022), pharmacies sold a total of 207 oral fluid HIVST kits and 131 blood based HIVST kits at the rate of 1,500 – 2,500(3.31USD - 5.51USD) while from September 2022 to January 2023 (period of subsidy), the pharmacies sold a total number of 406 Oral fluid HIVST kits and 653 blood based HIVST kits at the rate of N500 (1.10USD).

Conclusion: While HIVST has become an acceptable method of testing due to the confidentiality and privacy it provides, high cost of HIVST kits hinders uptake. The introduction of price subsidy on HIVST made a remarkable impact in improving the demand and uptake of HIVST among.

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The Use of Activations to Increase Demand for and Access to HIV-Self Testing Through the Private Sector in Kampala, Uganda

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Background: Kampala's HIV prevalence among 15-64 years is at 6.0% compared to 5.5% at national level. Uganda has embraced HIV-self testing (HIVST) as a strategy to close the 14% gap for the first 95. With funding from the Children's Investment Fund Foundation (CIFF), Population Services International Uganda is implementing a 2-year project- Strengthening HIV Self Testing in the Private Sector (SHIPS) aimed at growing the private sector market for HIVST with public health impact. Awareness creation for HIVST through activations increase knowledge and uptake of HIVST kits.

Material and Methods: Ministry of Health (MOH) permitted activations. Shared activation calendar with MOH to guide conducting support supervision on quality messaging. Activations were conducted between 8:00am to 8:00pm on days of the week that attract many people around the pharmacy or leveraged on cooperate events with sexually active men aged 35+ and sexually active women aged 18-35. Selected and oriented activation team. Messaging shared included access, how to use, linkage for confirmatory testing and support tools of chatbot and toll-free lines. From May-Nov 2022, we conducted 54 pharmacy and 12 cooperate activations.

Results: A total of 9,065 and 11,994 were reached with HIVST information at pharmacy and community activations respectively. Sold 40 and 50 HIVST kits at Pharmacy and cooperate activations respectively. Target audience prefers to seek for HIVST information clandestinely, they prefer to take a photo of the flier capturing the toll-free lines and chatbot. Thus, pointing to the need for QR codes. Activating in the evening stretching into the night, Friday, and the weekend provide an

opportunity to sale reach target audience with HIVST information and sale HIVST kits.

Conclusion: Activations create awareness for HIVST. Gathered insights facilitate establishment of a strategy that reflects the target audience needs and promotes HIVST as part of their unique experience. Conduct activations targeting cooperates with disposable income. Improve tracking reach and sales by gender.

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Cost of Sauti Ya Vijana (SYV), a Mental Health Intervention for Young People Living With HIV in Tanzania: Results From a Pilot Randomized Controlled Trial

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Background: Sauti ya Vijana (SYV) is a ten-week, group-based mental health and life skills intervention targeting adolescents and young people living with HIV (AYPLHIV) in Tanzania. By promoting self-efficacy and resilience to HIV-related stigma and disclosure, SYV aims to increase adherence to antiretroviral therapy (ART) and virologic suppression. A pilot randomized controlled trial (RCT) of SYV was conducted in Moshi, Tanzania, from April 2016 to April 2020. We report on the cost of SYV delivery in the pilot RCT.

Material and Methods: We used a hybrid costing methodology and an intent-to-treat approach to estimate the cost of SYV delivery in the two-arm pilot RCT. All cost data were obtained from project records and interviews of project key personnel. Our estimates included start-up, service delivery, research-related costs, and program administrative

fees. Human resources were costed in terms of full-time equivalents for salaried personnel. All costs are reported in 2022 USD.

Results: The pilot study included 58 participants in the SYV arm and 47 in the standard-of-care (SOC) arm. The total cost to deliver SYV to the 58 participants in the SYV arm was approximately US\$138,974.90. The total per-participant cost was US\$2,396.12, the per-participant-per-year cost was US\$1,321.23, and the non-research cost per participant was US\$943.13. Research-related costs comprised 59.36% (US\$82,493.59) of the total cost. The largest individual drivers of the total cost were research-related ART concentration in hair tests used to measure adherence (US\$43,360.80), salaries for group leaders (US\$33,840.88), and viral load tests (US\$23,046.30). These items accounted for 31.20%, 24.35%, and 16.58% of the total cost, respectively. Additionally, we costed SYV delivery to both SYV and SOC arms, and it amounted to US\$243,915.17.

Conclusion: This is the first study to report the cost of a mental health intervention for AYPLHIV in Tanzania. Research-related costs accounted for over half the total cost, thus, integration of the intervention into routine care would have a significant reduction in budgetary demand due to a smaller research footprint and broader reach. Our results offer policymakers estimates of the cost of SYV. They may therefore inform the scale-up and integration of SYV into routine care.

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ICHSSA 2 Orphans and Vulnerable Children (OVC) Program Hybrid Testing Model Increases HIV Case Finding Among Children in Lagos State

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Background: Improved HIV case finding among children is crucial to achieving HIV epidemic control. Lagos State has an OVC burden of 14.5% (NSAA 2008) with HIV prevalence of 1.4%. The Integrated Child Health and Social Service Award (ICHSSA) is a 5-year PEPFAR/USAID project in Lagos State with the goal to mitigate the impact of HIV/AIDS on vulnerable children and their households in 11 project Local Government Areas (LGA), implemented by consortium partners (Association for Reproductive and Family Health as the prime, Project HOPE and FHI360). HIV case finding among children has been very low in Lagos State. In October 2021, USAID supported the ICHSSA2 project with HIV test kits to implement interventions to increase HIV case finding among children (0-17 years) in the Lagos State.

Material and Methods: To increase case finding for children (0-17), the ICHSSA 2 project engaged 15 trained community testers across the 11 LGAs to test children in local epidemic areas. Facility case managers also supported HIV testing and screening for children at service delivery points in health facilities with inadequate HIV testers. In all, 136 children tested positive from the test and all of them (100%) were linked to health facilities where they were started on ART during the fiscal year. There was a 45% increase in case finding during the period of intervention (from 31 children in Q1 to 45 in Q4) with an average yield of 1%. This increase in case finding allowed the project to identify more vulnerable children living with HIV and link them to treatment.

Results: Globally, HIV epidemic control initiatives have struggled to meet the UNAIDS targets for children living with HIV. Empowering OVC projects to support HIV case finding using the hybrid model is an effective way to identify HIV cases among children and link them to treatment which is key to ending the HIV epidemic.

Conclusion: The ICHSSA 2 Project continues to use this method to scale up case finding among children. The model can be replicated in other OVC program in settings with unmet needs in case finding among children.

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Cost-Effectiveness of HIV Interventions for Adolescents: A Systematic Review

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Background: Young people living with HIV (YPLWH) represent a large and growing proportion of all people living with HIV worldwide. Tailoring and scaling up HIV interventions for YPLWH is therefore crucial to eliminating the global HIV epidemic. This systematic review seeks to collate evidence regarding the health and economic impact of HIV interventions targeting YPLWH.

Material and Methods: We searched the MEDLINE, Embase, Scopus, and Global Index Medicus databases for peer-reviewed articles published through April 24, 2022. Our inclusion criteria encompassed economic evaluations of HIV interventions that report health and economic outcomes among individuals aged 10 to 24 years. Three investigators screened articles at the title, abstract, and full-text levels. Data were extracted in accordance with the Consolidated Health Economic Evaluation Reporting Standards 2022.

Results: Of the 3,735 unique articles retrieved through our search, 32 met our inclusion criteria. Of these 32 articles, 8(25%) evaluated a mental, behavioral, or educational intervention, 6(19%) voluntary medical male circumcision (VMMC), 5(16%) HIV testing, 4(13%) pre-exposure prophylaxis (PrEP), 3(9%) an HIV vaccine, 2(6%) antiretroviral therapy (ART), 1(3%) condom distribution, and 3(9%) a combination of interventions. Cost-effectiveness outcome measures varied across studies. The incremental cost per quality adjusted life year (QALY) gained or disability adjusted life year (DALY) averted (in comparison to the status quo) ranged from US\$6,180 to US\$57,327 for mental, behavioral, and educational interventions, US\$1,100 to US\$123,400 for HIV testing, US\$33,064 to US\$427,788 for PrEP interventions, US\$5 to US\$43 for a hypothetical HIV vaccine, US\$7,900 for an ART

adherence intervention, and US\$21,298 for a condom distribution intervention. Studies evaluating VMMC only reported the incremental cost per HIV infection averted (US\$859 to US\$6,800). Some studies also showed that PrEP and VMMC were cost saving in comparison to the status quo.

Conclusion: PrEP, VMMC, and a hypothetical HIV vaccine appear to be the most cost-effective approaches to preventing HIV among young people. However, the small number of published studies suggests that additional economic evaluations are needed to substantiate these results and better understand the cost-effectiveness of treatment interventions. In addition, future economic evaluations should adhere to standardized reporting guidelines to allow apt comparisons between interventions.

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Scaling up HIV Screening Through Self-Testing for Increased Testing Coverage Using the Total Quality Leadership and Accountability Approach in the Global Fund Nahi Grant in Nigeria

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Background: FHI360 Total Quality Leadership and Accountability (TQLA) strategy is a data-guided approach that identifies local solutions to local

problems, utilizing adaptive leadership, situation room meetings and performance improvement monitoring. HIV Self-Testing (HIVST) using oral fluids can be used to improve access to HIV testing services (HTS), contributing to reaching populations who do not have access to existing testing modalities. The study reviews the optimization of HIVST and its contribution to case finding in 13 Global Fund (GF) supported states in Nigeria.

Material and Methods: This is a retrospective analysis of HIVST utilization from 2021 to 2022 reported through the District Health Information System (DHIS). The data was analyzed using the interrupted time series. A semi-structured questionnaire was administered to Health workers (HW) to evaluate the acceptability of HIVST compared to other forms of testing.

Results: Pre-TQLA, (January 2021-April 2022), 9,573 HIVST kits were distributed (3% of 298,877 kits distributed between 2021-2022), with 455 (4.8%) positives. Following TQLA, (May -December, 2022), a total of 289,304 (97%) kits were distributed, with 3632 (1.3%) positives. TQLA, through the surge activities boosted existing strategies leading to optimization of distribution platforms in the facility and community, leveraging on hotspots for distribution, case manager accountability and monitoring among others. For HIV case finding using existing modalities, 2,059,818 were reached with HTS (2021-2022). Of these, 15,433 tested positive for HIV, (1% positivity rate). Of the total clients who accessed HTS and screening services (2,358,695), 298,877 (12.7%) utilized HIVST with 1.4% positivity rate. HIVST contributed to 16% of the total number of positive cases recorded post TQLA (compared to 4% pre TQLA), and this was statistically significant ($X^2 = 3.99$; $p = 0.001$). From the interrupted time series, HIVST intervention positively impacted significantly on testing coverage and positivity rate. (Auto correlation=0.517, $R^2=593$). There was high acceptance rate among HW, while fear of disclosure and stigma are barriers to accessing HIVST.

Conclusion: TQLA approach is effective for improving performance, as seen in optimization of HIVST and can increase access to HIV screening and testing services. This should be optimized across the General and Key Population program in the country.

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Effectiveness and Operational Feasibility of Integrating Facility-Based Primary Distribution of HIV Self-Testing Into the National Testing Program: Results From an Implementation Pilot in Uganda

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Background: National HTS programs are considering how to effectively manage declining testing yields as more people living with HIV (PLHIV) are on treatment, disparities in testing coverage among different population groups and challenges with linkage, retention and re-engagement in care. HIV Self Testing (HIVST) is one of the innovative HTS approaches has been recommended for integration into testing programs to generate efficiencies. In Uganda, HIVST has been prioritized for secondary distribution at Antenatal Care and direct distribution in community testing. The Ministry of Health (MOH) identified key evidence gaps and opportunities where HIVST could be leveraged to strengthen case finding.

Material and Methods: An implementation pilot was conducted between September and December 2022. Primary HIVST distribution was implemented at Outpatient department (OPD) and postnatal care (PNC) across 16 health facilities using both oral- and blood-based kits. The basic implementation model included group health talk and demonstration, private space for individuals to test onsite and interpret results, and support with linking to post-test services. Confirmatory testing was offered to clients reporting a positive HIVST and kits were offered to take to home to their partners. Comparative analysis was done for service uptake in conventional HTS versus HIVST, and oral-based versus blood-based HIVST.

Results: A total of 2,411 kits were distributed, representing 52% of the total tests (4,675)

conducted between conventional HTS and HIVST. Observed increase in access to HTS for men from 41% (conventional HTS) to 43% (HIVST). Despite slightly lower positivity rate for HIVST (3%) as compared to conventional HTS (5%), there was higher ART initiation rates for HIVST (90%) compared to conventional HTS (85%). Similar uptake of oral- (51%) and blood-based (52%) HIVST across gender and age. Similarly high (90%) ART initiation rates for both oral- and blood-based HIVST.

Conclusion: Integration of both oral-based and blood-based HIVST implementation at OPD and PNC is feasible. HIVST distribution leads to increase in ART initiation which is high program priority. Additional analysis indicates efficiencies on the Human Resources for Health by freeing up health care worker time to other priority activities. MOH should prioritize scale up of facility based primary HIVST distribution.

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The Quality of Differentiated ART (DART) Services: Assessing Quality Standards for DART in Rwanda

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Background: As countries work to scale up HIV differentiated service delivery (DSD), improving both coverage and quality of DART models for recipients of care established on treatment it is critical to achieving impact. However, there are no global quality standards for DART, with few DSD indicators captured by national M&E systems and the quality of services remains unclear. CQUIN's Quality Management Community of Practice (CoP) addressed this gap through the development of DART quality standards and tools. MoH, networks of PLHIV, implementers, and other stakeholders, co-created a quality standards framework, indicators, assessment for quality monitoring, problem identification, and quality improvement (QI). The quality assessment toolkit includes cross-cutting and model-specific quality standards for 11

core domains, measured with 56 qualitative and quantitative indicators.

Material and Methods: The CQUIN quality CoP and MoH in Rwanda performed baseline quality assessments, followed up by QI trainings and developing action plans. 12 baseline assessments revealed health facility (HF) variation in performance important quality gaps and system weak points. Upon analysis of the baseline data, QI for DSD trainings were conducted for 45 HFs with subsequent supervisions and quality re-assessments for the baseline HFs in October 2022. QI data is entered in the national CQI platform that is managed and monitored monthly by the HIV program.

Results: Reassessment findings from trained and supervised facilities show that 81% (178870) of RoC are in less-intensive models compared to 74% from the national program data. All facilities assessed had an average of 3-4 Facility DART models that RoC can opt-in as compared to 2-3 at baseline assessment. 73% of adolescents had opted in a facility teen club model, a 10% increase compared to pre-assessment findings. There were markedly improved TAT of VL testing result at an average of 1-2 weeks as compared to 2-4weeks in at baseline assessment.

Conclusion: The DART quality toolkit enabled Rwanda to define national DSD program quality standards and conduct routine quality assessments, allowing leaders to make informed decisions about DSD program quality. Rwanda achieved important improvements in DART quality as measured through assessments of performance to quality standards.

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Achievement of Last Mile HIV Epidemic Control: Determining the Number-Needed-To-Test to Identify One Person Living With HIV Among Key Populations in Zambia

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Background: As Zambia nears HIV epidemic control, it is critical to identify the remaining people living with HIV and link them to care. Finding undiagnosed individuals can be difficult and costly, especially among key populations (KPs). To efficiently maximize HIV case identification, we aimed to determine the number of persons needed-to-test (NNT) to identify one person living with HIV among KPs in Zambia.

Material and Methods: The Community Impact to Reach Key and Underserved Individuals for Treatment and Support (CIRKUIITS) project implemented community-based HIV testing services in 12 districts across Eastern, Western, and Southern Provinces from October 2020 to September 2022. CIRKUIITS recruited 135 peer community health workers (CHWs) from KP communities, including female sex workers (FSWs), men who have sex with men (MSM), transgender people (TG), and people who inject drugs (PWID). KP CHWs were trained in HIV testing services and psychosocial counselling, then deployed to provide services in a peer-to-peer approach. KP-CHWs used index testing, social network testing, and mobile HIV testing modalities to reach KP clients. Routinely collected HIV testing aggregated data was stratified by KP sub-type and analyzed.

Results: A total of 11,237 KP clients were screened for HIV risk and offered HIV testing, with 22% (2,434/11,237) testing positive (NNT 4.6:1) (Figure

1). Of KPs tested, 66% (7,426/11,237) were FSWs of whom 1,753 tested positive (24% yield, NNT of 4.2:1); 30% were MSM (3,306/11,237) of whom 588 tested positive (18% yield, NNT of 5.6:1); 2% (220/11,237) were TG of whom 47 tested positive (21% yield, NNT of 4.7:1); and 2.5% (285/11,237) were PWID of whom 46 tested positive (16.1% yield, NNT of 6.2:1).

Conclusion: HIV positivity yield remains high among KPs in Zambia, and NNT is lowest among FSWs. Understanding NNT may innovate HIV programming as it provides insights into individual communities, which can help improve program planning and efficiency.

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Impact of Intensive Adherence Counseling on Viral Load Suppression and Mortality Among People Living With HIV in Kampala, Uganda: A Regression Discontinuity Design

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Background: Intensive adherence counseling (IAC) is recommended by the World Health Organization for people living with HIV (PLHIV) with VL $\geq 1,000$ copies/ml after six or more months of anti-retroviral therapy (ART). We evaluated the effect of IAC on VL suppression and all-cause mortality among PLHIV on first-line ART with VL $\geq 1,000$ copies/ml after six or more months of ART in the Kampala metropolitan area, Uganda.

Material and Methods: We utilized a regression discontinuity design, a quasi-experimental method for causal inference and effect estimation using

observational data when interventions depend on a cut-off. PLHIV just above the VL $\geq 1,000$ copies/ml cut-off who received ≥ 3 IAC sessions formed the intervention group while those just below the cut-off who received routine psychosocial support constituted the control group. The primary outcome was VL suppression defined as VL $< 1,000$ copies/ml after ≥ 3 IAC sessions (approximately at 9-12 months following ART initiation) in the intervention group, and VL $< 1,000$ copies/ml after psychosocial support in the control group (approximately at ≥ 18 months following ART initiation). The secondary outcome was all-cause mortality. We used logistic regression for causal-effect analysis, reported as odds ratio (OR) with a 95% confidence interval (CI). We performed sensitivity analyses to assess the robustness of findings to varying bandwidths at the VL $\geq 1,000$ copies/ml cut-off.

Results: Of 3,735 records for PLHIV started on ART between Nov 2020 and Nov 2021 followed through Nov 2022, 3,199 were included (3,085 control, 114 intervention). Within an optimal bandwidth, there were 2,36 participants (222 control, 67 intervention), all balanced on baseline characteristics. VL suppression was higher in the control than in the intervention group (98.6% versus 85.7%, $p=0.021$) and all-cause mortality was similar (0.5% versus 0%, $p=1.000$). In multivariable analysis, the odds of VL suppression was lower in the intervention than in the control group (OR 0.09; 95% CI, 0.01–0.66). This finding was robust to varying bandwidths at the VL $\geq 1,000$ copies/ml cut-off.

Conclusion: IAC was not effective in suppressing VL among PLHIV on first-line ART in Kampala, Uganda. Findings suggest a need to investigate the fidelity of IAC implementation and the reasons for VL persistence beyond the suppression threshold.

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Bundled Laboratory Tests at the Time of Hospital Admission to Close Gaps in Delivery of Advanced HIV Care in Zambia

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Background: HIV-related mortality remains unacceptably high in sub-Saharan Africa and is most common in those with advanced HIV disease (AHD). The World Health Organization guidelines feature a stepwise approach beginning with CD4 count assessment, to identify and intervene on AHD with evidence-based interventions. Because of roadblocks identified in implementing this approach, we pilot tested a 'bundled' approach, whereby all advanced disease diagnostic tests were performed at once, rather than stepwise, at a referral hospital in Zambia.

Material and Methods: Between May and December 2022, at a University Teaching Hospital in Lusaka, we provided a laboratory bundle to 136 newly admitted patients living with HIV, regardless of reason for admission, signs, or symptoms of AHD. The bundle included CD4 count, sputum (or stool) TB Xpert, TB LAM, and serum cryptococcal antigen. To evaluate the intervention, we enrolled a sample of 70 bundle-receiving patients and reviewed their hospital file at discharge/death for the presence of laboratory results, diagnosis of tuberculosis (with LAM) and Cryptococcus (with CrAg), and prescription of co-trimoxazole and antiretroviral therapy (ART). These indicators were compared using Chi2 test, with a sample of 68 patients assessed just prior to the introduction of the intervention.

Results: Blood samples (95.7%) were more successfully obtained than urine (78.6%) or sputum/stool (69.2%). When samples were obtained, the percentage with results was 80.0–88.0% for all lab tests with median turnaround times (from collection to resulting) of 1-2 days. In-patients enrolled during the intervention had a CD4 < 200 (43.2% of sample), results for CrAg (12.0% to 96.0%), and LAM (52.0% to 96.0%; both $P < 0.05$) increased compared to beforehand. However, the

proportions treated for TB/Cryptococcus, discharged on CTX if CD4 was <350, and prescribed ART at discharge did not significantly change. During focus group discussions clinicians reported strong satisfaction with the bundling approach as provided them all the results at once within the first two days of admission.

Conclusion: Bundling the AHD lab package increased coverage of LAM and CrAg among patients with CD4 200 and was feasible to implement. Despite having no immediate impact on clinical care, bundling labs may reduce time to diagnosis and treatment of opportunistic infections.

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Deepening Private Sector Engagement in Promoting Access to HIV Self-Testing Services: Findings from a Mystery Shoppers Survey among Community Pharmacists in Federal Capital Territory (FCT), Nigeria

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Background: The private sector is pivotal to improving access to HIVST for various categories of the population. In recent times capacity of the private sector providers has been built to provide quality HIVST services to the population. However, there still exist some gaps in the quality of services these providers offer to clients accessing HIVST in the private sector including stigma. This study provides insight on the quality of HIVST services rendered by private sector pharmacies in FCT for the purpose of destigmatizing and improving access to high quality HIVST services.

Material and Methods: Pharmacies that reported the sales of HIVST kit between April and September 2022 were randomly sampled from two Area

councils of the FCT. They were assessed by four (4) mystery shoppers using scripted scenarios to develop structured questionnaire to elicit insights such as client satisfaction, providers knowledge and provider's support. Data were entered electronically using Survey CTO and descriptive and inferential analysis were carried out using SPSS version 23.0.

Results: In evaluating shoppers' satisfaction with quality of services provided by service providers within the 18 assessed pharmacies, shoppers' perception on the attitude of service providers and the product information provided by the service provider were assessed. The results revealed that majority (56%) of the shoppers reported satisfied. While 44% of the shoppers were dissatisfied with the level of service received from providers. This indicated that some shoppers were not satisfied with the attitude of the service provider, which looks at professional ethics especially in relation to privacy and discreetness. Only 37% of providers were found to have a high level of understanding on the use of HIVST kits, whereas 50% and 13% had neither any expertise nor a low level of knowledge.

Conclusion: The quality of service provided to clients is relative to the attitude of the service provider. Client satisfaction can only be attained if service provision is carried out with utmost professionalism. To better improve quality of HIVST services provided by private sector service providers, there is need for further interventions tailored towards strengthening the capacity of service providers and sensitizing them on stigma and discrimination.

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Purchase Behaviour of HIV Self-Testing Clients in the Private Sector: Lessons From Lagos, Nigeria

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Background: HIV self-testing (HIVST) has expanded users' choices and offers a convenient option for bridging the HIV testing gap and achieving the UNAIDS 95-95-95 goal by 2030. However, notable barriers to HIVST uptake such as user preference, cost, and channels of purchase influence clients' behaviour in the uptake of HIVST kits in the private sector. The pilot implementation aimed at influencing clients' behaviour in the uptake of HIVST services via increased awareness and demand for HIVST kits.

Material and Methods: A pilot intervention was implemented between June – December 2022 and 64 pharmacies were selected among 88 mapped pharmacies within 10 clustered communities in Ikorodu, Ifako-Ijaiye, and Etiosa in Lagos, Nigeria. Demand creation intervention via monthly community mobilization and periodic community activation targeting males 18 years and above and females aged 18 to 34 were conducted to promote HIVST kits and sales channels for HIVST kits. A mix-methods approach was employed to assess clients' HIVST purchase behavior using pharmacy sales records. Data were analyzed using STATA 16.

Results: Oral-fluid-based test kits were sold for ₦1500-₦3000 (US\$3.2- US\$6.5) compared to blood-based test kits; ₦2500-₦4000 (US\$5.4- US\$8.7). However, a total of 3289 (88.2%) blood-based kits were purchased due to their availability and perceived efficacy over the oral-based test kits; 439(11.8%). Online pharmacies sold more blood-based kits (98.1%, n= 2960) than oral-based kits (1.86%, n=56) while physical pharmacies sold more oral-based kits (53.8%, n=383) than blood-based kits (46.2%, n=329).

Conclusion: Online sales outlets offer a more convenient approach to delivering HIVST services and user's prefer blood-based kits to oral-based kits. This market evidence should guide more intervention in the private sector.

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Using Community Activation to Drive Demand for and Uptake of HIV Self-Testing Services in Lagos, Nigeria: Awareness and Pricing

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Background: HIV self-testing (HIVST) is an innovation with promising potential to complement existing HIV testing approaches. While HIVST kits are available in the community pharmacies/PPMVS, there are challenges in developing consumer awareness of and uptake of HIVST kits in the community, therefore Society for Family Health utilized community activations to improve the uptake and use of HIVST kits in Ifako-Ijaiye, Ikeja, Kosofe, and Ikorodu LGAs, Lagos.

Material and Methods: Community activations were conducted for five (5) days to drive individuals into 23 pharmacies and PPMVs in October 2022. Activations were conducted by 15 product promoters and targeted males and females of 18 years and above with aggressive one-on-one community engagements on the need for periodic self-testing, the available HIVST kit brands, proper use, and self-referral through a WhatsApp chatbot. Target segments were subsequently linked to providers to purchase HIVST kits. Checklist and sales summary reports were used to collect data on individuals reached and HIVST kits sold.

Results: 10,340 individuals were reached through one-on-one engagements and 6152 received fliers with different messages on HIV self-testing. 209 HIVST kits were purchased from the providers; 82% were blood-based kits while 27 individuals opted for assisted HIVST. Of the 209 HIVST kits

purchased, 10 were sold at five (5) providers' pre-determined prices of ₦1500-₦4000 (US\$3.2-US\$8.7), however, uptake was low, but upon the introduction of subsidy, (kits sold at ₦500 which is US\$1.1), the number of uptakes increased to 199 across all 18 Pharmacies.

Conclusion: Community activation has the capacity to reach a large audience with HIVST awareness while a reduction in the price of HIVST kits is a driver of HIVST kit uptake. Both offer the potential to boost the uptake of HIVST kits and should inform further interventions.

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Time to Viral Load Suppression Following Anti-retroviral Therapy (ART) Among Adult PLHIV in Nigeria, a Two Case Finding Point (CFP) Analysis

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Background: Achieving and maintaining viral suppression is the ultimate goal of ART and the basis for monitoring the effectiveness of the therapy. The viral load should be reduced by as much and for as short as possible. Identifying factors that predict time to viral load suppression is vital to optimizing therapeutic success. This study sought to determine the time for virological suppression based on two CFP analysis.

Material and Methods: A retrospective cohort study of 81055 APLHIV aged ≥ 18 years, being treated with antiretroviral medications from 2018-2022 across multiple ECEWS SPEED Project CDC funded supported sites. Treatment data were abstracted for the National Medical Record System (NMRS). Descriptive statistics characterized participants as appropriate. Survival analysis estimated the time to viral suppression and its predictors following ART initiation using both Kaplan-Meier estimator and cox-regression

methods. An independent t-test was conducted for a pairwise comparison between the two groups and log rank test conducted to assess difference in survival distribution. A p<0.05 was considered statistically significant using Statistical Package for Social Sciences 23.

Results: The overall median (IQR) age of APLHIV was 37(15) years with 52093(64.3%) of APLHIV being males. The community CFP was 44,151(54.5%). The median viral load of APLHIV following ART was 20.12(30) cells/ml. Median survival times (95% CIs) to viral suppression following ART for community CFP was 561(555-566) days and 816(806-826) days for facility CFP. Survival plot and bivariate analysis showed the cumulative time to viral suppression following ART were significantly longer in facility CFP (t=-3.687; X²=520.249, p-value <0.001).

Conclusion: Decentralization of CFP is essential to timely case detection, the commencement of treatment, and the achievement of viral suppression.

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Interventions to Reduce Rate of Interruption in Treatment for PLHIV Enrolled Into Art Program: Abia Surge Experience

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Background: Nigeria has the second highest burden of person living with HIV(PLHIV) globally with a prevalence of 1.4%. An estimated 1.9 million PLHIV lives in Nigeria with over 1.4 million on life saving antiretroviral therapy. The HIV prevalence of HIV in Abia State is 2.1% with estimated PLHIV at 54,000 and treatment saturation of 22% as at October 2021. Patient retention in care remains a major challenge to successful antiretroviral therapy (ART) administration globally as well as in Nigeria. This paper aims to share the strategies used to mitigate

treatment interruption across the 38 PEPFAR supported facilities in Abia state.

Material and Methods: A review of program data on Electronical Medical Record (EMR)/ National Data Repository (NDR) in December 2021 showed that nearly 50% of patients experienced treatment interruption (IIT rate) within the 3 months. The project was implemented between January 2022 and September 2022. Improvement plans instituted were strengthening human resource for health, tasks shifting and tasks sharing, improved documentation systems, proactive identification and tracking of medication appointments, differentiated drug delivery mechanism within the communities and facilities to meet the need of the patients. Descriptive statistics, chi square and logistic regression were used for data analysis at 5% level of significance using SPSS version 23.

Results: Interruption in treatment (IIT) rate was higher among Pediatric (52%) and female (61%) as compared to adults (48%) and males (39%) respectively. Age (AOR = 2.51; 95% CI = 1.93, 3.22) and sex (AOR = 2.06; 3.18; 3.44) were found to be significantly associated with IIT among study participants. Nearly 800,000 refills were completed between January 2022 to September 2022 with a sustained decline in the quarterly IIT rate from 49% at the beginning of the project to 3.5% by June 2022 and 1.6% by September 2022.

Conclusion: Our findings showed that with strengthened human resource and appropriate use of EMR and technology, retention can be rapidly and sustainably improved in an ART program. Further study is required to design and implement age and sex specific strategies to address IIT from commencement of a treatment program.

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Utilization of Mystery Shopper Surveys in Establishing the Effectiveness of Pharmacy Orientation in Promoting Provider Capacity to Offer User Information on HIVST Kits Use in Kenya

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Background: Mystery Shopper surveys are a participant observation method utilized to measure the quality of service delivery. The customer experience is analyzed to evaluate product display, staff expertise and courtesy or visual effect.

Material and Methods: PS Kenya, in partnership with MOH, mapped out 43 pharmacies in Nairobi and Kisumu counties), recruited 6 research assistants, conducted a 2-day training and assigned researchers to pharmacies. Shoppers were assigned to participating pharmacies and guided on scenarios to apply each morning. To maximize their discretion, they were assigned to different locations. Debriefs were conducted to evaluate the days' activities. The purpose of the survey was to gather client purchase experience and information on product availability, storage location, price of HIVST kits in the private sector and information provided by staff on use and post-test instructions.

Results: 91% of the pharmacies had HIVST kits available. 32% of the pharmacies offered options of different types of kits and 3.8% recommended one to shoppers disregarding client preference. 7 pharmacists provided explanations on use without being prompted, 5 provided explanations after being prompted by the users while 2 did not provide any user information. 4 pharmacies recommended particular brands of HIVST kits to the shoppers. 8 pharmacy attendants provided recommendations on the best brands to use and 7 gave the shoppers their preferred kit. Overall, 50% of user information was initiated by clients and 50% by providers. 56% of clients were very satisfied with the services. Half of the pharmacies did not display kits in a visibly: 30% placed the kits on the shelves and only 5% were placed on top of the counter. 70% of the shoppers were likely to recommend the services to other people.

Conclusion: Mystery shopper survey are insightful in identifying the effectiveness of training sessions for private providers who are not under direct supervision. They also highlight areas that need improvement.

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Experience in Onboarding Pharmacies as a Channel for HIVST in Uganda

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Background: Uganda started HIVST journey in 2018 under public sector focusing on facility and community-based distribution channels. Cognizant of the role of private sector in public health, MOH extended HIVST to private sector channels including physical, online and e-commerce platforms. With funding from CIFF, Population Services International -Uganda piloted sale of HIVST kits in pharmacies targeting 35+ men and women 18-34 years in Kampala for 9 months (April- Dec 2023).

Material and Methods: SHIPS project mapped and on boarded 35 retail physical and one online pharmacy in Kampala as a channel (access points) for HIVST. Jointly with MOH and distributors, trained 70 pharmacy providers, linked them to in country HIVST Kits distributors and conducted demand and awareness creation through physical and digital approaches.

Results: Mapping and onboarding pharmacies based on a comprehensive selection criterion that speaks to the national guidelines and project interest helps to identify appropriate sites to support. Working with chain pharmacies is more effective compared to standalone, due to central procurement systems, clear management structures (for product security and reporting). Online pharmacy service uptake in Uganda is still low and mostly reaching men; 30HIVTS kits were sold through online channel compared to 4116 in physical pharmacies in 6 months. Segmentation of pharmacies by location, audience, primetime, category(standalone/chain), is key for tailored technical support and implementation. 85% (30/35) pharmacies preferred evening hours over the weekend as prime time. Despite pharmacy reporting challenges in private sector, use of specific and user-friendly data collection- reporting

tools like WhatsApp is preferred for sharing reports (>95% reporting rates from 36 pharmacies). Cascaded provider orientation rarely happens within trained pharmacies, thus the need for continuous targeted Support Supervision Visits for capacity building and quality checks at least every 6 months. Involving key stakeholders (MOH, regulators, distributors, and authorities) in planning and implementation and signing MOUs creates an enabling environment for project implementation. Working closely with pharmacies on preferred IEC materials saves resources and eliminates duplication.

Conclusion: Working with private pharmacies need a clear value proposition and defined roles to achieve the intended objectives.

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Scale-up of Routine Viral Load Testing Among Key Populations in Eswatini

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Background: Eswatini is achieving UNAIDS' 95–95–95 targets and reporting 97% viral load suppression (VLS) among all clients on antiretroviral therapy (ART), though expanding access to viral load (VL) testing is particularly important for key populations (KPs), whose data are not available (UNAIDS 2021). This analysis presents data and solutions to reach the 95% benchmark for viral load coverage (VLC) and VLS among KPs receiving ART services at two KP-led community centers (KP-CC), through the PEPFAR/USAID-funded Meeting Targets and Maintaining Epidemic Control (EpiC) project implemented by FHI 360 in Eswatini.

Material and Methods: Routinely collected data for KPs from October 2020 through September 2022 were analyzed. We assessed the VLC, calculated as KPs with a documented viral load test result (VLTR) among those on ART and eligible to test as per national guidelines, and VLS, calculated as KPs with VL below 1,000 copies among those with documented VLTR. Among KPs, only half had a

documented VLTR between October and December 2020; 81% reached VLS. A case management guide was then developed for ART and VL monitoring. A team was tasked with addressing the gaps along the pre-analytic, analytic, and post-analytic stages of VL monitoring to scale up VLC and improve VLS. ART counseling frequency and depth was based on KP risk segmentation and adherence barriers. Eligible KPs were line-listed and contacted to collect VL samples at the KP-CC or at community through full-blood or dried-blood spot (DBS), depending on supply availability. Pending VLTR were tracked through a laboratory focal person; non-virally suppressed KPs were offered enhanced ART-adherence counseling.

Results: Between October and December 2020 and July and September 2022, increases were observed among KP in VLC from 51% to 71% and VLS from 81% to 99% (Table 1). VLC was negatively affected by long turnaround time because of laboratory staff and commodities shortages and equipment breakdown.

Conclusion: Interventions were successful increasing VLC and VLS among KPs. Laboratory bottlenecks prevented VLC from reaching the benchmark; hence, more investments are needed to address gaps at the analytic level.

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Analysis on the Costing the Adoption of Kenya's HIV Test and Treat Guidelines, and Its Implication on the Economic Growth

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Background: The analysis guides MoH policy on the use of ARVs outlining eligibility for ARV use, regimen selection and monitoring for effectiveness within WHO recommendations. Guidelines are developed and reviewed in line with local and international evidence and take into consideration public health use of ARVs by the WHO. On this basis, Kenya builds a comprehensive HIV resource

needs that corresponds to meet the 90-90-90 targets towards ending AIDS by 2030. The cost analysis estimates provision of ARVs as treating/prevention therapy. The paper investigates implication on ARV use on economic growth within the national guidelines. The process involves costing HIV test and treat guidelines and compares with the current costs, then analyzing costs implications on the Economy.

Material and Methods: Provider perspective is used adopting program areas/activities costed. Micro-costing approach integrating activity-based costing is used. Exception on this approach was non-medical costing which proportionate allocations based on existing literature on program cost.

Results: The 2015 HIV data estimates total cost for implementing the new guidelines at US\$ 438 million. Key cost drivers were ARVs cost at US\$ 159 million, non-biomedical at US\$ 154 million and laboratory cost at US\$ 43 million. Total cost increased marginally in the period 2016/2017 to 2019/2020 explained by ARVs trends caused by ARVs regimen change over the period. The estimates of the second scenario (referred to as Standard Intervention) assumed the guidelines were implemented 100%. Estimated total cost for implementing Standard guidelines was US\$ 526 million in the period 2019/2020. Key cost drivers were ARVs cost at US\$ 185 million, non-biomedical at US\$ 184 million, laboratory cost at US\$ 50 million. Total cost increased linearly throughout the period, given operational HIV programmes, reduced mortality rates, high suppression levels and drop on incidence rates towards 2030 targets.

Conclusion: With interventions working, escalation of cost is expected in future due to inclusion of more PLHIV on care enhanced by reduction in HIV related mortalities. Inclusion of PrEP and PEP as HIV prevention measures significantly impact HIV incidence rate (lower) that is consistent with growth in HIV prevalence rate. These high policy interventions towards acceleration of prevention measures thus reducing ARVs costs.

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Using Price Subsidy as a Catalytic Approach to Improve Sales of HIV Self-Testing (HIVST) In the Private Sector: A Case Study of Pilot Activities in Lagos and Fct, Nigeria

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Background: The introduction of HIV self-testing (HIVST) into the HIV testing method mix is playing a critical role in the drive towards achieving UNAIDS 95-95-95. This innovative strategy provides improved access and confidentiality for users. Using the private sector for distribution and availability of HIVST kits has been pivotal to expanding users' choices and offering a more convenient option for bridging the testing gap however, the uptake of kits in the private sector is limited by the high purchase cost. The SHIPS project is currently implementing several activities in Lagos and FCT Nigeria aimed at improving uptake of HIVST kits in Community Pharmacies.

Material and Methods: An on-going fifteen months (15) cross-sectional pilot implementation which commenced in April 2022 is working with One Hundred and thirty (130) selected physical pharmacies in Lagos and FCT to improve access to HIVST in the private sector. Sales data were collected for 9-months pre and post the availability of subsidy. The sales data were assessed across pharmacies and the data were analyzed and presented using DHIS 2 version 2.36.

Results: Results showing the sales trend for the period of 9 months indicates that before the availability of subsidy, the sales trend from April – July only increased from 12% to 85%. Following the introduction of subsidy between August – October 2022, the sales trend gradually increased from 171% to 562% within the space of three (3) months. Furthermore, two (2) months post subsidy, the sales trend decreased by 35% and 41% respectively.

Conclusion: Price subsidy approach can catalyze the market for HIVST thereby improving sales among private sector providers. This will ensure increased case finding in other to achieve the UNAIDS 95:95:95 target for HIV. To ensure sustainability would require developing the market for HIVST.

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The Role of Private Pharmacies in Enhancing Access to HIVST and SRH Products: Accelerating Self-Care in Kenya

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Background: Selfcare is the primary modality of care globally. Studies report that 80-95% of health problems are managed through self-care. In low - income and middle - income countries especially Africa, private pharmacies provide the first point of care for health services in view of poorly functioning health systems characterized by long queues, poor quality of service and healthcare workers who are considered unapproachable. This paper explores how private pharmacies can advance the selfcare agenda in Kenya given their role in engaging clients, influencing self-care behavior and purchase decision while improving access to selfcare products.

Material and Methods: 120 registered pharmacies from urban and peri-urban areas of Nairobi and Kiambu counties were recruited. Pharmacy teams were trained on HIVST, engaging clients on self-care, customer care skills, product bundling of HIVST kits with other SRH products and referring HIVST users to the WhatsApp chatbot for access to other services including linkage to treatment and prevention. 204 support supervision visits were conducted to support pharmacies in meeting key project deliverables. Besides, a self-care campaign that discusses HIVST as larger part of SRH was developed to generate demand for HIVST kits, HIV prevention and SRH products and services.

Results: A total of 72,515 SRH products were sold in 62 pharmacies and 15,783 WHO prequalified HIVST kits in 120 pharmacies. HIVST kits gave rise to 17.87% (15783/88298) while the SRH products contributed to 82.13% (71120/88298) of the total self-care products sold in phase one of the pilot.

Conclusion: Private pharmacies can play a vital role in supporting self-care. Through appropriate training and information on self-care products, they can lead communities in self-care. Importantly, consumers view pharmacists as trusted professionals for providing information on HIVST and other SRH products. For Effective self-care, Pharmacists should be involved with health promotion to increase awareness of HIVST kits and discussion of other SRH products to prevent other health issues among consumers.

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An Innovative Approach to Improving Viral Load Demand Creation and Testing Coverage in Health Facilities in the Western Region of Ghana

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Background: In 2020, UNAIDS established the 95-95-95 goal of 95% of all people living with HIV to know their HIV status, 95% of all people diagnosed with HIV receive sustained antiretroviral treatment (ART), and 95% of all people receiving ART will achieve viral suppression. Attainment of the third 95% remains a huge challenge to the National HIV response of low and middle-income countries (LAMICS). Most of the research and programmatic attention has focused on above-site and individual-level barriers to access. This approach has not sufficiently recognized facility-based challenges. According to a 2019 study by the USAID Ghana Strengthening the Care Continuum Project, implemented by JSI Research & Training Institute, Inc., over 50% of low viral load coverage was caused by poor facility-based viral load management practices, provider oversight, and multi-month

dispensing, without alignment to viral load due dates. Here we illuminate a strategic approach to addressing this critical programmatic gap in Ghana's Western Region.

Material and Methods: The Project designed a "person-centered viral load management plan" (PVLm) as an addendum to ART client' folders. This was a major component of the Project's Quality Improvement (QI) activities. From October 2021 to October 2022, a team of facility-based service providers and QI project officers conducted quarterly assessments facility-based viral load coverage and viral load management culture, in 21 ART sites in the Western region.

Results: The intervention was successful and resulted in a significant improvement of viral load coverage and suppression. Data from Ghana's national electronic e-Tracker HIV service database showed that viral load testing coverage improved from 54% in December 2016 to 90% for all eligible clients by December 2022. There was a corresponding increase in viral suppression from 64% in December 2020 to 95% in December 2022.

Conclusion: Viral load is not only a key determinant of a successful HIV treatment program, but also is key to achieving the 3rd 95%. Closely monitoring facility- and provider-based challenges and developing person-centered viral load management plans are effective strategies to achieve higher viral load coverage and suppression. The results of this intervention can inform national level policy and management for scaled implementation.

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New Viral Load Analyzer Tool Moves Viral Load Coverage to 96% in Nigeria

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Background: HIV treatment aims at supporting recipients of care (RoCs) to achieve undetectable viral load (VL) while on antiretroviral treatment. HIV Service Providers (HSPs) in Cross River State, Nigeria, are challenged with calculating an accurate target date for follow-up VL sample collection. The reaching Impact, Saturation, and Epidemic Control (RISE) project, funded by USAID developed an analytic tool to provide accurate VL test dates for eligible RoCs in May 2022. RISE Viral Load Analyzer Tool (RVLAT) is a PowerBI-based offline tool programmed to calculate next VL sample collection date and to generate line-list of eligible RoCs for VL testing within a specified period. The tool uses socio-demographic data, Anti-Retroviral Therapy (ART) start date, VL sample collection, and result return dates to generate the target date for follow-up VL sample collection. This study examines the effect of the tool on VL coverage in Cross River State post-introduction.

Material and Methods: The RVLAT was used to extract a line-list of RoCs eligible for VL sample collection from facility-based Electronic Medical Records (EMR). The line-lists were shared with the HSP to follow up with the RoCs for VL sample collection. The data on VL sample collection and result returned date updated in the EMR was exported into Microsoft Excel software for analysis. The VL coverage (valid VL results from an eligible pool) was compared for two-quarters pre-RVLAT rollout (October 2021 to March 2022) and two-quarters post-rollout (April 2022 to September 2022).

Results: 19,339 (89%) RoCs from an eligible pool of 21,861 had valid VL results pre-RVLAT (October 2021 to March 2022); while 22,171 (95%) from an

eligible pool of 23,332 had valid VL results post-RVLAT. VL coverage in the first and second quarters pre-RVLAT were 89% and 88% respectively and 94% and 96% post-RVLAT respectively.

Conclusion: The RVLAT proved to be an effective tool in assisting Case Managers to track RoCs for VL sample collection resulting to improvement in VL coverage across the quarters reviewed. The RVLAT will play an important part in ensuring access to timely VL testing for RoCs.

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Can Mobile Health Prevent HIV Risk Behaviors Among Adolescent Girls and Boys in South Africa?

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Background: Increasing rates of mobile phone ownership and use present potential new opportunities and risks for adolescents' sexual and reproductive health in resource-poor settings. We investigated associations of sexual health risks with ownership and use of mobile phones among a cohort of HIV-positive and negative adolescents in South Africa.

Material and Methods: 1563 adolescents (69% living with HIV) were interviewed in two waves between 2014 and 2018. We assessed mobile phone ownership and use to search for health content (e.g., information related to sexual health or HIV) and for social media (e.g., SMS, Facebook, or WhatsApp). Self-reported sexual health risks were sex after substance use, unprotected sex, multiple sexual partnerships, and inequitable sexual partnerships (sex in exchange for material support or sexual partners at least five years older than participant) in the past 12 months. We examined associations between mobile phone ownership/use and sexual health risks using covariates-adjusted multivariable mixed-effects logistic regression models and marginal effects

models to test for moderation effects by sex and HIV-status.

Results: Mobile phone ownership alone was not associated with any sexual risk-taking behaviours. Social media use (vs. no mobile phone ownership) was associated with increased probability of unprotected sex (AMEs 4.7, 95% CI 1.5 to 7.8, $p=0.003$). However, use of mobile phones to access health content (vs. no ownership) was associated with decreased probability of sex after substance use (adjusted average marginal effects [AMEs] -5.4 percentage point, 95% CI -7.4 to -3.3 , $p<0.001$) and unprotected sex (AMEs -7.5 , 95% CI -10.7 to -4.4 , $p<0.001$). Moderation analyses showed that boys owning mobile phones had more risk than girls, and that social media use alone was associated with higher sexual risks for adolescents living with HIV.

Conclusion: In this study, social media use was associated with increased sexual health risks, but accessing sexual and reproductive health-focused mobile health information may bring important opportunities for improved sexual health. However, almost all adolescents accessed social media, whilst less than 25% of adolescents accessed health information on their phones. This suggests an urgent need for strategies to harness mobile phone use for protection rather than risk.

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Improvement of Tuberculosis Preventive Therapy Completion Following Electronic Medical Record Analysis and Software Adaptation in Malawi

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Background: Although tuberculosis preventive therapy (TPT) is an evidence-based strategy to prevent tuberculosis among persons with HIV, insufficient coverage and low completion in Malawi have hampered its effectiveness. Malawi initially only implemented isoniazid preventive therapy (IPT). To improve TPT completion, three months of weekly isoniazid and rifapentine (3HP) was added as a preferred TPT option in 2021. Partners in Hope (PIH) is a Malawian, non-governmental, medical organization and USAID-PEPFAR partner that supports HIV and tuberculosis services. After facilitating the introduction of 3HP, we noted that completion of TPT (IPT and 3HP) remained unexpectedly low.

Material and Methods: A team of clinical and monitoring-evaluation staff conducted a root-cause analysis by extracting data of 894 TPT non-completers from the national electronic medical record (EMR) system at 22 health facilities selected based on having very high TPT non-completion. We triangulated these data with information from paper-based individual ART client charts. Causes of TPT non-completion were established.

Results: 276 (30.9%) non-completions were due to misclassification in the EMR system, often related to incorrect capture of 3HP completion; 208 (23.3%) defaulted from ART services; 181 (20.2%) were transferred to other health facilities; 158 (17.7%) were a result of provider mistakes; 47 (5.3%) were due to EMR system data entry errors, 14 (1.6%) died and 10 (1.0%) were due to other outcomes. As the main intervention, we collaborated closely with national EMR developers in adapting the software to improve documentation of TPT completion. One year after this EMR intervention, TPT completion had increased from 51% to 80% at 123 PIH-supported health facilities.

Conclusion: EMR data capture must be carefully evaluated when new programs are rolled out (in this case 3HP as a new TPT regimen), so that data can be accurately captured and over- or underrepresentation of outcomes can be avoided. Collaboration between clinical, monitoring-evaluation and information technology staff was critical to finding the sources of underreporting of TPT completion and correcting them. Further interventions that include full scale up of 3HP, prevention of ART attrition and mentoring of ART

providers in correct prescription of TPT will improve TPT completion to desired target levels in Malawi.

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ART Treatment Failure Prediction in Malawi: A Soft Computing Modelling Approach

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As part of routine care and treatment activities for people living with HIV and are on antiretroviral therapy (ART) treatment, health care providers conduct reviews on patients for possible ART treatment failure. However, due to limited number of available experts and increasing number of treatment failure cases, it is not feasible to manually analyze patients for treatment failure. Most health facilities in Malawi use EMR systems to monitor patients' performance. This research aimed at finding an efficient and effective model to predict ART treatment failure by utilizing the data available in the EMR systems.

An Artificial neural network binary classifier model was built to predict ART treatment failure for first- and second-line regimens. We used ethnographic methods to respond to qualitative objectives which were to establish ART treatment predictors and current algorithms that are followed in treatment failure determination. Participation and observations were employed and a total of 16 experts were interviewed. The methodology used, followed the CRISP-DM framework by first understanding the HIV treatment failure domain, the causes and factors associated with treatment failure, and how treatment failure is currently determined. Through qualitative analysis, only correlated variables to the outcomes were considered in building the ANN prediction model. The highest correlated variable was adherence to treatment, seconded by condition of peripheral neuropathy and anemia. A random sample dataset of 10,000 patients was generated from the EMR system database. Out of these only 1,722 records had sufficient data and were used in the ANN modelling. SMOTE technique was used to balance

the distribution of data on the target variable. A 13 layer backpropagation ANN model was built using Python3, Sci-Kit Learn library, Keras and TensorFlow backend.

The ANN model evaluation scored accuracy of 99.71% and loss of 0.04155 which shows that ANN model can be used to predict ART treatment failure outcome. The presented results have been demonstrated in this study that it can be a viable technique to model treatment failure prediction using soft computing. The research recommends the model for treatment failure review process.

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Optimizing Efficiency in Large Scale Surveillance Survey Through the Use of Electronic Data Collection Applications – Lessons From the 2020 Integrated Biological and Behavioral Survey in Nigeria

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Background: Data management is a vital part of any research intervention. Prior to the 2020 IBBSS, Nigeria has had three previous rounds of the study (i.e. 2007, 2010 and 2014), all of which were implemented using paper-based instruments (questionnaire) for field data collection. The 2020 IBBSS was the first in Nigeria to be fully automated using technology, and this contributed in bridging the gaps of the previous paper-based rounds.

Material and Methods: Previously used paper based questionnaires, comprising of biological and behavioral variables, were reviewed by the technical team, and the finalized questionnaires were configured into the virtual automated data collection app. The application has various quality control logics like the "Relevant", "Constraint", and "Skip" commands, whose settings were enabled to function in both online and offline settings. The

configured instruments were transitioned to Android tablets and field workers were trained on the use of tablets for field level data collection. Collected and reviewed data were submitted real-time to the back-end server. Weekly update meetings were held to validate the data from field teams.

Results: Electronic data capture was used to digitize documents, which was instantly retrievable and readily available for running data summaries and descriptives. The logic commands helped in reducing data errors, for example the “Relevant” command limited the range of possible responses, and allowed only relevant options to be available to a respondent. Electronic data management allowed integration of modular workflows with complex branching logic, non-linear navigation, randomized elements, multi-media and GIS functions. Geo-points coordinate improved the tracking of locations where interviews were conducted. Delayed data turnaround time and late error detections associated in the paper-based system, which made error corrections difficult were avoided. Integration of the electronic application with analytical software programmes (e.g. Excel and STATA) allowed the inter-conversion of dataset into different analytical formats. Data audits functions were enabled in automated formats. A rapid review of forms completed by different enumerators in real-time identified data outliers and abnormalities for quick resolution

Conclusion: Quality evidence generation through data is critical to planning and policy formulation. With numerous advantages, electronic data management has the potential to scale-up surveillance and strengthen operational efficiency without compromising quality, factors will improve researches in resource-poor settings. Electronic data management in future IBSS rounds will strengthen and improve national HIV response.

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The Impact of Mobile Phone Utilization for Enhanced Adherence Counselling Intervention Among Persons With HIV

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Background: The conduct of physical enhanced adherence counselling (EAC) for antiretroviral therapy (ART) non-adherers is often flawed by objectionable time lag from commencement to timely completion of the process. Therefore, this study was set to determine the effectiveness and outcome of utilizing mobile phone for EAC intervention.

Material and Methods: This was a retrospective cohort study of 342 adults (≥ 18 years) with HIV-infection that were nonadherent to ART at Federal Teaching Hospital Gombe, Nigeria. Eligibility for EAC was having a VL of >1000 copies/ml on routine clinic visit. The phone-based EAC came about as a concession to the restricted movement during covid-19 pandemic. Structural equation modelling (SEM) framework, with full information maximum likelihood estimator was used to elucidate the pathways linking the relationship between individual characteristics, perceived barriers to ART adherence, and the applied interventions. The proposed model was tested using SEM (lavaan package in R programming language).

Results: The mean age and duration of ART of the participants were 40.14 ± 10.65 and 9.48 ± 4.16 (years) respectively. Majority (69.2%) of the participants were females, but males were older than their female counterparts (45.81 ± 10.95 vs 38.23 ± 10.78 years, $p=0.001$). The pre EAC VL was $<10,000$ copies/ml in 134 (42%) participants, between 10,000- 100,000 copies/ml in 106 subjects, and it was $>100,000$ copies/ml in 79 (24.8%) participants. A total of 321 (93.9%) participants completed the required 3 EAC sessions over 60-days. The proportion of viral load (VL) re-

suppression (<1000 copies/ml) after EAC intervention was 66.6%. The mean durations of EAC onset from time of high VL confirmation and completion of EAC were 6.26±3.22 and 59.99±5.14 days respectively. In the simultaneous model (Comparative Fit Index=0.89, Tucker-Lewis Index=0.851, Root Mean Square Error of Approximation=0.049, Standardized Root Mean Square Residual=0.059), the variables: forgot, knowledge/ beliefs, side effect of drugs, lost/ ran out of drugs, scheduling, and stigma were significant barrier factors contributing to poor ART adherence. In the regression model, male gender, higher pre-EAC VL, second-line ART regimen, and high barrier scores were independently associated with VL re-suppression.

Conclusion: The use of mobile phones for EAC intervention was effective for early initiation and timely completion of the sessions.

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'Boosting' Participatory Co-design of Digital Applications: Live Testing an Evidence-Based HIV/SRH Information, Screening and Referral Application for Young People in Zimbabwe

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Background: Community-based healthcare workers in low resource settings lack access to accurate and timely information on HIV guidelines, leading to the 'know-do' gap and reduced quality of HIV health information and referrals. Our objective was to engage community health workers in the participatory co-design of the Youth Boost digital application to support evidenced-based information, screening and referral for HIV, female genital schistosomiasis, family planning and mental health services in Zimbabwe.

Material and Methods: In November 2022, 58 community health workers (CHWs) from Chitungwiza and Insiza Districts, Zimbabwe conducted live pilot testing of the Youth Boost digital application, which provides evidence-based HIV and health information and guideline-concordant age-appropriate health screening decision aides for HIV, STI and mental health screening. Live testing and focus group discussions with CHWs explored user experiences of application downloading processes, functionality, and translated content in local languages for context-relevant co-design of the final Youth Boost Application.

Results: Live testing of the boost application highlighted critical issues for informing blended learning training materials and human-centered design of application roll out strategies on five key themes: 1. Download processes: Once off internet connection for downloading that was convenient to CHWs in different spaces. 2. App functionality: Offline functions that allowed CHWs to conduct screening and offer referrals to young people in a real-life environment. 3. Content: Engaging translated content presented in conversational language that strengthen health communication between the CHWs and the young people. 4. Visuals: Aided in better comprehension of the screening tools and allowed for interactive screening processes. 5. Screening Processes: Brief and precise taking average time of 4-8 minutes. CHWs screened a total of 25 young people during live testing, with health referrals made for (68%) for HIV/STI testing, and (48%) for mental health referrals. Accurate health information and condom distribution were offered to all young people screened.

Conclusion: Co-design of digital applications through live testing with CHWs informed context-relevant adaptations to application content, training curriculum, and monitoring and evaluation frameworks. Human-centered co-design processes are critical for increasing feasibility and acceptability of digital job aides for community-based cadres in low resource settings.

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Psychometric Evaluation of the Computerized Battery for Neuropsychological Evaluation of Children (BENCI) Among School Aged Children in the Context of HIV in an Urban Kenyan Setting

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Background: Culturally validated neurocognitive measures for children in Low- and Middle-Income Countries are important in the timely and correct identification of neurocognitive impairments. Such measures can inform development of interventions for children exposed to additional vulnerabilities like HIV infection. The Battery for Neuropsychological Evaluation of Children (BENCI) is an openly available, computerized neuropsychological battery specifically developed to evaluate neurocognitive impairment. This study adapted the BENCI and evaluated its reliability and validity in Kenya.

Material and Methods: The BENCI was adapted using translation and back-translation from Spanish to English language. The psychometric properties were evaluated in a case-control study of 328 children (aged 6 – 14 years) living with HIV and 260 children not living with HIV in Kenya. We assessed reliability, factor structure, and measurement invariance with respect to HIV. Additionally, we examined convergent validity of the BENCI using tests from the Kilifi Toolkit.

Results: Internal consistencies ($0.49 < \alpha < 0.97$) and test-retest reliabilities (-.34 to .81) were sufficient-to-good for most of the subtests. Convergent validity was supported by significant correlations between the BENCI's Verbal memory and Kilifi's Verbal List Learning ($r = .41$), the BENCI's Visual memory and Kilifi's Verbal List Learning ($r = .32$) and the BENCI's Planning total time test and Kilifi's

Tower Test ($r = -.21$) and the BENCI's Abstract Reasoning test and Kilifi's Raven's Progressive Matrix ($r = .21$). The BENCI subtests highlighted meaningful differences between children living with HIV and those not living with HIV. After some minor adaptations, a confirmatory four-factor model consisting of flexibility, fluency, reasoning and working memory fitted well ($\chi^2 = 135.57$, $DF = 51$, $N = 604$, $p < .001$, $RMSEA = .052$, $CFI = .944$, $TLI = .914$) and was partially scalar invariant between HIV positive and negative groups.

Conclusion: The English version of the BENCI formally translated for use in Kenya can be further adapted and integrated in clinical and research settings as a valid and reliable cognitive test battery.

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Client Retention Tracking Tool Improves Continuity of Treatment for HIV Clients in Nigeria

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Background: The rapid scale-up of antiretroviral (ARV) therapy in Nigeria improved the quality of life of recipients of care (RoC) for Human Immunodeficiency Virus (HIV). However, promoting Continuity of Treatment (CoT) for RoC on Anti-Retroviral Therapy (ART) is a persistent challenge due to the low ratio of healthcare providers to ROCs in Nigeria. Hence, the need to deploy an innovative strategy to quickly identify sites with low COT for urgent remediation. In February 2020, the USAID-funded Reaching Impact, Saturation and Epidemic Control (RISE) project developed the Client Retention Tracker Tool (CRTT), an excel-based offline tracking tool to assist health care providers in monitoring parameters for measuring COT. These parameters include interruption in treatment (IIT), transferred out, stopped treatment, died and newly enrolled clients on ART. This study assesses the effect of the CRTT

on COT for RoCs on ART at RISE-supported health facilities.

Material and Methods: Data of ROCs on ART were extracted from the electronic medical record (EMR) into the CRTT which displays client's losses, gains and COT. Daily estimates of sites COT rate (>98% good COT, 95%-98% - poor COT and <95% - very poor COT) was monitored and presented to health care providers during daily and weekly data review meetings. Healthcare providers are prompted to trackback clients from sites with <98% COT rate. The COT data were analyzed using the Semi-Annual Program Reporting (SAPR) timelines [pre-SAPR = end of February 2020); SAPR (end of March 2020) and post-SAPR (after March 202)].

Results: The findings of this study showed that 43,539 RoCs were receiving ART (pre-CRTT) at the end of February 2020; while 51,485 ROCs were receiving ART post-CRTT. The COT by states pre-SAPR to SAPR and post SAPR are Niger (90%-97%-99%), Cross River (94%-99%-101%), Akwa Ibom (92%-97%-97%), Adamawa (100%-100%-100%). IIT reduced from 508 to 140 pre-and post-CRTT respectively.

Conclusion: The progressive increase in COT rate is a pointer that the use of CRTT may reduce IIT, sustain the COT rate at >98% and lead to long-term care of ROCs.

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Comparing Online and Traditional Service Use Models Among Key Populations in Liberia

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Background: In Liberia, key and vulnerable populations account for most HIV cases, with the prevalence of HIV among men who have sex with men at 37.9%, transgender people at 27.6%, female sex workers at 16.7%, and people who inject drugs (PWID) at 14.4%. Traditional (offline) services are the main modality of HIV service provision, but

stigma and discrimination toward key and vulnerable populations deter these groups from accessing services. The FHI 360 Meeting Targets and Maintaining Epidemic Control (EpiC) Liberia project, through PEPFAR and USAID funding, piloted the use of QuickRes, a (KP)-friendly and safe online application that allows clients to determine service needs and book appointments online.

Material and Methods: We reviewed HIV testing data from July 2021 through September 2022 and used a two-service model z test to compare population type and case finding between those who booked HIV testing online and those who were linked to HIV testing offline.

Results: Among the beneficiaries who were referred and booked HIV testing services online (n=1,062), 78% were KP and 22% were general population. For those who received HIV testing services offline (n=136,130), 70% were general population and 30% were KP. Case finding among those who booked via online platform was 20.8% compared to 5.3% offline (95% CI: 10.2-20.9).

Conclusion: Online platforms are an alternative to linking individuals to HIV testing, including KP who may prefer online to offline due to stigma. Although currently, online screening and booking for HIV testing services represent a fraction of overall testing, it reaches those at higher risk for HIV infection and therefore should be scaled up. Working with peer outreach networks may help promote the use of online platforms to increase the number of clients accessing online services.

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The Impact of Using Viral Load Excel Tracker & Viral Load Calendar to Improve VL Coverage Among Children & Adolescents (CAPLHIV), a TASO-Mbale Experience

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Background: Viral load (VL) testing is the gold standard for monitoring HIV treatment response. Unlike adults, children and adolescents (CAPLHIV) require a biennial VL test, and at times this is challenging due to factors like missed appointments, over-representation, competing priorities like schooling, and knowledge gaps among some healthcare providers. At TASO-Mbale, VL coverage among the CAPLHIV was 78% by December 2021 & a CQI was instituted to improve this to 100% by September 2022.

Material and Methods: Changes tested included: client file audits and analysis of the audit tool to identify all those due; use of the VL tracker tool and calendar; observed the 2 months bleeding window; made pre-visit VL appointment phone call reminders; use of Dry Blood Sample collection modality through 'expert-clients' in hard-to-reach areas, camps for school-going CAPLHIV; and referrals to nearby TASO centers for VL bleeding.

Results: The facility's VL coverage among the CAPLHIV improved from 78% to 97% by September 2022. Discussion: The improved performance was attributed to efficient use & monitoring of data through: entry of all eligible clients in the VL tracker, where all those who are bled are marked; use of the reducing-balance technique; making use of the 2 months bleeding window; and holding care-givers' meetings regularly to emphasize the importance of scheduled VL testing & antiretroviral therapy adherence.

Conclusion: Improving VL coverage in CAPLHIV can be achieved through a multi-disciplinary approach by integrating activities at the facility and during community follow-ups; not underrating the need for teams to explore beyond the bare minimum. Electronic Data system innovations and use at all level is very crucial in directing and guiding health process in a timelier manner for improved outcomes.

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The Use of Influencer Marketing and E-commerce Platforms to Increase the Uptake of HIV Self-Test Kits Among Sexually Active individuals in Nigeria

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Background: HIV self-testing (HIVST) provides a more convenient and accessible means for individuals to test for HIV compared to conventional HIV testing services. However, uptake of HIVST kits among individuals in Nigeria remains low. To address this challenge, the Strengthening HIV Self Testing in the Private Sector (SHIPS) project is using influencer marketing to increase the awareness and uptake of HIVST kits among 18 – 34 year old individuals in Abuja and Lagos through e-commerce platforms.

Material and Methods: Influencer marketing involves collaborating with an individual who wields influence over an audience of people to market products or services. The project utilized influencer marketing and partnered with myPaddi, a Sexual & Reproductive Health focused e-commerce platform. 4 influencers were used to promote the HIVST kits on social media while advertising the e-commerce platform as a private, convenient, and confidential channel for individuals to purchase the kits. The project team used a combination of post-

campaign data analysis using social media analytics and backend website data to measure the reach of the campaign and track the amount of HIVST kit related sales.

Results: The project discovered that influencer marketing and e-commerce platforms are effective tools for increasing the uptake of HIV self-testing kits as it reached 379,065 individuals through influencer marketing and recorded 1,739 HIVST kit sales through the e-commerce platform between May and October 2022. This activity highlighted the benefit of providing an easily accessible purchase channel for HIVST kits. The project also found that partnering with influencers can be effective in driving health behavior change. The analysis revealed that influencer content was able to reach a wide audience, increase knowledge about HIV self-testing, and promote positive attitudes towards it.

Conclusion: Using influencer marketing and e-commerce platforms can increase the uptake of HIVST kits among sexually active individuals. Influencer marketing can help to bridge the gap caused by lack of HIVST awareness and promote HIVST uptake.

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The Evaluation of the Client Management Application on the RISE Project

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Background: The case management approach is an effective strategy that ensures that various services are available to meet the needs of HIV recipients of care (RoC). To this end, the USAID-funded Reaching Impact Saturation and Epidemic control (RISE) project developed and piloted the use of a mobile application (app) to enable case managers (CM) to easily manage their clients in four facilities, in two states in Nigeria for optimal treatment outcomes.

The pilot assessed the acceptability of the app among CMs for managing HIV RoCs.

Material and Methods: The study adopted a descriptive survey design to assess the acceptability of the app among CMs. A questionnaire (google form) was administered to twenty-seven CM from Akwa Ibom and Taraba to collect feedback on the CM user experience of the app. The app was installed on Android devices for the CM to use over the course of one week. Each CM manages an average of 500 clients. The app features clinical information such as Index Contact Testing Monitoring, Clinic Appointments, Medication Adherence Assessments and Viral Load Monitoring amongst others. The app also provides a schedule and reminder system to track RoCs who are likely to miss their next appointment using a machine-learning algorithm. Data collected can also be uploaded offline into the facility electronic medical record. CM user experience data were then analyzed and interpreted.

Results: Overall, the results showed that the CMs were open to using the app. A total of 89% (24/27) of the participants agreed that the app helped them meet their objectives which are: providing quality service delivery to RoCs, ensuring RoCs' viral load samples are collected regularly, ensuring RoCs adhere to treatment thereby eliminating IIT amongst others. On the basis of the user experience, 59% of the respondents rate the app as excellent, 26% as very good, and 15% as good. On intuitiveness, 63% of the respondents rate the app excellent, 26% very good, and 7% good respectively.

Conclusion: The CM app could help improve quality and efficiency of HIV care, streamline workload for CMs, and improve the experience of HIV care for RoC in Nigeria.

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Integrating Civil Birth Registration (Unique Civil Identification Number) Into the Health Information System Through the Pediatric HIV Care Services in Zambézia Province, Mozambique

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Background: In December 2018, Mozambique passed legislation (law no. 12/2018) allowing for electronic civil registration of vital statistics on birth, and a phone-based registration system was introduced. In September 2021, Friends in Global Health (FGH), in collaboration with Ministry of Health, Ministry of Justice, and UNICEF introduced health facility-based civil registration in Zambézia Province, with to explore the integration of unique civil identification into the health information database of children living with HIV (CLWH), a potential means to identify duplicated HIV care registration.

Material and Methods: Implementation research was used in this collaborative pilot. In coordination with the other stakeholders, four FGH-supported health facilities were selected to pilot the project. Caregivers were referred from Maternal and Child Health and Pediatric HIV service entry points to trained staff who completed the child's birth record notification via a mobile phone-based registration system, after which a unique civil registration number was generated, and handed to the caregiver. For CLWH, this number was transcribed in the medical record and entered into the electronic tracking system. A monitoring tool was used and a supervisor visited the health facilities weekly to oversee activities. Daily reports were

completed and monitored in a secure shared platform. Descriptive analysis was done.

Results: Between September 2021-November 2022, 6095/8131 (75%) children (<13 years of age) who arrived at the notification posts in the pilot health facilities were registered, of whom 348 (6%) were CLWH. Health staff struggled to manage registrations when multi-tasking for other clinical care duties, and technical difficulties with the phone-based system resulted in varying results and delays in registration. Completed notifications per trimester for CLWH, within the pilot period, ranged between 15%-85%. During the pilot period, 224/348 (64%) of CLWH who received their civil registration number had that number entered in the electronic database.

Conclusion: Although many children were registered through this pilot, technical inconsistencies and clear task delineation need to be addressed before strategy expansion. Lessons learnt could plausibly inform the design of mHealth systems used to improve the identification of silent transfers of individuals in HIV care through the use of a unique national registration number.

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Behavioral Intervention in Voluntary Medical Male Circumcision (VMMC) For HIV Prevention in Highly Resistant Segments of Men Using Social Media Influencers in Lusaka, Zambia

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Background: Reaching resistant segments of men continues to be a challenge as most men easily attracted to VMMC have been circumcised. The continued drive to provide HIV prevention methods requires innovations. The Ministry of Health, CIDRZ and Desire line have been working to build on the works of the IPSOS study to help reach the three resistant segments Mr. Purple, Green and Grey.

Prior Voluntary Medical Male Circumcision research in Zambia segmented uncircumcised men within target age ranges 15 -29 into seven segments. Four are easy to reach while three are resistant. The resistant segments amount to 54% of uncircumcised men in Zambia according to the IPSOS study,2015. This intervention explored the role social media influencers could play in influencing behavior change and increasing VMMC uptake in one of the three highly resistant segments referred as Mr. grey (Traditional Believer). Mr. grey finds VMMC irrelevant and is motivated by social status and popularity.

Material and Methods: Two social media influencers, popular in Zambia, were engaged to promote the contest in dance and song. Within their social media posts, influencers directed their audiences to visit a contest site hosted on a CIDRZ Facebook page. The contest site communicated the rules of the contest. The rewards directly appealed to the desires of Mr. Grey. They included creating and posting in collaboration with social media influencers, live radio interviews, social media training, and public acknowledgement. Only uncircumcised men could participate by receiving a code after undergoing VMMC at a qualified facility. The contests were marketed for approximately 2 months and submissions judged and winners announced.

Results: Number of combined social reactions to influencer posts: Comments, likes, (re-posts)-13,083; Number of followers-13,312; Number of men who participated-73; Number of men in target age circumcised via the contest-52.

Conclusion: Use of social media influencers to create demand for health services is an option to invest in and consider for greater impact based on our results above. The intervention successfully reached out to potential high resistant VMMC clients and were circumcised. If rolled out to greater scale, much more result can be achieved.

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Exploring Experiences of Health Professionals Implementing an Electronic Register for HIV Patients at Scott Hospital Lesotho

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Background: Lesotho started piloting electronic register (eRegister) for HIV patients in 2018. At Scott hospital, the eRegister is used in male, maternal and child, anti-retroviral (ART) clinics and pharmacy. To date, experiences of health professionals implementing the eRegister have not been explored. The aim of this study was to explore health professionals' experiences regarding implementation of eRegister at Scott hospital.

Material and Methods: Phenomenological approach was used to collect data from 10 health professionals with more than six months working with eRegisters. after consenting to participate. Permission to conduct the study was sought from hospital management. Health professionals were purposively selected to the study. Interviews which lasted between 20-40 minutes were done on the 3rd to 5th January 2023. Data from audio taped interviews were translated verbatim. The steps of phenomenological analysis suggested by Colaizzi (1978) were followed.

Results: Participants' age ranged from 35 to 63 years. The following themes were identified: 1) Ease of work and patient follow-up: Participants reported that eRegister eased patient follow-ups. Participants also indicated that eRegisters promote computer literacy. 'We are now able to see patients who were initiated and are not coming for check-ups. When I see that patient so-and-so is no longer coming, I contact people from mothers-to-mothers to follow them up'. [ART nurse]; 2) Duplication of work: Participants indicated that the eRegisters duplicate job and are time consuming. This was related to concurrent registration of patients on paper and eRegister. 'We record the same information on the paper and eRegister, this wastes time'. [ART nurse]; 3) Lack of knowledge and

training: Participants reported that training was not enough as they are not able to correct mistakes on their own and are able to use registration module only on the eRegisters. 'I think this data is not accurate, sometimes we fail to remove a patient when registered more than once. We await for 'ICAP' staff to solve such problems' [MCH nurse; ART nurse].

Conclusion: Health professionals at Scott hospital reported positive and negative experiences. It is critical for hospital management to rotate staff after a fixed prolonged period of time. Refresher training on eRegister should be instituted.

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The Potential of Digital Health Technologies Within the Health System to Support HIV Care and Prevention in Nigeria

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Background: Digital health technologies have been recognized by the World Health Organisation (WHO) as vital in achieving health outcomes. As one of the fastest growing mobile phone and internet subscription on the African continent, opportunities abound in Nigeria for the application of digital technologies for HIV treatment and prevention. This study explores opportunities for the application of ehealth, mhealth and telehealth within health systems building blocks in order to improve HIV prevention and care in Nigeria.

Material and Methods: An in-depth review of secondary data from developing countries with similar HIV burden to Nigeria was done. WHO health system's framework was the conceptual framework used as it allowed for the identification of health systems challenges within the HIV prevention and care continuum, in order to explore feasible points for the application of digital health technologies.

Results: A review of interventions from developing countries with similar HIV burden to Nigeria showed that ehealth, mhealth and telehealth can

strengthen health systems building blocks. For service delivery; text messages, voice calls, video consultations, unstructured supplementary service data and the social media have been applied to enhance access to HIV care, medication adherence, retention in care, stigma reduction, HIV counselling and testing, and prevention of mother-to-child-transmission of HIV. To strengthen the health workforce; online learning platforms have been used for professional development, tele-mentoring has been used to support clinician's decision making, global positioning systems and staff management information systems have been used for staff supervision and monitoring. To improve health information systems; electronic medical record systems and district health information systems have supported paper-based systems for seamless collection, storage and sharing of patient data. Medicines supply has been improved using an SMS-assisted drone technology and the pharmaceutical management information systems. Finally, health financing functions of pooling, funds collection and purchase of services and health leadership can be improved by digitalization. Implementation requirements include committed health leadership and development of low-cost, easy-to-use interventions that fit Nigeria's technological infrastructure.

Conclusion: The rising mobile phone subscription in Nigeria necessitates the prioritization of digital health technologies requiring at least a mobile phone to improve health systems for HIV prevention and management.

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A Robust Monitoring and Evaluation (M&E) Data Management System and How It Responded to Project Needs: The Catholic Relief Services (CRS) EPIC 3-90 Project, Zambia

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Background: Project Monitoring and Evaluation (M&E) systems guide implementation, as well as respond to the information needs of Ministries of Health and donors such as the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The EpiC 3-90 project worked with all partners to harmonize the information systems of different HIV response programme data at all levels. The information management systems are aimed at strengthening and expanding the M&E and quality management systems (QMS) that facilitate real-time, evidence-based decision-making. We implemented this system in a total of 102 health facilities in Zambia from April 1, 2017, to September 30, 2021.

Material and Methods: This data management system was designed for use in the collection and compilation of data for monitoring activities. It defined the core indicators that were reported by the project as per MOH and donor requirement. Using Microsoft (MS) based platforms we developed data collection platforms that were embedded with data validation processes which was aimed at guiding the users on the expected relationships between different data elements reported. The consolidation and storage of data for continuous analysis of patterns, trends and levels using MS excel pivot tables in response to program information needs was done.

Results: This resulted in a strengthened M&E capacity, including technical and program implementation from facility and national level, in creating demand for data usage, easy analytical

skills, timely availability of data for decision making and improved continuity of care for all recipients of care. The tool has improved the quality and consistency of reports and is now being considered for adoption by the Ministry of Health in Lusaka Province.

Conclusion: The EpiC 3-90 M&E system has a robust data management system that can be employed in monitoring for epidemic control with a focus on improved collection, cleaning, and validating of data, governance of data (management), and enhances data use for technical assistance. The system should be adopted by MOH and other implementing partners running similar activities.

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Development of Cost-Effective Method for Viral Load Test

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Viral Load measurement in people living with HIV (PLHIV) is important for monitoring antiretroviral therapy (ART). In a population of approximately 38 million PLHIV globally, 67% of them residing in resource-constrained areas were on ART. The World Health Organization recommends that every person diagnosed with HIV receives a viral load (VL) test at least once yearly to facilitate staging, treatment decisions, and monitoring of treatment efficacy. The standard laboratory-based VL test requires advanced infrastructure, well-controlled environment, and trained technicians, the requirements that can hardly be achieved under resource-limited settings. Given the current economic situation in developing countries, such as Tanzania, there seems to be an urgent need to develop inexpensive, portable, and easy-to-operate technologies for monitoring HIV treatment in remote areas with poor healthcare infrastructures. Techniques for VL test have improved over the past few years, and scholars have constantly been working hard to design high-quality and sophisticated VL machines. However, previous scholars discovered that the current developments on VL test cannot meet the demands of people from unprivileged areas and the time to get the results takes longer time. Challenged by the

situation, this study proposes a more appropriate VL test method that can necessitate development of inexpensive, less time and portable VL test method.

The approach will apply specific protein binders that can chemically react with DNA/RNA of HIV to visualize appearance of HIV in samples. Next, an image of the coloured sample will be acquired, and then fed into the DeepNet framework. Our goal revolves in using mobile devices, such as smartphones powered by the proposed VL DeepNet framework, to compute VL effects in patients.

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Harnessing the Power of Tech to Improve Safe Choices and Access to Sexual Reproductive Health and Rights Services Among Young Key Populations in Kenya: ICRHK Triggerise Project

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Background: In Kenya, young key populations including female sex workers, men who have sex with men, and transgender individuals face limited access and information on sexual and reproductive health services and rights. Despite a decrease in overall HIV prevalence to 4.9%, transmission rates among young people aged 15-24 remain high, accounting for 42% of new adult transmissions. The Kenya National HIV Estimates 2020 report highlights higher HIV prevalence among young people, with 3.2% for females and 2.5% for males, compared to the national average of 2.5%.

Material and Methods: ICRHK is collaborating with Triggerise to implement TIKO, a digital platform designed for young key populations aged 15-24. TIKO aims to enhance informed decision-making and access to support sexual and reproductive

health services. The mobile app provides personalized health messages and empowers young key populations to make safer, informed choices. TIKO also connects users to high-quality, key population-friendly SRHR services.

Results: In the last 6 months, 1749 SRHR services have been provided to the young key population (15-24 years) in Mombasa county. 709 young key population have used the TIKO app to access HIV testing services, 29 (60%) Female Sex workers, 12(25%) men who have sex with men, and 7(15%) Transgender turned HIV positive and were all (100%) linked to ARTs. The Uptake of PrEP has improved by 21% through Young key population feedback received through the platform. This platform has also improved the collection of real data to inform the program on young people's needs.

Conclusion: In Kenya, incorporating digital technology to improve access to sexual and reproductive health services for young people has the potential to enhance the efficiency and impact of SRHR service utilization. Tiko has already demonstrated success in improving appointment response and follow-up, encouraging positive behavior change, and fostering a cycle of healthy decision-making among young key populations.

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Psychiatric Comorbidities Among Clients Receiving Opioid Agonist Therapy in Mbeya, Tanzania

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Background: While substance use is considered a psychiatric condition in itself, other psychiatric comorbidities, such as major depressive disorder,

anxiety, and personality disorder, are common among opioid drug users. The presence of mental disorders has negative impact on treatment outcome among opioids drug users, while clients who are diagnosed and started on appropriate mental health treatment can have significant improvement psychologically, socially and achieve better treatment outcomes when on opioid agonist therapy (OAT).

Material and Methods: Clients of the Mbeya zonal referral hospital OAT clinic were assessed for psychiatric comorbidities using four different scales: Generalized Anxiety Disorder Scale (GAD-7), Modified Psychosis Screening Questionnaire (PSQ), Patient Health Questionnaire (PHQ-9) and Standardized Assessment of Personality Abbreviated Scale (SAPAS). Clients were screened for substance abuse using Urine Drug Screening (UDS) test. HIV testing was done following the national HIV testing algorithm. Demographic details for all clients were also captured.

Results: Approximately 95% of the 100 participants screened were male with mean age of 36 years, 31% had a history of injecting drugs and 46% were concurrently using other drugs. Prevalence of HIV among participants was 15%. A total of 36% had any psychiatric disorder. Mild depression was the most prevalent, at 15%. Nine (9%) of the screened patients had mild anxiety and 1% had moderate anxiety. Major depressive disorder (MDD) was identified in 2%, while 1% of clients had features suggestive of psychotic problems and 6% had features of personality disorder. The overall prevalence of mental health conditions among People living with HIV (PLHIV) was 33.3%. Depression is the most common mental health problem among PLHIV (20%).

Conclusion: This study provides evidence for psychiatric comorbidities among MAT clients at MZRH MAT clinic, highly prevalent among PLHIV. The prevalence of any psychiatric disorder in MAT clients was found (36%) which is almost 12 times higher than in the general population (3%). Depression, anxiety, and personality disorders are common among MAT clients. The findings highlight the importance of expanding mental healthcare services for MAT clients especially among PLHIV.

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Increased Vulnerability to HIV Infection among Key Populations During the COVID-19 Emergency, Mozambique 2022-Formative Assessment

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Background: Over the last three years the colliding AIDS and COVID-19 pandemics along with economic and humanitarian crises have placed HIV/AIDS response progress among the key population under increasing threat, especially in low-and-middle-income countries. The goal of this early formative study was to assess the impact of the COVID-19 state of emergency on the HIV response for key populations in Mozambique.

Material and Methods: A qualitative study was conducted in the city of Maputo and in the capitals of the provinces of Maputo, Gaza, Inhambane, Manica, and Zambezia in the first quarter of 2022. Men who have sex with men, people who inject drugs, female sex workers, transgender people, pimps, members of community-based organizations, police, and health professionals who provide health care to key populations, constituted the group of key informants. Individual and focus group interviews for each of the key population groups were conducted with standardized scripts on risk behaviours and access to health and support services since the first state of emergency for COVID-19 in March 2020. Data collection continued until saturation of responses was reached. Analysis was based on grounded theory principles related to qualitative research.

Results: A total of 144 interviews were conducted, 108 individual and 36 focus groups. Some female sex workers reported discontinuing antiretroviral treatment as they feared contracting COVID-19 at health facilities and a reduction in the provision of HIV testing and prevention services at hotspots as testing brigades were prohibited. Some men who have sex with men noted a reduction in HIV lectures

and training in community-based organizations. People who inject drugs reported that group therapy was cancelled. Health workers also reported cancelling meetings to coordinate health promotion activities for key populations while the state of emergency prevailed.

Conclusion: There is an ongoing need to adapt health services and support to key populations to the dynamics of the contemporary world. The crisis experienced during the COVID-19 state of emergency must serve as a basis for strengthening strategies to combat HIV in Mozambique and worldwide.

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Effects of COVID-19 on Food Insecurity Among Female Sex Workers Living With HIV in Nairobi, Kenya. Mixed Method Study

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Background: Kenya's food security data for 2021 shows that 24.8% of the population is underweight, 68.5% suffer from moderate food insecurity while 25.7% suffer from severe food insecurity compared to 11% globally. The female sex workers (FSW) data shows that 98% suffer from moderate to severe food insecurity, yet they are not a priority to the government due to engaging in sex work, termed illegal by the constitution of Kenya. In 2020 March, introduction of movement restrictions and night curfews to curb COVID-19 by the government saw closure of many night clubs and hot spots, most of which were business avenues for FSW. This resulted in low income hence many FSW reported not able to afford meals for days. This study was done at the sex workers outreach program (SWOP) to assess the effects of COVID-19 on food security among the FSW living with HIV.

Material and Methods: In 2022 March, a cross sectional survey was carried out among 225 FSW living with HIV and seeking HIV services from SWOP in Nairobi. The six-item food security module was

used for data collection. A retrospective chart review for the same study participants was done and data on Ante Retroviral Therapy (ART) adherence, viral loads, ART appointment adherence, body mass index and opportunistic infections for the last one year extracted.

Results: The study data showed, 56% (n=126) FSW suffered from moderate food insecurity, while 37.3% (n=56) suffered severe food insecurity. Chart review data was compared before and during Covid-19. Data showed that missed opportunities for viral load sample collection had increased by 36.7% (n=55). 21.3% (n=48) FSW had missed more than one appointment compared to 5.3% (12) before COVID-19, 42.7% (n=96) had reported poor pill adherence, STI had increased by 23.5% (n=53), Pregnancy termination by 3.5% (n=8). There was significant association; between moderate food insecurity and poor pill adherence at $p < 0.000$, and severe food insecurity with missed appointments at $p < 0.003$.

Conclusion: Presence of Covid-19 impacted on FSW finances, which led to food insecurities. As a result, HIV care services utilization was impeded. Policy makers need to prioritize this.

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Urban-Rural Inequities in Travel-Time to HIV Treatment in Africa: A Three Country Comparison

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Background: In 2021, UNAIDS launched a new strategy: "End Inequalities. End AIDS. Global AIDS Strategy 2021-2026". Increased travel-time to health facilities is associated with decreased treatment initiation and retention. We analyzed data from the nationally representative Population-Based HIV Impact Assessment (PHIA) surveys from Eswatini, Malawi, and Zambia to identify inequities in travel-time to treatment.

Material and Methods: Data were collected in 2015/16 in Malawi, and 2016 in Eswatini and Zambia. PHAs collected questionnaire data and blood samples (to identify the HIV status of each individual and detect antiretrovirals). People living with HIV (PLHIV) who reported being on antiretroviral therapy were asked to specify travel-time to receive ART: <1 hour, 1-2 hours, or >2 hours. We determined epidemic severity, and treatment coverage among adults 15-59 years. We fit the observed travel-time data using Logistic cumulative distribution functions.

Results: Eswatini had the most severe epidemic: 28% prevalence, similar in urban (30%) and rural (27%) areas. Prevalence was 11% in Malawi, 12% in Zambia; higher in urban than rural areas (14% to 10% [Malawi], 15% to 9% [Zambia]). Eswatini had 77% treatment coverage, Malawi 70%, Zambia 62%. Eswatini and Malawi had higher coverage in rural than urban areas: 78% vs. 73%, 71% vs. 66%. In Zambia, coverage was higher in urban (66%) than rural (57%) areas. The cumulative proportion of PLHIV on treatment was an increasing function of travel time; on average, PLHIV in Eswatini had the shortest travel time, PLHIV in Malawi had the longest. A fairly high percentage of patients traveled over 2 hours for treatment: 21% (Zambia), 19% (Malawi), 11% (Eswatini). In all three countries, we found substantial urban-rural differences: a greater proportion of patients in rural areas, in comparison with urban areas, travelled for over 2 hours. Notably, even in urban areas, quite a few traveled for over 2 hours to reach treatment: 11% (Zambia), 10% (Malawi), 6% (Eswatini).

Conclusion: We have identified substantial inequities in access to treatment in Eswatini, Malawi, and Zambia when coverage levels were fairly high. As coverage has increased, it is important to determine whether inequities still exist and, if so, identify strategies to eliminate them.

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Increasing Age and Duration of Sex Work Among Female Sex Workers in South Africa and Its Potential Impact: A Meta-Analysis and Simulation Exercise

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Background: Estimates of HIV incidence among female sex workers (FSW) are frequently derived using mathematical models. These models require several behavioural characteristics as inputs, which are often assumed to be constant over time. This meta-analysis reviewed this assumption for two behavioural characteristics (age and duration of sex work (SW)) of FSW in South Africa.

Material and Methods: We systematically searched for studies with information about age and duration of SW for FSW in South Africa. We extracted study size, study year, mean FSW age (and standard deviation) and mean SW duration. We assumed a Gamma-distribution for FSW age, an Exponential-distribution for SW duration, and fitted Bayesian hierarchical models to estimate time trends. We assumed weakly informative priors and a log-linear relationship (with common slope but study-specific intercepts) between time (study year) and the distributions' means. Finally, we performed a simulation exercise to examine if estimated time trends might impact estimates of HIV incidence rates in FSW.

Results: We included 19 studies contributing 33 estimates of mean FSW age and 11 studies contributing 19 estimates of mean SW duration. The studies were conducted between 1996 and 2019. Reported mean FSW age and SW duration ranged from 25 to 37 years and 1.8 to 10.1 years, respectively. Model fits showed strong evidence of an increase in mean FSW age from an estimated 26.3 years (95% credible interval 23.0-30.1) in 1996 to 32.4 years (28.2-37.6) in 2019. There was some

evidence for an increase in SW duration, from an estimated 3.3 years (1.1-10.1) in 1996 to 6.1 years (2.2-17.4) in 2019. Using these estimated time trends in the simulation exercise resulted in an estimated HIV incidence rate that increased slightly in the first four years between 1996 and 2000, but declined substantially and steadily thereafter. This decrease was not observed if age and duration of SW were assumed constant over time.

Conclusion: In South Africa, FSW age and duration of SW have increased over time, possibly reflecting the expanding community mobilization among sex workers, and a more supportive rights/advocacy environment. Mathematical models used to derive HIV incidence for FSW need to adjust for these changes.

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Factors Associated With Viral Load Suppression Amongst Transgender People in South Africa

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Background: Sustained viral load suppression (VLS) can improve quality of life amongst transgender people living with HIV (TPLHIV). However, transgender people continue to experience disparities along the HIV care continuum due to psychosocial and socio-economic factors. Insights into factors that influence VLS are critical to determine targeted interventions for transgender health programmes. This analysis presents characteristics of TPLHIV accessing health services from USAID-funded transgender clinics in four South African districts and characterizes factors associated with VLS in this group.

Material and Methods: We used routine programme data that were manually collected and recorded in REDCap between October 2021 and September 2022. We summarised patient characteristics using descriptive statistics and

conducted a multivariable logistic regression in Stata v16 to identify factors associated with VLS (<50 copies/mL) among TPLHIV ($p < 0.05$).

Results: Among 889 TPLHIV who were eligible for a viral load test during the period of review, 773 (87%) underwent a viral load test. Amongst these, 90.4% were transgender women, 7.3% were gender non-conforming, and 2.3% were transgender men. The median age was 29 years, 72% were unemployed, and 8% reported experiencing physical and/or sexual violence in the last 12 months. At least 20% (153/773) had completed tertiary education and 86% (664/773) were treatment naïve at baseline. VLS was 59% (459/773) amongst those who had a viral load test done. The odds of VLS were higher amongst TPLHIV who were ART experienced (vs. those who were ART naïve; aOR =4.80, 95% CI: 1.80,12.79). Transgender people on a protease inhibitor-based regimen (vs. those on a dolutegravir-based regimen aOR=0.068, 95% CI: 0.008,0.57) and those who had experienced violence in the last 12 months (vs. those who had not; aOR=0.46, 95% CI: 0.23,0.86) were less likely to be suppressed. Although level of education was not statistically associated with VLS, our analysis demonstrated improved VLS with increasing education levels.

Conclusion: VLS remains a challenge amongst TPLHIV. Integrating HIV health services with programmes that address gender-based violence, offer educational opportunities, and provide enhanced adherence support could improve VLS in this vulnerable group. Moreover, the continued roll-out of dolutegravir in South Africa may provide benefits in achieving or maintaining VLS.

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Empowering Cross Border MSMs and Trans Women to Claim Their Rights and Build Capacity to Improve Livelihoods in Western Kenya

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Background: The global fight against HIV/AIDS continues to pose challenges: nationally the prevalence is estimated at 5%; infection rates are on the rise in Bungoma (3%), Kakamega (4%) and Busia (7.2%) Counties (KASF II 2021 – 2025); stigma and discrimination remain rampant, and the global response is under increasing financial pressure. In light of these trends, its fundamental to focus on the human rights of cross-border MSMs and Trans women to contain criminalization, homophobic bullying and sexual violence. Objective: To review the factors influencing empowerment of cross-border MSMs and Trans women to contain criminalization and claim their human dignity.

Material and Methods: Between March 2020 and December 2022 in the 3 Counties (Kakamega, Bungoma and Busia), 516 MSM and 220 Trans women were enrolled via respondent-driven sampling and in-depth interviews with 3 MSM groups (1 group Kenyan MSMs, 2 groups of cross border MSMs from Uganda and 2 cross-border Trans women groups (n = 144) and GBT friendly healthcare workers.

Results: A total of 736 participants were enrolled in the study; the mean age was 27 years (range: 18 to 68) and 14% (106) were TGW. 63% of MSM participants met criteria for depression compared with 43.8% of Trans women participants (p<0.001); 21.3% of MSMs met criteria for severe anxiety compared with 13.1% of TGW (p<0.05) and 33.0% of MSMs met criteria for PTSD compared with 18.4% of TGW (p<0.001). Overall, 61% (45/74) of respondents reported having experienced SGBV; 98% (44/45) reported sexual violence by intimate partners; 75% (33/44) were physically abused by family members. Of the 29 participants who reported no violations, 38% (11/29) had been

economically violated. Cumulatively, 59% (44/74) reported verbal abuse by bouncers and law enforcers.

Conclusion: Cross border MSMs and TGW experience higher levels of psychiatric comorbidities than other MSMs and TGW due to compounding exposure to displacement-related stressors and stigma-related stressors. Informed by tenets of minority stress theory and intersectionality theory, we discuss mental health intervention implications and future directions.

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Strategies to Close the PrEP Uptake Gap Among Men Who Have Sex With Men and Transgender People in Tshwane: Perspectives From the Community

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Background: Pre-exposure prophylaxis (PrEP) is a highly effective HIV prevention strategy that has shown impressive population-level impact on HIV transmission when uptake is high. Men who have sex with men (MSM) and transgender (TG) communities are disproportionately more vulnerable to HIV and have been identified as a national priority for expanding PrEP uptake. Despite South Africa being the first African country to approve PrEP for MSM and TG people, uptake remain low. Multiple factors complicate the PrEP service delivery cascade uptake gap. This study explored facilitators and barriers to PrEP uptake to identify strategies to increase uptake and adherence in these key populations.

Material and Methods: In this mixed-methods study conducted between July 2021 and June 2022 in Gauteng, South Africa, 202 self-identifying MSM and TG >18 years from local LGBTQI organisations, completed cross-sectional surveys, followed by 20 in-depth interviews. Data were collected on demographics, sexual behaviors, perceptions, and

utilization of PrEP. Quantitative data were analysed using univariate logistic regression; qualitative interviews were coded and analysed using a thematic approach.

Results: Findings showed high PrEP willingness but low uptake; 95% were aware of PrEP but only 8% were PrEP-engaged. Having more than one close social tie on PrEP was associated with PrEP engagement (OR=2.71, 95% CI 1.05, 6.99; p=0.039), particularly that with a sexual partner (p=0.027). Barriers to PrEP uptake included lack of knowledge and inability to access PrEP. Strategies identified to facilitate PrEP uptake include: (1) community-engaged PrEP education; (2) reframe PrEP use as sexually responsible; (3) leverage peer networks; and (4) expand accessible and LGBTQI-sympathetic PrEP service models.

Conclusion: Low PrEP uptake rates in communities are due to a lack of PrEP knowledge, PrEP messages in the community which are discouraged, and a lack of PrEP service delivery models that are accessible and culturally respectful of sexual and gender minorities. This study shows that there are opportunities to increase PrEP use through community-led educational efforts and anti-stigmatization campaigns. Multi-level interventions to promote PrEP uptake, on the other hand, should consider social, educational, and structural factors, as well as ways to inspire PrEP uptake while minimizing barriers.

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Lingering Providers' Stigma Towards Key Populations May Influence Their PrEP Prescribing Behaviors: Findings From a Qualitative Study in Ghana

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Background: Since 2020, Ghana has been rolling out oral Pre-Exposure Prophylaxis (PrEP) for populations at risk of HIV acquisition. PrEP can substantially reduce HIV acquisition among key populations (KPs), including female sex workers (FSWs), men who have sex with men (MSM), and people who inject drugs (PWIDs). Health Care Providers (HCPs) are critical for PrEP provision in Ghana where PrEP remains HCPs initiated. This study aimed to deepen the understanding of the causes for PrEP decline or discontinuation among KPs in three regions of Ghana (Western, Western North, and Ahafo) with high HIV burden and active PEPFAR interventions.

Material and Methods: One of the Care-Continuum project's continuous qualitative improvement efforts included conducting 60 qualitative in-depth interviews (IDIs) in September and October 2022. Participants included HCPs providing PrEP services to KPs, individuals from KPs, and 10 CSO staff from across the three regions. Data was recorded, transcribed verbatim, and analysed using NVIVO 12 software. Coding followed an analytical framework developed a priori.

Results: A prominent theme that emerged from all interviews suggests provider stigma may restrict PrEP uptake and decrease continuation. Some of the HCPs interviewed expressed discomfort in serving KPs. Respondents in the IDIs referred to the worsening legal environment for KPs since the introduction of the bill criminalizing LGBTQI in the country. CSO personnel cited situations when MSM declined PrEP because of the health facility entrance obligation for initiation or fear of stigmatization from HCPs through outreach. Illegal migrant FSWs, a prominent sub-group in the study catchment area, were also reticent of contact with the HCPs.

Conclusion: As Ghana prepares to introduce long-term injectable PrEP, understanding oral PrEP will mitigate PrEP adherence challenges. Focusing on components like policy and stigma may also lead to greater PrEP initiation. Policymakers in Ghana should act rapidly to guarantee that PrEP initiation is decentralized and de-medicalized in accordance with worldwide best practices. Addressing provider stigma and attitude towards KPs is key to influencing PrEP initiation and adherence. Together, these efforts could educate providers, reduce stigma towards KPs, and change prescription behaviors.

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Influence of Childhood Trauma on Sexual Orientation and HIV Risk Sexual Behavior Among Men Who Have Sex With Men in Nigeria

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Background: Men who have sex with men (MSM) are key population (KP) with a prevalence of 25% in Nigeria. Childhood trauma may increase the risk of HIV due to sexual behaviors among MSM and is influenced by Adverse Childhood Experiences (ACEs). Individuals who have experienced childhood trauma, like physical, mental or sexual abuse, may be more likely to engage in such behaviors. This study examines the influence of childhood trauma on HIV-risk sexual behaviors among MSM in Nigeria.

Material and Methods: This study utilized a cross-sectional design to gather data from 375 MSM above 18 years old from 6 Global Fund FHI 360 supported states in Northern (3) and Southern (3) Nigeria. Systematic sampling used to select MSM clients who visited the OSS between November 2022 to January 2023 were screened for ACE using a structured 10-item exposure checklist. Information on HIV risk behaviors and sexual orientation was collected using a PrEP eligibility screening form and Behavioral risk factor surveillance study (BRFSS) scale. Data was analyzed using chi-square and linear regression statistic.

Results: The study found that 69% (N=375) reported experiencing childhood trauma. The median age range was 25-34yrs 69% (259). Sexual orientation was assessed with a significant proportion 55.2% (N=207) reporting attraction to the same sex, 43.2% (n=162) to both sexes while 1.6% (n=6) reported being heterosexual but engage

in same sex for money after their first encounter of sexual abuse ($X^2 = 4.52$; $p = 0.000$). We observed a strong correlation between childhood trauma, specifically sexual abuse, and HIV risk behavior (r -value = 0.861, $p < 0.05$). Also, individuals with higher ACEs scores (70%) were more likely to engage in unsafe sexual practices, like not using condoms, low use of PrEP, substance use, and having multiple sexual partners. There was no significant difference between clients from Northern and Southern Nigeria ($t=0.983$, $p>0.05$).

Conclusion: Those who had experienced childhood trauma have higher odds of having high risk behaviors. Incorporating ACE exposure checklist during counseling may help identify individuals who might exhibit further highrisk behaviors, and help program teams to support them with necessary resources to prevent STIs and HIV.

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Outcomes of Patient Satisfaction Survey Among Key Populations on Antiretroviral Therapy (ART) in Four States in Nigeria

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Background: In contrast to an overall decline in HIV incidence among many groups, key populations (KP) still have high HIV incidence and remains a priority group for enhanced service delivery towards achieving and sustaining HIV epidemic control. This study sought to identify the level of satisfaction with HIV services provided to key populations accessing HIV treatment services.

Material and Methods: A cross sectional study conducted between March and April 2022 among

key populations (comprising of female sex workers, men who have sex with men, people who inject drugs) accessing ART services across four states in Nigeria (Rivers, Katsina, Nasarawa and Federal Capital Territory). Participants were selected using a simple random sampling. Information on the satisfaction with and barriers to HIV service delivery in the KP One-stop-shops (OSS) and community was obtained using a structured HIV patient satisfaction questionnaire administered via phone interviews by clinic support staff. Data was analysed by descriptive analysis.

Results: A total of 2550 clients who identify as members of key population were surveyed, with 1344 (52.7%), 876 (34.4%), 314 (12.3%) and 16 (0.6%) being FSW, MSM, PWID and transgender respectively. The mean age of respondents was 31.2 (SD 7.4) years. Overall, majority {2336/2550 (91.6%) and 2517/1550 (98.7%)} of the respondents accessing ART reported spending <1 hour and being satisfied with the healthcare services provided in the OSS/community respectively. 1056/2550 (41.4%) of respondents have never disclosed their status to anyone and the reasons reported included “no need for disclosure” (53.3%) and fear of stigma (42.8%). One-eight 330/2550 (12.9%) of respondents had interruption-in-treatment (IIT), of which 128/330 (38.8%) had repeated IIT. Client-reported reasons for IIT included travel; 135/330 (41%) and lack of transportation fare; 66/330 (20.1%). More than half; 189/330 (57.3%) of patients who had IIT reported having poor health status when they discontinued ART.

Conclusion: Key population of PLWHIV reported being satisfied with the quality of healthcare services received at the OSS/Community drop-in centers. However, this study also demonstrates a gap in partner disclosure and treatment retention. This highlights the need to devise patient-centered strategies that take into account the highly mobile nature of KPs and facilitate disclosure support.

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Impact of Incentivized Support Group Meetings in Enhancing ART Adherence Among Female Sex Workers in Nigeria: A Retrospective Study

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Background: Globally, the goal of antiretroviral therapy (ART) is to achieve viral suppression and positive outcomes among people living with HIV (PLHIV). To achieve this, optimal ART adherence must be encouraged. However, in resource-constrained settings like Nigeria, several challenges may contribute to poor adherence, including organizational and financial barriers, and stigma. This study aims to assess the impact of incentivized support in achieving optimal adherence.

Material and Methods: A retrospective analysis of data from female sex workers (FSW) receiving antiretroviral therapy in selected ART clinics in Nigeria where incentives were provided to support group meeting (SGM) attendees between May and November 2021 was conducted. Two cohorts were analyzed: FSW attending at least one SGM, and FSW with no attendance within the period. Adherence to ART was self-reported and defined as not missing a dose of ART within 30 days before data collection. Chi-squared test was used to determine the association between attendance and adherence.

Results: Overall, 413 FSWs were on ART during the study period, and their median (IQR) age was 26 years (21 – 32 years). Of them, 207 (50.1%) attended at least one SGM. 81% of clients who had at least a visit were taking their ART without missing a dose, with 98% reporting health education, and psychological and socioeconomic support as a reason for attendance and good ART adherence. 64% of those with no history of attendance recorded good adherence to their daily medication, with the majority (91.5%) reporting being socioeconomically stable.

Conclusion: Our study demonstrated an association between incentivized support and good ART adherence in FSW in Nigeria, highlighting the positive impact of psychological and socioeconomic support in the targeted groups of PLHIV. Putting more effort in holistic interventions is recommended to enhance adherence and mitigate existing barriers in resource-limited settings.

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Treatment Outcome Amongst PLHIV Accessing ART Care and Treatment in One-Stop-Shops vs Those in Health Facilities. Cross-Learning Opportunities Between Key Population and General Population Programs

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Background: In recent years, HIV programming has become specifically tailored to sexual orientation, resulting in key and general population-focused care and treatment interventions. This study seeks to access treatment outcomes amongst PLHIV accessing ART care and treatment in One-Stop-Shops vs those in health facilities and possible cross-learning opportunities between Key population and general population programs.

Material and Methods: This is a retrospective cohort study; Client level data abstraction was done from the National Medical Record system (NMRS) from the ECEWS SPEED project supported One-Stop-Shops that house the key population and health facilities for the general population in Ekiti and Osun states for comparative analytics. Chi-square was used to determine if the difference between the treatment outcomes and expected outcome for both groups is due to chance, or if it is due to a relationship between the variables (active and inactive) being studied.

Results: The TX_CURR for the key population is (4073) 4% MSM- 1242, FSW- 2353, PWID- 468, People in prison- 10, compared to the 96% of the TX_CURR in the general population. The active clients in the key population were observed to be more retained with only 5% defaulting and needed tracking giving a consistent $\geq 95\%$ CIT within a period of 2 years, hence leading to better treatment outcomes such as a 99.9% VL coverage with 100% suppression rate as against a 91% coverage and 94% suppression in the general population. Index elicitation from the KP has matched a 1:1 ratio while the general population was a 3:1 elicitation rate within the same time frame. HIV-related death recorded was zero compared to 102 HIV-related death cases in the general population.

Conclusion: Clients in the key population thrive better in terms of overall retention on treatment as against the clients in the general population across the states in review. The structure and systems of the KP programs enhance treatment outcomes and hold a lot of learning opportunities for the general population program.

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Retention in Care and Predictors of Attrition Among Key Populations Receiving Antiretroviral Treatment Through Community-Based ART Model in Benue State Nigeria: A Mixed Methods Analysis

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Background: Stigma affects access to antiretroviral treatment (ART) among key population living with HIV (KPLHIV). Key populations (KP) include female sex workers (FSW), men who have sex with men (MSM), transgender (TG) and persons who inject drugs (PWID). To overcome barriers to HIV

treatment, we implemented three different approaches to the delivery of community-based antiretroviral therapy (CBART) for KP in Benue State Nigeria. These approaches/models include One Stop Shop clinics (OSS), community drop-in-centers (DIC), and outreach venues. We studied long term attrition, facilitators, and barriers to retention in care in the CBART model.

Material and Methods: This is a mixed-method study of KPLHIV enrolled in the CBART model. The quantitative arm was a retrospective cohort study of KP receiving ART in OSS, DIC, and outreach venues. Attrition included lost to follow-up (LTFU) and death. Survival analysis was used to assess retention on ART and Cox regression was used to assess risk factors for attrition. Qualitative data consisted of 86 in-depth interviews with KPLHIV and 5 focus group discussions with healthcare workers (HCWs).

Results: Of 3495 KPLHIV initiated on ART in KP-CBART, 51.8% (n=1812) were enrolled in OSS, 28.1% (n=982) in DIC, and 20.1% (n=701) through outreach venues. The majority of participants were FSW - 54.2% (n=1896), while 29.8% (n=1040), 15.8% (n=551), and 0.2% (n=8) were MSM, PWID, and TG respectively. The overall retention in the programme was 63.5%, 55.4%, 51.2%, and 46.7% at 1 year, 2 years, 3 years, and 4 years on ART. Of 1650 with attrition, 2.5% (n=41) died and others were LTFU. MSM were at a higher risk of attrition (vs FSW; adjusted hazard ratio (aHR) 1.27; 95%CI: 1.14 – 1.42). Provision of ART in a safe place (privacy and confidentiality), trust in HCWs, KP community participation, short waiting time, and peer support were found to promote retention in care.

Conclusion: The study revealed the importance of individual and health service delivery contexts in managing HIV effectively. Long-term retention in care is still low in the CBART. To improve adherence and retention, there is need for more involvement of KPLHIV in HIV care, group-specific CBART model, and client-centered care.

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Multidimensional Approaches to Attain the Second and Third 95' of HIV Treatment Cascade for Key Population in Kilifi, Kenya ICRHK Stawisha Project

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Background: HIV in Kenya is characterized as a general epidemic with pockets of concentration among the Key population (KP) - Female Sex workers (FSWs), Men who have sex with Men (MSM), Transgender and People who use drugs. Adult HIV prevalence stands at 4.9% (KENPHIA, 2018), disproportionately affecting FSWs with a national prevalence of 29.3% (2011 IBBS). Kilifi county in Kenya has an HIV prevalence of 4.4% with a prevalence of viral load suppression (VLS) among all HIV-positive of 15-64 years in Kilifi is 46.9%-91.8%(KENPHIA, 2018), which is below the UNAIDS 2030 target of 95-95-95. HIV-positive KP has lower access to, uptake of, and retention on treatment than the general population, a fact partly attributable to their high-risk sexual behaviors.

Material and Methods: From October 2021 to August 2022 ICRHK employed a multidimensional approach to achieving 100% linkage to care, adherence to ART and achieving viral load suppression. The devised interventions were based on the unique client's needs to strengthen and optimize the uptake of HIV care and treatment. Peer Navigator and Psychosocial Support Groups were used in combination to ensure that HIV KPs are linked, adhere to ART and remain on Care to achieve viral suppression. Community-based Psychosocial support groups were also been used to improve adherence through the dissemination of Positive Health Dignity and Prevention (PHDP) intervention.

Results: ICRHK conducted a retrogressive facility-level data analysis of KPs data for October 2021 to August 2022 to determine trends of HIV positive Care and treatment among Key population sex

workers. 218 KPs tested HIV positive in the period (298 FSWs). All HIV-positive sex workers 100% (n=218/218) were linked to treatment. Out of the eligible FSWs for viral load testing, 57% of the KP were tested for Viral load. From the results, the overall viral suppression for all eligible viral load samples taken was 98% which is appointed above the National target of 95% (n=295/295).

Conclusion: A combination of multidimensional approaches in HIV treatment and care for the Key population to meet their different needs is effective for the KP program and fast tracks the process of elimination of HIV epidemic.

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Secondary Distribution of HIV Self-Test Kits From Males to Their Female Sexual Partners in Two Fishing Communities in Rural Uganda: Results From the PEST4MEN Pilot Study

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Background: Secondary distribution of HIV self-test kits has increased male partner HIV testing rates in most settings but little evidence exists on the distribution of HIV self-test kits from males to their female sexual partners.

Material and Methods: This analysis uses data from the ongoing PEer-led HIV Self-Testing intervention for MEN (PEST4MEN) in two fishing communities in central Uganda. At the baseline visit (July 2022), data were collected from 400 male fisherfolk, following recommendation from trained male volunteers or “peer-leaders” in the community. Men were enrolled into the study if they were 15+ years, self-reported a HIV-negative or unknown HIV status and had not tested for HIV 3+ months prior to enrolment. After enrolment, men were

requested to obtain two oral HIV self-test kits from their peer-leaders; one for themselves and the other for someone else. At the first follow-up visit (September 2022), we asked men about whom they gave the second kit to, whether or not the recipient self-tested for HIV and what, if known, their HIV self-test results were. Data were analyzed using STATA version 16.0.

Results: Of 361 men interviewed at follow-up, 98.3% (355) received at least one kit from their peer-leaders; 79.7% (283/355) received two kits. Of those that received two kits, 88.0% (181) gave the second kit to someone else; almost all potential recipients (97.8%, n=177) accepted the kits. Nearly three-quarters (74.6%, 132/177) gave the second kit to their primary/steady or other female sexual partners. Eighty-three per cent (147/177) reported that the person that they gave the second kit to used it to self-test for HIV. Of all self-testers, 8.2% (12/147) were reported to have tested HIV-positive; among female sexual partners, the HIV sero-positivity rate was 5.3% (7/132). Only 33.3% (4/12) of all the HIV-positive self-testers were reported to have linked to HIV care.

Conclusion: Secondary distribution of HIV self-test kits from males to their female sexual partners was well accepted and identified a significant proportion of HIV-positive self-testers. However, linkage to HIV care was sub-optimal, calling for innovative approaches to improve linkage to HIV care following secondary HIV self-test distribution in this setting.

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Reaching the Last Mile of HIV Epidemic Control in Zambia by Engaging Key Populations With Innovative Service Delivery Approaches

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Background: Zambia is nearing HIV epidemic control with progress towards UNAIDS goals at 89-98-97. However, this progress is not the same among key populations (KP) despite having a higher risk of acquiring HIV. KP access to health services is limited by criminalization, stigma, and discrimination. To bridge this gap, innovative approaches are needed to engage KPs. UMB-MGIC implemented community-based approaches by establishing KP safe spaces to provide comprehensive HIV services.

Material and Methods: Three KP Civil Society Organizations were sub-granted to implement this integrated differentiated services delivery (iDSD) model by establishing 13 safe spaces across three provinces. To provide non-discriminatory services, 240 clinicians and peer navigators were trained in KP sensitivity, safety, and security. Safe spaces were equipped to provide HIV testing, prevention, and treatment; and screening and treatment for STIs and TB. KP peer navigators trained as lay psychosocial counselors identified KP in communities, offered HIV educational messages, prevention, and testing, and link them to safe spaces for prevention and care services. We analyzed aggregated data from October 2021 to September 2022 on HIV services offered via iDSD.

Results: HIV combination prevention services were provided to 18,223 KP; 31% MSM, 61% FSW, 5% PWID, and 3% TG. Of these, 39% (7,143/18,223) were tested for HIV with 23% (1,642/7,143) testing HIV-positive (28% MSM, 68% FSW, 2% PWID and

2% TG); the positivity yield varied among KP sub-type from 13%-28%, and each subpopulation was reached using the testing modality that was best suited for them. In addition, over 3,177 KP self-tested, and 4,015 sexual and other contacts of KP living with HIV were elicited for HIV testing. Overall, 1,620 KPs have been linked to HIV treatment and 1,931 retained on HIV treatment. Of KP who tested negative for HIV, 2,417 were initiated on PrEP (38% MSM, 56% FSW, 3% PWID and 3% TG).

Conclusion: Partnership with KP CSOs and implementation of the iDSD model contributed to enhanced HIV case finding and reaching KPs who typically have limited access to HIV services. These approaches may offer an acceptable and sustainable healthcare model that bridges the gap for equitable access to healthcare for KPs.

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A Study to Assess How Discrimination Against the Key Population and Vulnerable Groups at Health Facilities Fuels New HIV Infection in Tanzania

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Background: Some key populations and vulnerable groups in Tanzania are not recognized by the law, and they are highly unacceptable in the community (religions, society, workplaces), such as (lesbians, gays, and bisexuals), resulting in discrimination in some sensitive fields or sectors, particularly in health facilities. As a result, some of their human rights are being infringed, such as access to medication and other social services. As a result, victims from those crucial demographic groups are fearful of seeking medical care from health facilities, leading to an increase in new HIV infections and related ailments in the community. In Tanzania's healthcare facilities, there have been multiple incidences of HIV stigma and LBGTQ discrimination, with some being denied access to crucial medical care. Despite the government's attempts to eliminate HIV-related stigma through a

number of programs, still there are new emerging HIV infections. This is because certain vulnerable and vital communities, such as LGBTQ persons, are not priorities.

Materials and Methods: A descriptive cross-sectional cohort was utilized, and the sample (respondents) were located in urban remote areas of the Key population and vulnerable groups. To avoid missing any information as they went from one place to another, the questionnaire was completed the same day it was presented and collected. Only 87 of the 100 people who received the questionnaire replied. The questions were created in a way that will help assess the level of prejudice and stigma in the neighborhood.

Results: The results revealed that 70% of the respondents suffered stigma from health facilities in various forms, such as being refused access to lubricants, using harsh remarks as some were viewed as against the law and faith, and being delayed in receiving ART prescriptions. In contrast, just 30% did not experience stigma from healthcare institutions, despite the fact that many of them received medical care from private healthcare facilities.

Conclusion: Further studies are required to comprehensively examine the prevalence, consequences, and potential countermeasures in relation to HIV-related stigma to the key and vulnerable population in the health sector, as well as their involvement in promoting new HIV infections.

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Mobile Units Improve HIV Testing, ART Initiation and Treatment Continuation Among Men Who Have Sex With Men in Nampula Province, Mozambique

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Background: Key populations (KP) have reduced access to HIV prevention and care and treatment (C&T) services in Mozambique. To improve access and outcomes among KP in Nampula, particularly men who have sex with men (MSM), ICAP worked closely with provincial health authorities (DPS/SPS) and KP-led community partners to implement community-based HIV prevention and C&T services.

Material and Methods: Since September 2020, ICAP has collaborated with DPS/SPS and the KP-led community organization Lambda, to offer community-based HIV prevention and C&T services integrated with general health services for MSM, through mobile units (MU). The MU teams provide services at geographic locations selected to reach KP, including KP venues in communities near 13 health facilities (HF) in 10 districts, and the Lambda office, where services are integrated with peer support and health literacy workshops. These locations are within catchment areas and data are reported through the HF. Lambda peer educators work within MSM groups and at gatherings to create demand and escort MSM clients to MU during day and night services.

Results: Between April-September 2021 and April-September 2022, there was a 41% (207/147) increase in HIV testing, a 62% (791/489) increase in case identification, a 73% (390/226) increase in antiretroviral therapy (ART) initiation and a 124% (2,627/1,174) increase in the number of MSM living with HIV currently receiving treatment through all service delivery models. During the same periods, the MU contribution to HF performance increased from 19% (94/489) to 38% (301/791) in HIV testing, 12% (18/147) to 27% (55/207) in case identification, 7% (16/226) to 25% (98/390) in ART initiation and 14% (163/1,174) to 21% (562/2,627) in treatment continuation.

Conclusion: Adapting service delivery models to respond to clients' needs and bring services closer to them is essential to reach KP. Implementing MU at the community level improved access to health services for MSM in Nampula. The involvement of

KP-led organizations is essential to understand needs and preferences, support service design, and create demand for services.

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Empowering Women: A Logistic Regression Analysis to Identify Factors Associated With HIV Treatment Continuity Among Female Sex Workers in Ghana

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Background: HIV treatment continuity among female sex workers (FSWs) in Sub-Saharan Africa is generally low with figures ranging from 38% to 73%. Contributing factors include limited access to treatment, food insecurity, lack of intimate partner support, low trust in health care providers, and substance use. The study aims to assess other factors associated with HIV treatment continuity among FSWs in Ghana.

Material and Methods: Secondary data on FSWs obtained from national DHIS2 HIV database was analyzed using Stata 10. We extracted 647 FSWs ever-initiated on treatment in the three PEPFAR-supported regions. A binary logistic regression analysis was conducted between the outcome variable (treatment continuity) and other covariates: age, education level, marital status, treatment regimen, facility type and multi-month dispensing (MMD). Statistically significant variables were included in final model.

Results: The mean age of FSW was 36 years, 32% (205) had no education, 51% (329) were single and 26% (171) married. A total of 524 (81%) FSWs initiated HIV treatment at hospital compared to 113 (17.5%) at health centre; 54% (352) were on MMD and treatment continuity was estimated to be

45.4% (294). Age, MMD and treatment regimen were significantly associated with treatment continuity. A one-year increase in age resulted in 1.1 times likelihood of staying in treatment (AoR=1.1, CI=1.0-1.1, p<0.001). FSWs who were on MMD were 7.2 times more likely to adhere compared to those on single month dispensation (AoR=7.2, CI=5.0-10.7, p<0.001). Clients on DTG-based regimens were 17 times more likely to adhere compare to those on EFV-based regimens (AoR=17.0, CI=6.5-44.4, p<0.001).

Conclusion: This study found that factors significantly associated with HIV treatment continuity among FSW in selected regions of Ghana include age, treatment regimen, and MMD. Marital status was not associated with treatment continuity. These results suggest that person-centered care approaches focusing on younger FSW, providing MMD options, and promoting DTG-based treatment regimens may help improve continuity to HIV treatment among FSWs.

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Exploring the Barriers to HIV Treatment Continuity Among MSMs in Ghana

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Background: Men who have sex with men (MSM) are disproportionately affected by HIV and often face decreased access to HIV prevention and care services due to stigma and discrimination, particular in criminalized environments such as Ghana. In this context, this study aims to identify predictive factors of ART adherence among MSM to scale up supportive interventions.

Material and Methods: Secondary data was extracted from the national HIV database from three PEPFAR-supported regions. A total of 647 MSM with complete data were used in the analysis. A binary logistic regression analysis was conducted between the outcome variable (treatment continuation) and other covariates: age, education

level, marital status, treatment regimen, facility type, and whether a client was on Multi-Month Scripting and dispensing (MMSD). Only variables that were statistically significant were included in the final simultaneous logistic regression model.

Results: With regard to respondent characteristics, 89% had been initiated on ART at hospitals and 11% at health centers. The mean age was 36 years, and 15% had no formal education. Nearly 70% of the MSM were single with 24% married. More than half (53%) of the MSM continuing ART were on multi-month dispensing (MMSD). Age, marital status, treatment regimen, and MMSD were associated with treatment continuation and were included in the final regression model. From the results, a one-year increase in age resulted in 1.0 times likelihood of staying in treatment (AoR=1.1, CI=1.0-2.1, $p<0.001$). Married MSM were 1.9 times more likely to adhere to treatment (AoR=1.9, CI=1.2-3.0, $p<0.001$) than singles. MSM on MMSD were 4.4 times more likely to continue HIV treatment compared to those in single-month dispensing (AoR=4.4, CI=3.0-7.0, $p<0.001$). Clients on DTG-based regimens were 37 times more likely to adhere to treatment compared to those on EFV-based (AoR=37.0, CI=65.0-269, $p<0.001$).

Conclusion: The study found that age, marital status, treatment regiment, and duration of treatment (MMD) were all significantly associated with ART continuation among MSM in selected regions of Ghana. Specifically, MMD and DTG-based treatment regimens were highly correlated with ART continuation and interventions to scale up MMD and accelerate access to enhanced regimens may help improve ART continuation among MSM.

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Initial Programme Theory for Community-Based ART Delivery for Key Populations in Benue State, Nigeria: A Realist Evaluation Study

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Background: The community-based antiretroviral therapy delivery (CBART) model was implemented in Benue State in Nigeria to increase access of key populations living with HIV (KPLHIV) to antiretroviral treatment. Key populations (KP) are female sex workers, men who have sex with men, persons who inject drugs, and transgender people. Evidence shows that the CBART model for KP (KP-CBART) can improve HIV outcomes along the cascade of HIV care and treatment in sub-Saharan Africa. However, it is unclear how KP-CBART works, for whom, why, and under what circumstances it generates specific outcomes. Therefore, the aim of this study is to identify the initial programme theory (IPT) of the KP-CBART in Benue State using a realist approach.

Material and Methods: The study design is exploratory and qualitative, exploring the implementation of KP-CBART. We reviewed the intervention logic framework & guidelines for the KP-CBART in Nigeria, conducted a desk review of KP-CBART in Sub-Saharan Africa (SSA), and interviewed programme managers in the Benue HIV programme between November 2021 and April 2022. Findings were synthesized using the Context-Mechanism-Outcome (CMO) heuristic tool to explain the relationship between the different types of CBART models, contextual factors, actors, mechanisms, and outcomes. Using a generative causality logic (retroduction and abduction), we developed, following a realist approach, CMO configurations (CMOc), summarized as an empirically testable IPT.

Results: We developed 7 CMOc and an IPT of the KP-CBART. Where KPLHIV receive ART in a safe place while living in a setting of punitive laws, harassment, stigma, and discrimination, KP will adhere to treatment and be retained in care because they feel safe and trust the healthcare providers. Where KPLHIV are involved in the design, planning, and implementation of HIV services; medication adherence and retention in care will improve because KP clients perceive HIV services to be KP-friendly and participate in KP-CBART.

Conclusion: Implementing the CBART model where KPLHIV feels safe, trusts healthcare providers, and participates in HIV service delivery can improve medication adherence and retention in care. This programme hypothesis will be tested and refined in the next phase of the realist evaluation of KP-CBART.

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Integrating Peer-led Problem-Solving Therapy With HIV Prevention and Treatment to Address Mental Health Issues Among Key Populations: Lessons From a Pilot Project in Harare, Zimbabwe

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Background: Mental health has been neglected in Sub-Saharan Africa, especially among Key Populations (KPs). KPs include female sex workers (FSW), men who have sex with men (MSM), people who inject drugs (PWID) and transgender (TG) and are at high risk for HIV acquisition. KPs experience significant stigma and discrimination, including in health facilities. This puts them at greater risk of undiagnosed common mental disorders and high risk of being excluded from the HIV prevention, treatment and care continuum. A community-based peer-led Problem-Solving Therapy (PST) was implemented among KPs in Harare.

Material and Methods: Between January and September 2022, 30 Community Facilitators (CFs) including FSWs, MSM and TG peer lay cadres were trained to screen for common mental disorders (CMDs) and provide counselling to fellow KPs using the Friendship Bench model. Trained CFs used the

Shona Symptom Questionnaire (SSQ-14) to screen KPs for CMDs during HIV prevention literacy sessions in communities across 9 learning sites. Those who scored SSQ ≥ 9 were offered PST and referred if there was need. Those who answered yes to either the question on hallucinations or on suicide (red flags) were immediately referred to nurses at facilities. Data were captured in a database and feedback from supervision meetings informed and strengthened continued implementation.

Results: 295 KPs were screened for CMDs using the SSQ-14. 180 KPs were offered PST and 73 returned for session 2, 27 returned for session 3, 12 returned for session 4 and 3 returned for session 5. 28 KPs were red flags, however only 10 were successfully referred to nurses at respective facilities.

Conclusion: CFs embraced PST despite time demands that accompany integration of mental health into HIV prevention and treatment. KPs with red flags were not comfortable being referred outside their KP community, fearing stigma. The number of KPs returning after the first session dropped. Strengthened KP friendly referral structures could increase the effectiveness of referrals. Integrating mental health care in HIV prevention, care and treatment interventions for KPs could help deliver effective and affordable solutions to bridge the mental health treatment gap, leading to improved health outcomes.

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Men's Engagement in Transactional Sex and HIV Testing: An Exploratory Analysis Using the South Africa Demographic Health Survey

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Background: Despite significant advances in HIV prevention therapies such as PrEP, HIV remains one of the world's most challenging global health issues. Although men accounted for only 38% of people

living with HIV in Africa, they comprised 57% of the AIDS-related deaths. Few studies have examined the impact of men's engagement in transactional sex on uptake of HIV screening.

Material and Methods: Utilizing the 2016 South Africa Demographic Health Survey (N=3,618), we assessed the effect of men's engagement in transactional sex on HIV screening among South African men ages 15-59 years.

Results: The majority of the sample was between the ages 15-24 years with a mean age of 31.9 years (SD=0.21), 87% identified as Black/African and 62% were single. Only 13% reported having insurance, 44% were poorest/poor on a wealth index and the vast majority 70.4% had a secondary education. Approximately 6% of the sample indicated they had either paid for or given gifts in exchange for sex. We found older age to be statistically associated with higher likelihood of HIV screening -- Ages 25-34 years (O.R. 1.68, C.I. 1.24-2.37 p. value 0.001) and Ages 35-49 years (O.R. 1.80, C.I. 1.25-2.60, p. value 0.002) and Ages 50-59 years (O.R. 3.86, C.I. 1.52-6.20 p. value 0.036). Compared to Black/African respondents, White (O.R. 0.18, C.I. 0.07-0.48, p. value 0.001), Coloured (O.R. 0.55, C.I. 0.33-0.91, p. value 0.02) and Indian/Asian (O.R. 0.11, C.I. 0.04-0.36, p. value 0.000) respondents were less likely to have ever taken a HIV test. Respondents with primary education or above were more likely to screen for HIV (O.R. 2.31, C.I. 1.39-3.83, p. value 0.001). Also, those who used a condom were more likely to get tested (O.R. 1.48, C.I. 1.18-1.99, p. value 0.010). There was no association between men's engagement in transactional sex and uptake of HIV testing.

Conclusion: Men's engagement in the HIV continuum is critical to achieving the UNAIDS goal of 95-95-95 by 2030. This study revealed continued investments among adolescent and young adult men are needed to address the social and structural factors create barriers for uptake of HIV screening for poor and marginalized male populations.

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“Door to Door Would Be the Best Way”: A Qualitative Analysis of Peer Delivered Combination Prevention for Transgender Women in Uganda

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Background: Transgender women (TGW) have high HIV risk but low engagement in care. Peer delivery is an effective strategy for increasing HIV and sexually transmitted infection (STI) testing, but it has not been evaluated for TGW in Uganda.

Material and Methods: We conducted formative research for a randomized trial of peer delivered HIV self-testing (HIVST), STI self-sampling and oral pre-exposure prophylaxis (PrEP) for TGW in Uganda (NCT04328025) between October 2019 and April 2020. Twenty in-depth interviews with TGW peers explored (a) barriers and facilitators of peer delivered combination HIV prevention, and (b) preferences for HIV/STI testing approaches and PrEP refills. Interviews were conducted in Luganda (local language) at a location convenient for the interviewee. They were audio recorded and transcribed verbatim to English by the interviewer. We used an inductive content analytic approach centering on descriptive category development to analyze the data and identify themes representing TGW preferences for HIV prevention delivery.

Results: Four key themes that explain TGW preferences within a peer delivery system emerged from the qualitative data: (1) Peer training. TGW peers needed to be knowledgeable about the use and interpretation of HIV self-tests, PrEP adherence counseling and the correct way to self-collect samples for STI testing; (2) Confidentiality. Trust in peers to keep personal health information private was essential for successful delivery of HIV self-

tests and PrEP refills, and for returning self-collected STI samples for laboratory testing; (3) Trans-friendly care. TGW peers and transgendered drop-in-centers were perceived to be the most effective ways of distributing HIVST and PrEP refills and improving access to STI testing; (4) Stigma reduction. Peer delivered HIV services were seen as desirable because they would enable TGW to avoid stigma and discrimination experienced at health facilities from providers and other clients. Overall, the desired peer attributes for facilitating HIV/STI testing and PrEP use were confidentiality, trustworthiness, and practical knowledge of biomedical HIV prevention tools.

Conclusion: Peer delivery and trans-friendly care may help to overcome barriers to HIV/STI testing and PrEP use among TGW. Community-based strategies such as peer delivery and drop-in-centers may improve testing and PrEP outcomes and decrease HIV burden in this population.

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MSM Could Be the Ideal Health Facilitators to Help MSM to Access PrEP

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Background: In South Africa, men who have sex with men (MSM) have a disproportionate burden of infection with an estimated HIV prevalence of 48%. However, only 41% of MSM know their status, and 28% are on ART, and of those 27% are virally suppressed. By comparison, 89% of men living with HIV in South Africa knew their HIV status, of whom 66% were on treatment. Of those, 79% had an undetectable viral load, highlighting a fundamental gap in HIV services uptake among MSM and men in the general population. Highlighting a key gap in HIV services uptake among MSM and men in the general population. The study aims to increase uptake and effective use of HIV prevention, testing, and treatment among MSM by understanding their barriers to accessing healthcare services.

Material and Methods: Between May and August 2021, we conducted 42 IDIs with MSM in KwaZulu-

Natal, South Africa using a human centred design approach that sought to learn more about the participant's experience with the healthcare system. Participants were sampled using nonprobability techniques such as snowball, purposive and convenience sampling.

Results: The analysis revealed that men also reported that extensive screening and invasive questions discouraged them from accessing STI services and HIV prevention services such as PrEP, 'I went to look for PrEP, and then they started asking me questions; "Are you having sex? What type of people are you having sex with?"', and all that. So, those things were personal to me'. These experiences contribute to men being clinic averse. However, findings confirmed that a true peer (Coach Mpilo) has great potential to improve service access for MSM because they would be understanding and sensitise staff and ultimately bridge the gap between MSM and the healthcare system.

Conclusion: A peer-led support approach is proven to be successful in the MSM health environment. Coach Mpilo introduces health services to the people who are the least likely and most averse to visiting clinics; especially non-disclosed MSM. Our pilot results indicate that MSM could be the ideal health facilitators to help MSM to access PrEP by bridging the gap between MSM and healthcare providers.

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Offering Online HIV Services to Key Populations: Case of the EpiC Project of the NGO SOUTOURA in Mali

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Background: In Mali, SOUTOURA is implementing the USAID and PEPFAR-funded EpiC Project that supports HIV prevention and treatment services to key populations including female sex workers (FSW) and men who have sex with men (MSM).

SOUTOURA, with technical assistance from FHI360, uses online peer education and an online booking application to reach MSM and FSWs not reached by traditional outreach approaches in order to refer them to offline services.

Material and Methods: Between May 2020 and September 2021 Soutoura conducted online outreach and service promotion using posters, images, videos, and messages on social media platforms and instant messaging apps. Trained online peer educators helped clients take risk assessments and book HIV service using Ibadon, Mali's Online Reservation and Case Management app (ORA). The platform is available in French and Bambara and includes oral functions to facilitate use. The app helps clients decide on service needs using an online risk assessment, screens for COVID-19 risk, and facilitates HIV service booking in three regions (Bamako, Sikasso, and Ségou). For HIV-positive clients, the system facilitates index testing and partner referral. Data visualizations produced by Ibadon allow the program to track the HIV cascade from number of risk assessment to bookings, arrivals, HIV test results, and ART or PrEP uptake.

Results: Online peer outreach was effective for reaching higher risk MSM and FSWs. Between May 2020 and September 2021, 57% of users were MSM and 12% were FSW. With an average age of 26 years, HIV case finding for online clients was 31% and 38% among MSM and FSW reached, respectively. Overall case finding among online clients was 30% compared to an overall program case finding rate of 9%.

Conclusion: Targeted outreach through online platforms used by target populations is an effective way to engage younger, higher risk population members as compared to traditional outreach approaches. Next steps include intensified promotion of Ibadon on social media networks and using influencers to reach more target population members.

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Using Audio Computer-Assisted Self-Interviews to Increase Access to Mental Health and Substance Abuse Interventions to Reduce HIV Vulnerability in Young Adult MSM and Transgender Women Cohort Study in Kenya

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Background: Globally MSM and Transgender women continue to experience higher HIV incidence. These have been attributed to 'syndemics' which include substance and alcohol abuse, lack of access to prevention services due to Homophobia by society and unfriendly health care providers. Some studies document uses of ACASI in behavioural studies due to its potential in eliminating social desirability bias. Objectives: 1. Explore the use of ACASI as a tool in eliciting HIV risk behaviours and other mental health, substance use vulnerabilities in MSM and Transgender women. 2. Use data to offer needed interventions for any identified risks.

Material and Methods: MSM and TGW enrolled in a prospective, multicenter cohort study at four sites in Kenya (Kisumu, Nairobi, Mtwapa, and Malindi) were followed quarterly for HIV testing, risk reduction counselling and PrEP refill as per the National guidelines from 2019 to 2022 December. ACASI in form of a consensus questionnaire was used to assess individual HIV risk behaviors and vulnerabilities. Monthly ACASI data on self-reported risks, was computed and shared monthly to inform intervention.

Results: 265 client quarterly data were analysed with 31% reporting no challenge, 48% reporting mild depression, 9% had ongoing drug abuse, 6% reported needing single counselling, 3% reporting

need for alcohol counselling and referral respectively. 1% clients experienced substance abuse-related adverse events.

Conclusion: ACASI helped clients self-report health challenges, (48%) mild depression, ongoing drug abuse and alcohol, including the need for referral to specialized care. ACASI data helped with face-to-face interventions to address identified challenges. Two serious adverse events occasioned by alcohol or substance occurred. This underscores the need for innovative ways to identify challenges among MSM and TGW populations. We recommend more studies to compare the efficacy of this intervention with other interventions. We recommend ACASI use in exploring hidden behaviors for health interventions, especially where face-to-face interviews may present bias or hinder full exposure.

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Exploring the Mental Health Experiences and Perceived Social and Sexual Risks Among Female Sex Workers in Nairobi, Kenya

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Background: Female sex workers in Kenya are at an increased risk of HIV infection, violence, poverty and harmful alcohol and other substance use, which are all linked to poor mental health and suicidal ideation/behaviours. Negative life events and psychological distress often precipitate entry into sex work. There has been limited qualitative research investigating the mental health experiences of female sex workers in Kenya. In this

study we examine female sex workers' mental health experiences and perceived social and sexual risk factors over their life course.

Material and Methods: We randomly selected 40 female sex workers enrolled in a longitudinal study in Nairobi, for baseline in-depth semi-structured interviews. Participants were asked to detail their life stories, including narrating specific events such as entry into sex work, HIV testing and diagnoses, experiences of violence, mental health, alcohol use etc. Interviews were recorded, transcribed and translated. Data were coded thematically using the Hierarchical Conceptual Framework to explore risk factors for mental health and suicidal ideation/behaviours.

Results: Based on the women's personal and second-hand experiences, they related mental health to stress, depression and suicide. A few believed in the supernatural causes of mental health problems like witchcraft. Structural factors such as low levels of education, poor job opportunities, the lack of family support, harmful gender norms, intimate partner violence and subsequent relationship breakdowns, and family bereavement all contributed to poor mental health and subsequent entry into sex work. Their entry into sex work was despite the recognised risk of HIV for example, even though the majority were HIV negative when they started. The consequences of sex work such as sexual risks, concern about HIV acquisition, ongoing violence from police and clients, all exacerbated their poor mental health.

Conclusion: There is a need for both micro- and macro interventions to address poverty and gender-based violence among vulnerable women in Kenya, thereby reducing mental health problems, entry into sex work and risk of HIV acquisition. FSW programmes should include health promotion and screening for mental health problems to increase health seeking behaviour and access to services for FSWs.

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Establishing a Cohort at High Risk of HIV Infection in Western Kenya: Challenges and Experiences of the RV 393 HIV Incidence Study

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Background: Prospective cohort studies have helped advance HIV prevention, care, and treatment approaches. However, they can be expensive and complex. We describe the baseline characteristics, challenges, and experiences in establishing a cohort of individuals at risk for HIV in Kenya.

Material and Methods: Between January 2017 and May 2018, a cohort of men and women aged 18-35 years was established for an HIV incidence study in Kombewa, Kenya. Participants were identified through peer outreach, and community mobilization. The cohort was followed every 3 months for 2 years with medical history, physical examination, and laboratory tests including HIV sequential rapid testing, PCR-based testing of urine for gonorrhea and chlamydia, molecular tests of cervical swabs for human papilloma virus (HPV) and serological tests for Hepatitis B. Risk reduction counselling and male condoms were provided. HIV risk behavior was assessed via questionnaire every 6 months.

Results: After screening 1072 participants, a cohort of 619 adults without HIV was established of which males were 341 (55.1%), the median age was 24.8 years (interquartile range 21,28), and 400 (64.6%) were single. The fisherfolk were 117 (18.9%), self-reported sex workers were 139 (22.5%) and 444 (71.8%) reported history of transactional sex. The HIV prevalence at screening was 18.6% of which 78 (39.8%) were newly diagnosed at screening. For laboratory tests, 45 (7.3%) had chlamydia, 11 (1.8%) had gonorrhea, 28 (4.5%) had hepatitis B and

85(13.7%) had HPV. Most men, 260(76.2%) had undergone circumcision. Majority, 594 (96.0%) were willing to participate in future HIV vaccine trials. The retention rate was 88% and the HIV incidence rate was 9.84 cases per 1000 person-years. Challenges experienced include high mobility especially for sex workers, frequent changes in contact information, married sex workers missing visits when partners are around, confidentiality within peer network, fear of authorities, and COVID-19 pandemic.

Conclusion: We demonstrated the feasibility of establishing an HIV incidence cohort in a resource-limited setting and established a platform for studying other infectious diseases. Our experience elucidated barriers to retention of groups at risk for HIV and provided lessons to facilitate establishment of similar cohorts for prevention and vaccine research.

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Characterization of Clients on MAT in Kenya

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Background: Medically Assisted Therapy (MAT) has been found to reduce infectious diseases, drug-related deaths, criminality and improve physical and psychosocial well-being of the users. Individuals enrolled in the MAT program is increasing, but we do not fully understand the social demographic characteristics of individuals inducted for MAT. Patient characteristics have been found to have significant associations with treatment outcomes provided by the service providers. Yet this understanding of how patient profiles affect or influence service utilization is lacking in the MAT program in Kenya. step towards filling this gap is to present a detailed characterization of clients on MAT in Mombasa.

Material and Methods: We conducted a retrospective analysis of longitudinally programmatic data at Kisauni MAT clinic between September 2015 and December 2022. Socio-demographic and clinical data were collected during client induction into MAT and during routine

follow-up clinic visits using standard Ministry of Health data collection forms. Means, standard deviation, frequencies and percentages were used for descriptive analyses of the client's data to determine the client's profile.

Results: 1241 MAT clients analyzed females were 13% (159), aged 50 years and above were 5.5% (69), primary education was most reported at 77% (965) while university degrees were less than 1% (6). Islamic religion 69% (862), and 15% were referred to the MAT clinic for induction using other means and not CSO. Cannabis was the second most abused drug 78% (967) after Heroin 99.9% (1240), and approximately 21% of clients were receiving methadone doses of less than 60 mg/day.

Conclusion: Heroin remains the most drug of abuse followed by cannabis with a quarter of the clients receiving below the recommended doses of less than 60 mg/day. While 58% of MAT clients have been in MAT program for more than three years, an indicator is likely to improve treatment outcomes. Understanding socio-demographic characteristics are central to the development of supportive interventions that enhance retention.

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'We Could Easily Get HIV Infection Here': The Voice of Incarcerated Young People in Malawi's Semi-urban Prisons

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Background: People incarcerated in Malawi's detention facilities face a lot of problems. The most common challenges are overcrowding, poor sanitation, and lack of access to basic needs such as adequate food, bedding, clothing, security, and health care. In addition, young people are vulnerable to sexual abuse.

Material and Methods: A qualitative approach using an exploratory study design was used to explore the experiences of incarcerated young

people in semi-urban prisons. Ethical approval for the study was obtained from Malawi's National Health Science Research Committee. Two focus group discussions (FGD) were conducted; involving six young incarcerated people aged 18 in each group. Focused groups followed a semi-structured interview guide; data was analyzed using thematic analysis.

Results: The following four themes emerged from the data: prisoner-on-prisoner sexual violence; the need for communication regarding sexual violence; trauma associated with incarceration; and youth surviving prison life. The young incarcerated people reported being given incentives such as extra food and adequate sleeping space in exchange for sexual favors with adult incarcerated people or individuals with leadership roles. The sexually abused victims have had some difficulties in reporting the incidences due to a non-existent reporting system for such matters to prison authorities.

Conclusion: This study reveals that the prison environment in Malawi is unsafe, particularly for young incarcerated people who are at an increased risk of being victims of sexual violence. The young people reported being more likely to be sexually abused when accommodated together with adult prisoners. Unfortunately, the perpetrators of sexual abuse are typically incarcerated adults in supervisory roles. Therefore, young people need special protection in prisons. We recommend that the youths should be separated from adults according to the United Nations Office on Drugs and Crime (UNODC) recommendations. The correction officers should prevent the young inmates from having sight or physical contact with adult incarcerated people while in housing units. We further recommend that prisons establish systems where abused inmates can report abuse without fear of retribution.

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Preferences for HIV Self-Testing and Linkage to HIV Care Among Men in Two Fishing Communities in Rural Uganda

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Background: As HIV self-testing gets scaled up across countries and populations, there is a need to understand how best to reach population sub-groups that are usually hard to reach, including residents of fishing communities. We assessed preferences for HIV self-testing and linkage to HIV care among male fisherfolk in rural Uganda.

Material and Methods: We used data from the baseline visit of the ongoing PEer-led HIV Self-Testing intervention for MEN (PEST4MEN). The PEST4MEN intervention is currently being implemented in two fishing communities in Kalangala and Buvuma districts in central Uganda. To be eligible for the study, men had to be HIV-negative or of unknown status, and last tested for HIV 3+ months from the time of enrolment. Data were collected about willingness to self-test for HIV; where, how and from whom to obtain HIV self-test kits, willingness to go for confirmatory HIV testing in case of an HIV-positive self-test result, and where men preferred to obtain their first antiretroviral therapy (ART) dose in case of an HIV-positive self-test result. Data were analyzed using Stata version 16.0.

Results: Out of the 400 men interviewed at baseline, 99% (n=396) were willing to self-test for HIV. Almost all men (99.5%, n=394) preferred to pick HIV self-test kits from trained community-based distributors. More than half of the men (51.5%, n=203) preferred unsupervised to supervised HIV self-testing. Ninety-five per cent of the men (380) were willing to go for confirmatory HIV testing if they received an HIV-positive self-test result, and 90% (n=360) were willing to start ART immediately after a confirmed HIV-positive result.

If they tested HIV-positive, 76.1% (302) of the men would prefer to obtain their first ART dose from a health facility.

Conclusion: We found a high preference for community-based HIV self-testing coupled with a high willingness for confirmatory HIV testing and health facility-based linkage to HIV care among male fisherfolk in this setting. These findings have implications for the design and implementation of HIV self-testing interventions in the fishing communities.

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Subtypes of the Human Immunodeficiency Virus Circulating in Professional Sex Workers Community: A Different Epidemiology

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Background: HIV-1 has a genetic diversity that is very complex. Professional Sex Workers (PSW) have always been considered as a key population for Sexually Transmitted Infections around the world. They are often incriminated for transporting and introducing cosmopolitan subtypes into populations. Objective: The objective of this review was to present the different strains of Human Immunodeficiency Virus type 1 (HIV-1) which circulate in the population of Professional Sex Workers in Kinshasa, Democratic Republic of the Congo (DRC) and their evolution.

Material and Methods: Various publications related to the identification of the different variants of HIV-1 among PSW in Kinshasa-DRC were the subject of this literature review. The research for these different works on the different variants of type 1 HIV was done on the internet from websites using specific keywords. The search was limited to published work and abstracts presented from 2000 to date. The manuscripts were selected according to the relevance of the methodology, the results as well as the representativeness of the samples. The socio-demographic information of the populations

studied, the measurement methods and the objectives were taken into account in the evaluation of the articles.

Results: From 2000 to 2021, 2 works were documented carried out specifically on the PSWs for Kinshasa-DRC meeting the various selection criteria. In 2012, according to the IBBS, subtype A was dominant with 4 PSWs (30.8%), followed by subtypes G with 2 PSWs (15.4%) and C with 1 PSW (7.7%). In 2014, according to Kamangu NE et al., the dominant subtype was K in 5 patients (25%), followed by subtypes A and G in 3 patients each (15%) and C in 2 patients (10%).

Conclusion: It emerges from this work that this key population is a group with complex and special epidemiology. The prevalence of wild subtypes has been declining over the years while recombinant subtypes are on the rise.

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Social Work Contribution to Gender-Affirming Primary Health Care Services

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Background: Country investments in health care for transgender communities has historically focused on HIV prevention and treatment services. Yet gender-affirming hormone therapy is the most sought-after service amongst transgender people visiting primary health care clinics. Structural factors such as stigma, discrimination, and human rights violations not only create barriers to transgender people accessing health services, but impede continuity in health care, including achievement and maintenance of HIV viral load suppression. Interventions to address these issues fall within the social work scope of practice. To render donor-funded models of care which are more responsive to the comprehensive needs of transgender people, Wits RHI introduced social work services into four nurse-driven United States Agency for International Development-funded clinics across South Africa in 2020.

Material and Methods: A social worker on staff at each site provides individual, small group, and community interventions to address psychosocial and structural stressors impacting access to and retention in HIV care. Services include support for the informed consent process to initiate hormone therapy; facilitation of gender marker change applications; motivational counselling to support uptake and retention in HIV testing, prevention, and treatment services; and brief solutions-focused mental health counselling.

Results: Between January-December 2022, 240 transgender people accepted social work services. Presenting issues ranged from gender identity to substance abuse, housing, access to social grants, and relationship difficulties. Since social work services were implemented at the four sites, viral load suppression amongst transgender clients increased from 76% to 89% at transgender sites.

Conclusion: Social work interventions enhance the responsiveness of primary health care services to the expressed needs of transgender people. Increased country investment in complementary social work services in HIV service delivery platforms can enhance health outcomes.

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Risk Network Referral and Enhanced Peer Outreach Approach (Social Network Strategy): HIV Case Identification Strategy for Female Sex Workers in Kilifi County - ICRHK Key Population Program

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Background: Female sex workers (FSWs) remain disproportionately affected by HIV, with a prevalence estimate of 45.1% among FSWs in Kilifi as compared to 2.3% among the general

population in Kilifi counties respectively. The National HIV program objective is to have 95% of Kenyans know their status, however, only over 79.5% of Kenyans living with HIV are aware of HIV status which is detrimental to HIV prevention, care and treatment. ICRHK implemented Risk Network Referral (RNR) a strategy that systematically facilitates referrals from HIV-positive FSW to their social network with a High risk of HIV/STI infection for HIV testing services and connects HIV-negative peers to services that will help them remain negative. ICRHK also implemented EPOA, an innovation that uses performance-based incentives and works through social and sexual networks to improve HIV case-finding outcomes.

Material and Methods: ICRHK conducted a retrogressive data analysis of Key population data for 3 years (2020 to 2022). We analyzed facility-level HIV Data to determine trends of HIV positive Case identification among female sex workers. This data was compared to different models of HIV testing both at the outreach and static sites. Risk network Referrals (RNR) and EPOA as part of the Social Network Strategy (SNS) were analyzed comparatively against conventional key population HIV testing at the static and outreach sites.

Results: They analysis showed that RNR and EPOA produce high HIV positivity rates of case identification among female sex workers in Kilifi County as compared to outreach and static HIV testing methods. Kilifi County a total of 4644 tests were done among FSWs between October 2019 and June 2022. Among those done through EPOA (1146), 8% turned positive. Out of 2229 tests done through RNR, 169(8%) turned positive while 2% of the through conventional outreach tests turned positive.

Conclusion: To achieve UNAIDS 2030 target, there's a need to scale effective HIV services with high impact. s. With the ongoing dynamic change of HIV programming for Key populations, it is prudent that key population implementers adopt high-impact strategies that are sustainable and cost-effective.

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Abstract 626 was withdrawn.

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HIV Prevention Among Men Who Have Sex With Men in Southwestern Nigeria: Hunger, Unprotected Sex and Associated Factors

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Background: HIV infection disproportionately affects key populations in many countries of sub-Saharan Africa, including Nigeria. Men who have sex with men (MSM) have a higher prevalence of infection compared to the general population in Nigeria. Several factors influence the spread of infection among key populations including unsafe sexual practices and social disadvantage. This study therefore assessed prevalence and factors associated with unprotected anal sex (bare-backing) among MSM in southwest Nigeria.

Material and Methods: A descriptive cross-sectional study was carried out among 205 consenting young MSM from three representative states (Lagos, Ogun, and Oyo) in southwestern Nigeria. Participants were selected via snowball sampling, with the aid of community influencers. Data collection was done using a validated, semi-structured, interviewer-administered questionnaire and analysis carried out using SPSS 25.0. Frequencies, proportions, means and standard deviations were calculated. Association between categorical variables was determined using chi square test, with $p < 0.05$. Logistic regression was used to determine predictors of unprotected anal sex. Strict confidentiality was ensured.

Results: The mean age of respondents was 24.7 ± 4.4 years. Majority (74.6%) identified as men; 89.8% were single. Many (50.2%) had suicidal ideation in the preceding month; 63.9% engaged in unprotected anal sex with casual partners; 49.8% had experienced hunger. Bare-backing was associated with age ($p=0.039$); physical violence ($p < 0.001$); recreational drug use ($p=0.012$); heavy

drinking ($p < 0.001$); drug dependence ($p = 0.019$); transactional sex ($p < 0.001$); victim of bullying ($p < 0.001$); family/social support ($p = 0.027$). The only predictor of bare-backing found was a recent experience of bullying. Hunger, suicidal ideation, educational status, marital status, gender identity were not associated ($p > 0.05$) with unprotected sex.

Conclusion: The prevalence of bare-backing was high among MSM in southwest Nigeria with bullying, transactional sex, alcohol and drug use as associated factors. HIV prevention measures need to address these factors in addition to existing interventions among MSM in southwest Nigeria. This will promote effectiveness and sustainability of programs.

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Effects of a Novel Group-Based Cognitive Behavioral Therapy (CBT) Intervention on Stigma, Psychosocial Wellbeing, and HIV Service Use Among Sexual and Gender Minorities in Nigeria

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Background: High levels of stigma due to identifying as a sexual or gender minority (SGM) as well as living with HIV (i.e., intersectional stigma) are increasingly documented in the African setting, and often manifest as self-stigma (also called internalized stigma). Such stigmas impede psychosocial wellbeing as well as HIV prevention/care, and there are few (if any) evidence-based internalized stigma reduction interventions in this context. We developed and evaluated a novel, group-based CBT stigma intervention for men who have sex with men (MSM) and transgender women (TGW) at risk for/living with HIV in Lagos, Nigeria.

Material and Methods: The intervention, adapted from a Canadian curriculum, comprised four weekly in-person sessions facilitated by community health workers. We conducted a delayed intervention group randomized controlled trial, with pre-post surveys plus 3-month follow-up, as well as qualitative interviews with participants/program staff. Outcomes included internalized stigma related to SGM and HIV status, depression, resiliency, and PrEP/HIV treatment use.

Results: Mean age of the 240 participants was 26 years (range 18-42). Seventy-seven percent were MSM and 23% TGW; 27% were living with HIV. Most (88%) participants attended all 4 sessions, and 98% expressed high intervention satisfaction. There was significant improvement in each psychosocial outcome between baseline and second surveys, in both the immediate (post intervention) and delayed (pre-intervention) arms. Qualitative data obtained from participants post intervention described enhanced self-confidence, resilience when facing stigma, and coping skills, and indicated that positive changes found in the delayed group (pre-intervention) were mainly due to perceived support from the interviewers/survey experience. There were further positive changes from baseline to 3-month follow-up in e.g., intersectional internalized stigma and depression, for the immediate intervention group. Controlling for baseline levels of ever PrEP use, 75% of immediate-group participants reported currently using PrEP at three months post-intervention vs. 53% of delayed-group participants right after the intervention ($p < 0.01$).

Conclusion: This study demonstrated feasibility and acceptability of a group-based CBT model in Nigeria. There were also indications of preliminary efficacy related to mental health outcomes and PrEP, despite the randomized design not holding up (where study participation/contact became an intervention in itself).

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Reasons for Dropping Out of Opioid Agonist Therapy Among Clients in Mbeya, Tanzania

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Background: Multiple barriers in the health care system and the community limit the retention of people who use drugs (PWUD) in Opioid Agonist Therapy (OAT), despite its expanding availability. This study analyses factors that contribute to low retention in OAT among PWUD at Mbeya Zonal Referral hospital (MZRH).

Material and Methods: Data from the MZRH OAT clinic for clients initiated on methadone between 2007 to January 2022 were analyzed. Records on treatment history and daily attendance were extracted from an electronic database. Clients with more than 30 total missed appointments were identified and contacted by peer educators to elicit their reasons for non-attendance.

Results: Of the 443 clients, 190 (43%) had treatment interruptions of 30 days or longer, 97% of them were male, with a median age of 34 years. Reasons for interruption of treatment was obtained for 131 clients, the remaining 59 clients lacked a reported permanent residence and could not be reached. The main reasons for treatment interruptions included: lack of transport fare: 32 (24%); relocated to other regions: 31 (24%); returned to their hometown when unable to pay rent 27 (21%); imprisonment 6 (5%); drug relapse 10 (8%); refused to continue taking methadone 11 (8%); and 14 (10%) had self-graduated and stopped using drugs.

Conclusion: Findings from this analysis highlighted financial difficulty as the major obstacle to retention in OAT, including the cost of travel and housing for out-of-town clients, possibly also for those who couldn't be reached. Programs need to develop structural interventions that improve PWUD's access to treatment by removing economic barriers while also facilitating their reinsertion in communities and in the active workforce. Additionally, drop-in centers and shelters have the potential to support treatment and help retention in OAT and graduation.

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The Growing HIV Epidemic Among Key Populations in Nigeria: Results of the Integrated Biological and Behavioral Surveillance Survey

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Background: Prior to the 2020 Integrated Biological and Behavioral Surveillance study, Nigeria has had three rounds of the study. The 2020 IBBSS was conducted among Female Sex Workers (FSW), Men who have Sex with Men (MSM), People Who Inject Drugs (PWID) and Transgender (TG) population, in order to improve HIV prevention efforts amongst KP in Nigeria.

Material and Methods: Data was collected in twelve states from key population through multi-stage probability sampling. Respondents were randomly selected from only physical hotspots (FSW, TG & PWID) and from both physical and virtual spots for the MSM. The sample sizes per KP typology per state were 415, 372, 368, 372 for the FSW, MSM, PWID and TG typology respectively. Behavioral data were collected using structured questionnaire and were directly entered into the database. Analysis was done using Survey CTO and STATA.

Results: A weighted HIV prevalence of 28.8%, 25.0%, 15.5% and 10.9% was found among TG, MSM, FSW and PWID respectively. Consistent

condom use was low for all type of KP especially with regular partners.About 80% PWID injected drugs in the last month and 57.3% shared used syringes with other PWID.Overall,77.2% FSW,58.4% MSM,59%TG and 37.1% PWID were tested for HIV in the last one year leading up to the survey.Utilization of HIV prevention services was poor and a high proportion of KP were unaware of these services and/or where they could be accessed.

Conclusion: The study highlights the progressing HIV prevalence among all KP in Nigeria.The TG population which was studied for the first time, had the highest national HIV prevalence at 28.8%.MSM had the second highest HIV prevalence at 25%,followed by FSW and PWID at 15.5% and10.9% respectively.Specifically, the HIV prevalence amongst PWIDs increased from 3.4% to 10.9% between 2014 and 2020, showing about 220% prevalence change in 6 years.The result indicates that the risk of acquiring HIV is many folds higher among key population relative to general population, with a prevalence of 1.4%.The risk of HIV among TG is nearly 20 times higher,MSM is 27 times higher, and the risk amongst PWID is nearly eight times higher compared to general population.An integrated prevention approach is critical for epidemic control among KP,who constitute the reservoir for HIV transmission in Nigeria.

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Abstract 631 was withdrawn.

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Size & Distribution of Female PWIDS in Nigeria: Result From the 2018 Key Population Size Estimation Study of 10 States

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Background: A recent 'Mode of Transmission study' revealed that 91% of new infections in Nigeria are

attributable to Adult males, Adult females and Key Population, including Female Sex Workers and Men who have Sex with Men (NACA's Mode-of Transmission Report, 2020). The prevalence of HIV amongst People who inject drugs (PWIDs) is 10.9%. Determining the size and distribution of KP, including PWID is critical for program planning and implementation. The 2018, programmatic mapping was conducted to provide insight on geographical locations where KP, including PWIDs are found so that targeted HIV interventions can be designed.

Material and Methods: Using the programmatic mapping method, KP groups, including PWIDs were mapped in 10 states covering all LGAs in each state. Programmatic mapping approach involves two sequential data collection steps referred to as level one [L1] and level two [L2]. During L1, information was collected from some secondary key informants (KIs) about the geographic locations/spots where KPs congregate, the characteristics of the spots (drug bunks, open places, lodge, etc.) with an estimate of the number of KPs in such locations. During L2, interviews with primary key informants were conducted at spots identified in L1.Validation happened over a period of 30 days.

Results: Approximately 22% of the total estimated PWIDs across the 10 states are females. Total mean estimated number of female PWIDs across the 10 states was 11,031 with highest estimates found in Kaduna 3,340; Oyo 2,711, Abia 1,180 and Gombe 1,028. Highest proportion per state of estimated Female PWIDs compared to the total estimated number of PWIDs were seen in Edo (39%), Kaduna (38%) and Abia (32%) states. Oyo state had the highest number of Female PWIDs per state but proportionally the female PWIDs were less than 20% of the total estimated PWIDs population in the state.

Conclusion: The vulnerability index of women and children is a measure of general population health. Female PWIDs, who a times engage in risky sexual practices, are vulnerable to both HIV, hepatitis and other sexually transmitted infections. The study result should assist program planners to design interventions that target females PWID in their specific context.

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Data Utilization by Health Facility Teams to Inform Continuous Quality Improvement Projects Facilitates Improved HIV Program Outcomes in Malawi

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Background: Use of data to strengthen programme implementation is a critical part of the HIV response. While data can be used to inform policy and programming objectives, it is important for data to also be used at the health facility level to improve program implementation. In 2019, Partners in Hope (PIH) in Malawi developed a system where data are utilized through an iterative process between Clinical and Monitoring and Evaluation (M&E) teams at the health facility and central office level to improve program implementation.

Material and Methods: PIH is a Malawian, non-governmental organization, supporting HIV Care and Treatment at 123 health facilities across 9 districts with PEPFAR/USAID funding. Every month, facility based statistical clerks with oversight from clinical leads ensure HIV program data are collected, reviewed and submitted to the central level M&E team for further cleaning and consolidation. Consolidated data are then re-shared back to the facility using an Excel dashboard presenting a visual overview of program results in graphical format. During monthly data review meetings, clinical leads and facility teams review performance and identify gaps through the dashboard. In 53% of PIH facilities, Continuous Quality Improvement (CQI) projects were implemented based on priority areas for improvement.

Results: Examples of recently successful CQI projects include improving HIV status ascertainment in one large STI clinic in Mulanje district, which increased the HIV testing rate by 37% between Oct 2021 to March 2022 and improving high viral load management in one large clinic in Chikwawa district, which increased the number of follow-up viral load samples taken after adherence counseling for those with initial high viral loads by 50% from December 2021 to April 2022.

Conclusion: Strong data management and review systems at all levels increase the ability of staff to own, interpret and improve HIV program implementation. Data dashboards can be used to identify gaps, design CQI interventions and track progress to optimize performance. Once annually, PIH teams will meet to review dashboard visualizations and indicators making recommendations for revisions to ensure data is responsive to initiatives at facility level. The CQI methodology will also be scaled-up to 100% of facilities.

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Why Start From Scratch? Using the Synthesized Narrative Exploration Approach to Capitalize Available Evidence to Inform a Situation Analysis for HIV Programming in Mozambique

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Background: Evidence-informed HIV situation analyses are important for HIV programming, but primary data collection is costly and time-consuming. The synthesized narrative exploration (SNE) approach synthesizes available evidence, and presents this as stories (narratives) to study participants for validation and further exploration of context-specific evidence. This study reports on the application of the SNE approach to explore the underlying causes of HIV prevention, treatment and

care gaps for children living with HIV and their mothers, to inform the Kusingata HIV project in Inhambane province, Mozambique.

Material and Methods: The SNE approach was used in the context of the Kusingata project in Jangamo and Massinga districts in Mozambique in 2022. A literature review was conducted of 25 peer-reviewed articles and one Ministry of Health report in relation to prevention of mother to child transmission, access to HIV testing, early infant diagnosis and treatment and support for children and pregnant women in Mozambique. This information was synthesized in small narratives, which were further explored with study participants in both districts using focus group discussions (n=11) and semi-structured interviews (n=19). Subsequently, the findings were validated by stakeholders representing the community, government and development partners.

Results: The majority of findings from the literature from Mozambique were confirmed by the study participants to be valid in their contexts, and helped to explore in more depth the underlying reasons for HIV prevention, treatment and care gaps specifically in Jangamo and Massinga districts. Most important factors before pregnancy were importance of having a child, HIV testing before intended pregnancy being uncommon, and low uptake of ART before pregnancy. During pregnancy, late start of ANC and PMTCT, and lack of support from husbands for attending health services were important factors. After childbirth, fear of discovery of HIV-status and mothers-in-law's opinion influenced infant testing and treatment, and women's adherence to ART.

Conclusion: The SNE approach provided, in a relatively short time, context-specific evidence for the districts where the Kusingata project is based. This method can be relevant for other practitioners in the HIV field when designing an evidence-informed HIV project.

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A FRIEND IN NEED: Caring for the Carer; Psychosocial Support and Ongoing Leadership Development for Peers Providing Peer to Peer Support to Improve Viral Load Suppression at 20 HIV Clinics in Southwestern Uganda

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Background: HIV viral load suppression among Children and Adolescents Living with HIV (CALHIV) still lags behind the adults in Uganda. Psycho-social support (PSS) for CALHIV and their caregivers through peer-led models improves retention in care and adherence to treatment contributing to viral load suppression (VLS). Building capacity and providing mentorship for Adolescent Youth Peers (AYPs) to facilitate PSS at 20 health facilities in South Western Uganda was recognised as critical for success.

Material and Methods: The HIV care and treatment program in Uganda works with volunteer AYPs to provide PSS to adolescents in care. AYPs (Ariel peers) 15-24 years selected at 20 health sites attended a 5-day orientation on HIV care services (April 2021) and were provided with ongoing capacity building on adherence, disclosure, and HIV self-testing through virtual and in-person sessions. A 3-day virtual training on advocacy was conducted in May 2021 and a PSS camp with a psychologist for peer-to-peer experience sharing, mental health assessments, counselling & guidance, leadership, public speaking and financial management skills. Smart phones with airtime and internet data were provided at the start of engagement and facilitation to allow real time interventions like peer to peer virtual support and reaching the community. Ongoing PSS through phone calls, WhatsApp and in-person meetings was provided.

Results: Twenty Ariel Peers were oriented, trained, and mentored across the 20 facilities serving 1,654

CALHIV. The proportion of clients lost-to-follow-up reduced from 6.8% in March 2021 to 1.7% in June 2022 with the support of Ariel Peers. Similarly, VLS among CALHIV improved from 86% to 93%.

Conclusion: Activity-based facilitation allows for real-time intervention by peers while in-kind airtime and internet data on personal mobile phones enables real-time peer-to-peer virtual support and the ability to reach patients in the community. PSS through peer-to-peer support is a critical client-centred service delivery model to achieve positive outcomes in chronic care. Providing mentorship and support to Ariel peers is feasible and critical to ensuring and supporting individual-level growth and broader support for personal health and success and confidence in the implementation of support for CALHIV.

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PATA Summit - A Regional Information Dissemination Event for Health Care Providers on the Frontline

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Background: Global HIV conferences are an important date in the calendar of HIV scientists, clinicians, public health experts, donors and global advocates. They offer an opportunity to enhance global networking, push the knowledge agenda, present and discuss the latest research findings. Abstracts are research based, peer-reviewed and driven by academia. Representation of frontline health care workers (nurses, counsellors, social workers) as participants or speakers are few.

Material and Methods: The annual Paediatric Aids Treatment Africa (PATA) summit 2022, a regional 3 day event on the HIV response, is aimed at frontline health care staff, to hear and appreciate the voices from the field, allow for information exchange and enhance motivation. In 2022, after the COVID pandemic, the summit was re-organised as a mixture of in person attendance in 12 African country satellite hubs and virtual attendance via

PATA's web based Linking and Learning hub. Under the summit heading of "Ending AIDS in Children, Adolescents and Young People - a Roadmap to 2030", 73 speakers covered key topics to "Do it Right, Do it Together, and Do it Now!". Presentations were interactive, favouring an "Africa Café" style, health provider champions were nominated and topic related materials and implementation tools can be accessed post-summit on PATA's Linking and Learning hub.

Results: 1580 participants from 32 countries attended the summit, comprising of 345 frontline health care workers, 273 peer supporters, 293 psychologists/social workers/counsellors/community health workers and 669 others. In-person attendance and virtual attendance were comparable with 49% (n=774) and 51% (n=806) respectively. Conference registration was free and both, country satellite hubs and virtual attendance, helped to minimize overheads otherwise associated with international travel. Information will be cascaded further through health care workers sharing and applying lessons learned directly into their day to day setting, benefitting not only the 83861 children and adolescents, currently registered on ART in their respective clinics, but also any potential future clients.

Conclusion: Smaller, local, frontline driven events, complementary to global conferences, can offer a reality check against global commitments and everyday challenges, where practical and real-world solutions can be shared and discussed.

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Effects of Cultural Factors on HIV Vulnerability and Transmission in Gambella, Ethiopia

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Background: Worldwide, there were an estimated 36.9 million people living with HIV/AIDS by the end of 2017. Gambella region was the second highest

HIV/AIDS prevalence in Ethiopia next to the capital Addis Ababa. This study was conducted to identify the cultural factors related to HIV vulnerability among youths in the region.

Material and Methods: The study has employed a cross-sectional study design. It also used a mixed approach in which quantitative and qualitative methods were used. A cluster sampling design was used as the populations in the region were located sparsely and about 295 respondents were interviewed using the standard questionnaire. For the qualitative research, key informant interviews/KIIs were used and ten selected individuals were interviewed from each woreda.

Results: The mean age of the sexual initiation was 16.7 years with a standard deviation of ± 4 . Eighty-four percent of the study participants had at least 2 sexual partners in the past 12 months. Males were 2.3 times more likely to have multiple sexual partners AOR 2.34 (95% CI, 1.21, and 4.54) than females. Having unprotected sex with regular customers with CSW was common. Generally, inconsistent usage of a condom, poor prevalence of male circumcision, transactional sex, and, excessive drug usage was attributed as a factor for HIV vulnerability. In addition, the existence of gender imbalance in decision-making has affected especially women to rely on their male partners to decide on sexual matters such as condom usage and sexual fidelity matters.

Conclusion: Regarding the qualitative report, it was reported that wife inheritance, sex accommodation, polygamy, poor rate of male circumcision, blaming others for irresponsible sexual behavior, perception of disclosure, commercial sex work, and, excessive substance use stated as a factor for youth's vulnerability for HIV in the region. Some recommendations: Tailored and community-led interventions that promote behavioral change communication (IEC/BCC) will be more effective. Health campaigns needed to address traditional practices such as wife inheritance and, sex accommodation should be addressed. Policymakers, INGOs, local government, and, other stakeholders should work together to reduce youth's vulnerability to HIV in the region by giving due attention to cultural contributing factors and practices.

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Knowledge of Human Monkeypox Viral Infection Among Healthcare Workers in Cameroon

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Background: The increase in the number of human monkeypox (MPX) cases calls for more public health actions. One of the challenges in terms of MPX prevention, transmission, detection and treatment is the insufficient knowledge, particularly among healthcare workers (HCWs). Hence, we sought to assess the knowledge of MPX among HCWs in Cameroon.

Material and Methods: A cross-sectional online survey was conducted from August-October 2022. A questionnaire on the knowledge of MPX consisting of 21 items was developed, adapted from the US-CDC questionnaire. Knowledge was assessed by summing up the score; a correct response was given a score of 1 and an incorrect response a score of 0. The score ranged from 0 to 21, which higher scores indicating a better knowledge. Two different cut-offs were defined: 80% (at least 17/21) and 60% (at least 13/21) as very good and good knowledge respectively. A $p < 0.05$ was considered statistically significant.

Results: The analysis included 279 participants, with 53.0% (148/279) of the participants being in the city of Yaoundé and 13.9% (39/279) in Douala. Nearly 51.6% (144/279) of the participants were males and the median [IQR] age was 29 [26-32] years. Concerning the level of education, medical doctors were the most represented (63.4%, (177/279)). Approximately 25% (70/279) of respondents worked in a Central Hospital, and 26.9% (75/279) worked at private Hospital.

Regarding the years of experience, the majority were between 1-5 years (73.8%, 206/279). The mean score of knowledge was 13.7/21 and the score ranged between 7 and 19. Only 11.1% (31/279) of respondents had a very good knowledge ($\geq 80\%$) on MPX; while 64.5% (180/279) had a good knowledge. Two of the explanatory variables (age and professional occupation) were associated with knowledge using 60% cut-off ($p=0.036$ and $p=0.030$ respectively) and only one explanatory variable (professional occupation) when using 80% cut-off.

Conclusion: Knowledge of MPX among HCWs in Cameroon is uniformly low across sociodemographic, workplace, and medical professional characteristics. Thus, efforts should be made to increase the knowledge of HCWs in Cameroon, especially among those who are working in rural areas where most of the MPX cases have been detected in Cameroon.

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HIV VL Laboratory Data Providing Arv Programme Support in South Africa

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Background: The 2019 South African ART Clinical Guidelines recommends that patients with an HIV viral load (VL) ≥ 50 copies/mL undergo adherence counselling and receive follow-up VL three months later. Specimen-level VL data are reviewed regularly to monitor the success of the ARV Programme and measure progress towards reaching the third 95 of the 2020 UNAIDS targets. The National Health Laboratory Service (NHLS) in South Africa, monitors the VL data reported at all 17 VL testing laboratories on a monthly basis. In quarter one of 2022 a decrease in the percentage of samples reported as <50 copies/mL was observed at a single VL laboratory. Possible laboratory-related reasons for the decrease were investigated.

Material and Methods: Specimen level VL data that is routinely collected from the NHLS Corporate Data Warehouse and reported as % results in the

following categories (copies/mL): <50 ; $\geq 50 \leq 200$; $>200 \leq 1000$; $>1000 \leq 10000$; $>10000 \leq 100000$; >100000 . A decrease of 11% in <50 copies/mL and a concomitant increase in the 50 to 1000 copies/mL range was noted in March 2022 at a laboratory in the Gauteng province. Compared to results from a second laboratory within the same region, a similar decrease was not observed. Pre-analytical, analytical and post-analytical processes were reviewed during site investigations at both laboratories conducted in April 2022.

Results: The affected laboratory was newly operational. Although staff had been trained and deemed competent in assay procedures, inexperience and surge testing volumes (1 000, December 2021 increasing to 35 000, March 2022) converged. Second centrifugation of VL specimens was performed sporadically, contrary to national standard operating procedures which recommend that all VL samples undergo a second centrifugation step immediately before testing, preventing detection of leaked intracellular viral RNA and reporting falsely elevated VL. Clinical and instrument-related causes were excluded. Refresher training of testing procedures was provided with monitoring indicating suppression rate recovery of 6% by May and a further 7% by June 2022.

Conclusion: Non-adherence to laboratory procedures can affect patient management and programmatic performance indicators. The review of national laboratory data trends is a valuable resource for monitoring laboratory quality assurance and, by extension, ARV programme success.

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Impact of Introduction of a Semi-quantitative CD4 Point of Care on Testing Coverage and Ahd Case Identification

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Background: Access to CD4 testing in Nigeria has been suboptimal over the years. This is because CD4+ cell count estimation for monitoring people living with HIV (PLHIV) was deprioritized in 2016 in favor of viral load testing, inconsistent supply of CD4 reagents and frequent CD4 equipment downtime. Following a renewed focus on Advanced HIV Disease (AHD), the national HIV program developed and rolled out a package of care for AHD which recommends CD4 testing for all newly enrolled PLHIV. A CD4 point of care test – VISITECT® CD4 Advanced Disease rapid test (VISITECT®) was introduced in Q1 2021 to address the gaps in CD4 testing. We assessed the effect of introducing VISITECT® on access to CD4 testing.

Material and Methods: CD4 testing in the implementation of the AHD package of care focused on PLHIV ≥10years old newly enrolling into care. Data on CD4 testing were collected from the 28 facilities where the AHD implementation commenced in Q3 2021 and compared with data from the same sites in Q3 2020 (prior to introduction of VISITECT®). Changes in CD4 testing coverage and AHD case identification were assessed. A survey was conducted among laboratory healthcare workers (HCW) to understand the ease of use and category of facility suitable for the use of VISITECT®. The data was analysed using MS Excel.

Results: In Q3 2020, 16% (935 of 5,923) newly enrolled PLHIV received CD4 test, of these 22% (206) had CD4+ cell count <200cells/mm³. In Q3 2021, 2,097 patients were newly enrolled, 89% (1,686) received CD4 test, and 48% (902) of those

tested had CD4+ cell count <200cells/mm³. Twenty-six HCWs responded to the survey, and 64% either agreed or strongly agreed that VISITECT® is easy to use and can be conducted by any HCW. Majority of respondents stated that VISITECT® is suitable for facilities with low (54%) to medium (62%) client volume.

Conclusion: CD4 testing coverage and AHD case finding improved following the introduction of VISITECT®. The product is easy to use and suitable for deployment across all levels of health facilities and may be prioritized for lower volume facilities without conventional or point-of-care CD4 machines.

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The Impact of CD4 Laboratory Placements on the Euclidian Distance for Inter-Laboratory Referrals in South Africa Between 2012 and 2021

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Background: South Africa has the world's largest HIV epidemic, but also the largest antiretroviral therapy program, supported by a network of pathology laboratories. The integrated Tiered Service Delivery Model (ITSDM) was implemented to address service coverage gaps, using CD4 as a proxy for ideal laboratory placement. The majority of CD4 test samples are referred through a non-CD4-testing laboratory to a CD4-testing laboratory. The distance between these directly impacts result delivery time. This study reports changes in the Euclidian distance (ED) of referred specimens as CD4 testing laboratory placements were optimized over time.

Material and Methods: Annual test volumes were extracted for source and testing laboratories for calendar years 2012 to 2021 for laboratories testing

referred samples. The laboratory spatial coordinates were used to calculate the ED. The median ED was determined by year, month and province and the percentage change between April 2012 to December 2021 calculated per province.

Results: Data is reported for 14,487,006 referred specimens. There were 53/63 laboratories receiving referrals in 2012, decreasing to 42/47 in 2019, with 44/47 by 2020. The national median ED ranged from 55km in 2012 to 60 km in 2018/2019. This is evidenced by the decentralisation of laboratories in 2019. At a provincial level, the annual median ED ranged from 15km (Gauteng, 2019) to 206km (Northern Cape, 2017). In KwaZulu-Natal, a +22.7% percentage change in median ED was noted due to decentralisation of 11 laboratories (2012-2018). The Free State province reported a -55.7% percentage change in the median ED. The percentage change in the Eastern Cape was 3.8%, Mpumalanga 0.8% and Western Cape 4.7%. The Northern Cape exceeded the national median ED monthly for the duration of this study by >100km, despite introducing three new district laboratories in this province. For the Eastern Cape, Mpumalanga and Limpopo provinces, the monthly median ED exceeded national values by at most 40 km.

Conclusion: National ED calculations showed consistency over time, while provincial changes correlated with decentralization of testing laboratories. ED calculations are another parameter that can be used to assess adequate placement of testing laboratories/identify gaps contributing to prolonged travel time that ultimately impacts result delivery.

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Sustained Access to HIV Viral Load Testing in the Midst of Competing COVID-19 Testing at NIMR Mega PCR Laboratory Lagos State Nigeria During the COVID -19 Pandemic

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Background: Nigeria has an estimated 1.9 million people living with HIV (PLHIV), 1.7million of which are on ART. HIV Viral Load (HVL) is essential for the treatment and management of PLHIVs. In 2020, as the COVID-19 pandemic emerged, inadequate testing capacity posed a challenge to Nigeria's response to the disease. Existing PEPFAR's investments in HVL PCR mega-laboratories were called up by the government of Nigeria for integrating COVID-19 testing (CT), with the PEPFAR-supported National PCR Network becoming the main stay for diagnosis of the disease. The pronouncement of lockdown in Nigeria made matters worse and laboratory staff getting infected during this period did not help either. We present the outcome of PEPFAR-supported Nigeria Medical Research Institute (NIMR) HIV PCR laboratory experience in providing sustained access to HVL testing (HVL) while supporting national COVID-19 response.

Material and Methods: The HVL at NIMR with a Roche Cobas 6800 and 8800 PCR platforms for molecular diagnostics was called up for CT in March 2020. The laboratory management was engaged on a workable template to sustain access to HVL while also supporting CT. Assessment and workflow analysis were carried out, two shifts' schedules were agreed upon with the night shift dedicated to CT alone and the day shift to HVL. In addition, the Roche 6800 platform was dedicated to CT while the 8800 was for HVL. Human Resource for Health was improved through additional recruitment, relevant trainings on CT, infection prevention & control and documentation and reporting, work scheduling and payment of allowances for extra work hours.

Results: Between April 2019 to March 2022 a total of 63,421 HVL samples were received and analyzed compared to 132,119 HVL samples received and tested between April 2020 to March 2021. A total of 26142 COVID-19 samples were tested from April 2020 to March 2021 during the pandemic. The HVL output surpassed the preceding year with 208% when compared with the year before the pandemic.

Conclusion: Sustained access to HVL testing for PLHIVs can be achieved despite integration of testing for other diseases in the midst of a pandemic. We recommend the scaleup of integrated disease testing using national infrastructures.

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Improving Early Infant Diagnosis: A Comparative Analysis of Turnaround Time Using GeneXpert and PCR Laboratory Platforms in Southern Nigeria

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Background: Early infant diagnosis (EID) of HIV has been a teething problem in Nigeria due to the prolonged turnaround time for results from central polymerase chain reaction (PCR) laboratories. To overcome this, Nigeria commenced the use of GeneXpert platforms for early infant diagnosis. This study compares the turnaround time using the GeneXpert platforms with the conventional PCR laboratories.

Material and Methods: This retrospective study abstracted routinely documented data from laboratory service registers from three (3) health facilities in Cross River State using GeneXpert machines for early infant diagnosis, and the central PCR laboratory in Akwa Ibom State, Nigeria – all supported by PEPFAR through USAID. The abstraction spanned from January through December 2022, however, EID samples were analyzed by the PCR laboratory between January–September 2022 and by the GeneXpert machines between October and December 2022. The turnaround time was determined by calculating the difference (in days) between the date the EID sample was received at the testing laboratories and

the date the result was received at the health facility using Mann-Whitney test statistics on SPSS version 26. Significant p-value was set at $p \leq 0.05$.

Results: A total of 467 EID samples were analyzed with results released within the review period. 302 samples (64.7%) were analysed by the PCR Laboratory and 165(35.3%) samples by the GeneXpert platform. The median TAT using the GeneXpert platforms was 11 days [IQR 5–19 days] and was significantly lower when compared to the median TAT for the PCR Laboratory of 47 days [IQR 28–83 days] ($\chi = 16.01$; $p \leq 0.001$).

Conclusion: GeneXpert platforms confer an advantage in the timely return of results for early infant diagnosis, allowing for early treatment intervention in infants with HIV. HIV programs experiencing delays in infant diagnosis can explore this option.

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Adherence to Viral Load Testing Guidelines, Barriers, and Associated Factors Among Persons Living With HIV on ART in Southwestern Uganda: A Mixed-Methods Study

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Background: Uganda adapted Viral load (VL) testing for monitoring HIV treatment success and virologic failure. However, there is a paucity of data on how the VL testing guidelines are followed in practice in the HIV clinics. This study determined the adherence to national guidelines on VL testing, barriers, and associated factors in persons living with HIV (PLHIV) on ART in southwestern Uganda.

Material and Methods: We conducted a cross-sectional mixed methods study from April to May 2021 at four HIV clinics in southwestern Uganda. Patient chart review using a checklist that captured age, gender, and level of a healthcare facility, dates of ART initiation, dates VL specimens were drawn,

line of ART, patient adherence to ART was done. Continuous data were summarized using mean and median and Chi-square was used for categorical data. We performed regression analysis to determine factors associated with adherence to viral load testing guidelines at a 95% level of significance. Key informant interviews with managers of the health facility, ART clinic and laboratory were carried out, and thematic analysis was conducted to explore barriers to adherence to VL testing guidelines.

Results: The participants' mean (SD) age was 39.9(±13.1) years, 39.5% were male, 45.8% received care at a general hospital and median duration on ART was 5 years (IQR;3–7). Of the 395 patient charts reviewed, 317 had their VL testing (80.3%) per the guidelines (defined as up to one month post due date). Receiving care at a hospital (aOR = 2.20; 95%CI 1.30–3.70; p = 0.002) and increasing patient age (aOR = 1.02; 95%CI 1.02–1.06; p = 0.020) were the factors associated with adhering to VL testing guidelines. Long turnaround time of VL results and insufficient VL testing kits were cited by providers as barriers.

Conclusion: We found suboptimal adherence to VL testing guidelines in PLHIV on ART in southwestern Uganda. Long turnaround time of VL test results and inadequate test kits hindered compliance to VL monitoring guidelines. Strategies that target young PLHIV and lower-level health facilities, increase the stock of consumables and shorten VL results turnaround time are needed to improve adherence to VL testing guidelines.

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Pilot Analytical Performance and User Acceptability Evaluation of the Onflow SST Capillary Blood Collection Device in South Africa

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Background: There is growing interest in patient-centric specimen collection to meet the need for less invasive blood collection while not affecting the diagnostic results that are the cornerstones of medical decision-making. The standard of care, venepuncture, can be painful and limited by a lack of trained phlebotomists. Capillary blood collection is a feasible alternative, particularly for decentralised blood collection and testing. However, this can be restricted by small specimen volume and quality, and finger stick collection can be painful. The onflow-SST (Loop Medical SA, Switzerland) novel blood collection device utilises needle-free technology to collect 1mL of capillary blood, with specimen quality comparable to venepuncture.

Material and Methods: A pilot study of onflow-SST was performed in South Africa, with 100 healthy participants enrolled. Specimens were collected into serum separation tubes in a randomised order, with two onflow-SST capillary blood specimens and one venous blood specimen obtained from each participant. Five chemistry analytes (AST, ALT, LDH, potassium and creatinine) were measured for each specimen using the cobas[®] 501 chemistry analyser. Specimen haemolysis was also assessed. Capillary blood results were compared to venous blood results and to each other, using both absolute measurements and percentage similarity. Participants also completed user acceptability questionnaires at the time of specimen collection.

Results: Specimen sets were successfully collected from 99 participants (53 female, 91 Black African, mean age: 34.9 years, mean BMI: 28.6 kg/m²). No to mild haemolysis was observed for the majority of specimens, although onflow-SST specimens showed marginally increased free haemoglobin. The percentage similarity between results across all analytes was within 95%-105%, with standard deviation and coefficient of variation less than 10%, indicating good agreement. The overall mean results and mean absolute bias per analyte were similar, although deviation from the reference for individual results was variable, particularly for creatinine. This cohort found onflow-SST highly acceptable, with 91% experiencing no pain and 96% willing to use it again.

Conclusion: This pilot study has set the foundation for further clinical studies. This will include larger cohorts, inclusion of participants with abnormal chemistries and specimen self-collection to further

the goal of decentralising healthcare without compromising the quality of or access to care.

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Laboratory Evaluation of the Essenlix iMOST X-1 Point-of-Care Analyser for Analysis of Blood Count Parameters

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Background: The iMOST X-1 analyser (Essenlix Corporation, NJ, United States) is a novel hand-held smart-phone-sized point-of-care system, for the quantitative determination of haemoglobin (HGB), white blood cell (WBC) count and differential (NEU/LYM) from 10 µL volume of venous whole blood (K2EDTA) and/or capillary blood with results available in 90 seconds. Point-of-care testing assists with patient management by providing rapid laboratory test results on the spot and reducing the overall turnaround time and treatment initiation delays.

Material and Methods: In this evaluation, the analytical performance of the iMOST X-1 analyser was compared with a reference haematology analyser, Sysmex XN-9000 (Sysmex, Kobe, Japan), for HGB, WBC and WBC differentials. Remnant adult and paediatric blood samples with varying levels of test parameters were tested for accuracy within 6 hours of collection (n=40). Precision testing was done on samples with low, normal and high levels per test parameter (n=10 per level), while repeatability was tested using the control slides provided (n=25 per control). MedCalc software was used for all statistical analysis.

Results: Direct comparison of HGB and WBC results showed good agreement between the test and reference method (regression coefficient >0.9), with overall %similarity of 100% and a corresponding %CV ≤ 4%. A bias of -0.097±1.06 and -0.152 ±0.82 was noted. For NEU/LYM, a correlation

coefficient of 0.97 and 0.89, and a similarity of 102% and 114% were observed, with a bias of -0.36±0.93 and 0.35±0.80. Precision for HGB and WBC had %CV's <2% and <6% across all levels tested, compared to <1% and <4% respectively on the Sysmex. Differential counts at low level reported errors, while %CV comparisons for normal and high levels of NEU/LYM were higher than Sysmex values, although within Westgard acceptance criteria. Repeatability produced %CV values <2% for HGB and WBC parameters.

Conclusion: The iMOST POC device showed good correlation with the standard of care assay for the measurement of HGB, WBC, and differential counts. Variability on differential counts was noted in specimens in the low range, probably due to lower sensitivity at that level. The newer iMOST X-2 model, with upgraded software for differential analysis will be evaluated next before field testing commences.

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Epigenetic Immune Cell Quantification for Monitoring CD4 Counts in Dried Blood Spots and Plasma Separation Cards

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Background: CD4 counting and HIV viral load testing for monitoring immunodeficiency and response to antiretroviral therapy mostly rely on healthcare worker venesection blood specimen collection. In areas with limited resources, dried blood spots (DBS) and Plasma Separation Cards (PSC, Roche®) off capillary blood have been implemented for HIV viral load testing, but not for CD4 counting. We therefore investigated DBS and PSC devices combined with epigenetic PCR to quantitate CD4 T-cells in comparison to immunophenotyping by flow cytometry.

Material and Methods: Residual blood specimens of 40 HIV-infected individuals referred for routine laboratory monitoring were collected either as liquid EDTA blood, DBS (Whatman 903 Protein Saver Card, Merck) or PSC specimens. Specimens were grouped into 100-200 cells/ μ l, 200-500 cells/ μ l and >500 cells/ μ l based on flow cytometric quantification using a CD45/CD4 PanLeucogated panel (Beckman Coulter, Brea, Ca) of CD4+ Helper T cells. Epigenetic quantification of CD4+ T-cells was performed using real-time PCR amplification (Epimune Diagnostics, Berlin, Germany) of demethylated genomic regions specific for CD4+ T-cells and total leukocytes. A volume of 10 μ l of liquid EDTA blood and 1 (6mm) punch of the DBS and PSC specimens were investigated respectively. Relative (% leukocytes) and absolute (cells/ μ l) epigenetic quantification results were compared to flow cytometry data.

Results: Relative epigenetic CD4 quantification showed excellent correlation with flow cytometry resulting in Spearman's rank correlation of 0.95 (liquid), 0.95 (DBS) and 0.82 (PSC), respectively. Absolute epigenetic quantification also exhibited a good correlation of 0.92 (liquid), 0.68 (DBS) and 0.74 (PSC), however with an overestimation of epigenetic counts relative to flow cytometry. The latter requires further investigation on larger specimen numbers and additional statistical analyses to determine clinical impact of misclassification.

Conclusion: This study, however, supports the proof of concept of epigenetic CD4 quantification of fingerstick blood collection devices allowing simultaneous CD4 count monitoring and HIV viral load testing in DBS and PSC specimen types. Further research and development is required to move beyond proof of concept.

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Analytical and Usability Evaluation of SARS-CoV-2 Antigen Rapid Diagnostic Test Readers for Improved Quality in South Africa

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Background: SARS-CoV-2 antigen rapid diagnostic tests (Ag-RDT) have been implemented globally to decentralise rapid testing and assign patients to appropriate treatment regimes. Currently, Ag-RDT results are manually recorded through visual interpretation, which may lead to potential misdiagnosis and gaps in patient records. Ag-RDT readers offer an innovative solution to electronically capture the Ag-RDT image, perform automated result interpretation, and enable result linkage to a relevant laboratory information system.

Material and Methods: Two digital solutions, the Care Coordinator (CC) application developed by Fio Corporation (Toronto, ON, Canada) and the HealthPulse (HP) application developed by Audere (Seattle, WA, USA) were investigated to capture and interpret the Panbio™ COVID-19 Ag-RDT (Abbott, USA), in comparison to visual result interpretation by a trained health care worker (HCW). The CC application was downloaded onto a Deki reader (analyser) and the HP application was downloaded onto a Samsung A3 core mobile device. A head-to-head evaluation of the two technologies was performed using a panel of SARS-CoV-2 nucleocapsid recombinant purified proteins (wild-type, Omicron BA.1, BA.4) to measure precision (Intra n=325, inter n=260) and a panel of SARS-CoV-2 residual clinical specimens to measure agreement (n=150) using Cohen's kappa coefficient. Post-evaluation, each HCW completed a user-experience-based questionnaire to obtain qualitative data on the usability and robustness of both technologies.

Results: The intra-/inter- agreement results of visual result interpretation by trained HCW versus automated result interpretation were reported as 1.00/0.96 (CC) and 0.96/0.95 (HP) indicative of a very good agreement. When the visual result interpretation was performed by an experienced HCW, there was a slight increase in the intra-/inter-agreement [1.00/0.97 (CC) and 1.00/0.98 (HP)]. Accuracy analysis showed a similar trend with very good agreement scores of 0.91/0.90 (CC) and 0.87/0.95 (HP) for trained and experienced HCW, respectively. The HCW mean usability score was

determined as 91 (CC) and 89 (HP) which is indicative of an excellent usability score.

Conclusion: Data from this study showed overall acceptable performance of both Ag-RDT readers for automated result interpretation, with added advantages of linkage to patient care, and post-market surveillance.

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Antibiotic Resistance and Biofilm Formation Ability of Coagulase Negative Staphylococci in Healthy Individuals

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Background: One of the groups of organisms that have been a major threat to human health and wellbeing globally is the Staphylococcus species and is known to be one of the biofilm-forming microorganisms implicated in various infectious diseases. Coagulase negative staphylococci have long been neglected as mere contaminants but are now considered clinically significant because they are now being frequently isolated from not only hospital samples but also from the communities. They have also been found to vehemently resist antimicrobials, also notorious for carrying resistance genes and forming biofilms. This study determined the biofilm production potential, antimicrobial resistance pattern in isolates of coagulase negative staphylococci and the presence of blaZ and dfrA genes in these isolates from healthy individuals from various communities in Nigeria. One hundred and forty-four isolates obtained from a previous work were used in this study. Isolates' sub culturing was done using mannitol salt agar and the biofilm assay was done using the tissue culture plate method. The blaZ and dfrA genes were detected using the polymerase chain reaction and visualized using gel electrophoresis.

Results: A total of 117 isolates (81.3%) were strong biofilm producers, 17 isolates (11.8%) are moderate

biofilm producers and 10 isolates, 6.9% are non biofilm producers. The isolates showed high resistance to antimicrobial agents, 98% showed resistance to penicillin and 77.7% to trimethoprim. 108 (75%) isolates were resistant to both antibiotics. Among the isolates, 7 expressed the blaZ resistance gene while 2 expressed the dfrA resistance gene, and 1 had both blaZ and dfrA genes.

Conclusion: There was a significant association of antibiotic resistance with biofilm production. The isolates can further be tested for the presence of genes associated with biofilm and other antibiotics routinely used in the lab.

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Risk Factor Related to Dysfunction in Renal System Related to HIV (DRRHIV study) in Northeast Brazil

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Background: Patients with HIV infection can have different types of renal disease, ranging from subclinical proteinuria to acute kidney failure. Early biomarkers are a challenge to detect renal injury before later damage. Our objective was to evaluate risk factors and detect an earlier biomarker that could be used in real world and feasible in limited resource countries.

Material and Methods: This is a single-center, cross-sectional, retrospective, non-interventional study, through the review of medical records of patients treated from 2017 to 2020, at the HIV outpatient clinic of a reference quaternary hospital in Fortaleza, Ceará, Brazil.

Results: In the study, 77 patients were selected, aged between 32 and 77 years, 63.6% male, 35.1% female and 1.3% transsexual (1 patient). We collected 114 measurements of beta2

microglobulin and correlated to general exams and CD4/viral load dosages. We analyzed and correlated with glomerular filtration rate (GFR) through age and creatinine value using the MDRD GFR equation. Average of CD4 count was 625 cells/mm³ (3.6% < 200cells, 14.5% between 200-350 and 81.8% > 350). From the total patients there was 89.5% with suppressed viral load. Mean MDRD was 81.7 mL/min/1.73m², mean protein/creatinuria ratio was 0.16 (N=69), beta2microglobulin mean was 2.4 ng/ml, with 60.5% of altered dosages (>2). There was no statistical correlation between altered beta2microglobulin and gender (p=0.15), nor being elderly over 50 years (p=0.24) or CD4 greater or less than 350 cells/mm³ (p=0.44). There was a significant correlation between alteration and presentation of any comorbidity (p=0.006), mainly kidney disease (p=0.017) and diabetes mellitus (p=0.079), with no correlation with SAH (p=0.27) or dyslipidemia (p=0.13). There was a correlation with MDRD<60% and altered beta2microglobulin (p=0.03). There was no correlation when comparing dual regimens (3TC/DTG, DRVr/DTG or ETV/DRVr) with triple regimen without TDF (p=1), TDF/3TC with ATVr vs TDF/3TC/DTG (p=0.58) or vs TDF/3TC/EFZ or NVP (p=1), nor double without TDF vs TDF/3TC/DTG (p=0.1).

Conclusion: Altered levels of beta-2-microglobulin show high sensitivity for the presence of kidney damage, and may be an early marker of nephropathy in patients living with HIV and presenting comorbidities.

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Assessing Key Performance Indicators of GeneXpert Instrument Across United States Agency for International Development (USAID) Funded Implementing Partners Supported Health Facilities in 16 States in Nigeria

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Background: Nigeria adopted the use of GeneXpert as first line test for TB diagnosis in 2017 with suboptimal testing outputs across the country. To optimize the instruments, Key Performance Indicators (KPIs) monitoring excel tool was developed by USAID in 2018 to monitor her supported Health Facilities (HFs) with GeneXpert in Nigeria. We report a one-year KPIs in 95 Health HFs supported by Family Health International (FHI-360) and Management Sciences for Health (MSH) in 16 States of Nigeria.

Material and Methods: GeneXpert monitoring tool was developed in 2018 by USAID and reviewed with her Implementing Partners (IPs) for HFs implementation. KPIs were monitored bi-weekly in 95 HFs by supported FHI360 and MSH across 16 States of Nigeria. Variables of interest in the tool includes; equipment functionality, warranty, calibration, Sample Received (SR), tested/dispatched, timely report submission and commodities availability. Acceptable KPIs were set at ≥95% and ≤0% commodities stockout. Data from January-December 2019 was collated, reviewed and analyzed.

Results: Total sample received and tested/results dispatched were 158,441 and 148,785 (93.9%) respectively. FHI360-supported 73 GeneXpert consisting of 10 (13.7%) tertiary institution (TI) and 63(84.9%) secondary HFs in 11 States had functionality status of 95% while MSH-supported 22 GeneXpert in 5 States had 98% functionality in 5 (22.7%) TI and 17 (77.27%) Secondary HFs. Modules, inverters and other ancillary equipment had >95% functionality, 100% warranty and calibration with commodities stockout in 5 (5.3%) States. There was 99% timely submission of bi-weekly report by HFs during the period. GeneXpert optimization was observed across 97% of HFs.

Conclusion: Key Performance Indicators (KPIs) monitoring excel tool can be useful for GeneXpert optimization, timely result return leading to improved patient care and public health response.

Scale up of the tool to other states and facilities is recommended.

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Addressing Prolonged HIV Viral Load Turn Around Time Through Participatory Stakeholders' Engagement; A Case Study of ACE 6 PROJECT Intervention at NIMR MEGA PCR Laboratory, Lagos State, Nigeria

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Background: Nigeria has an estimated 1.9 million people living with HIV (PLHIV), 1.7million of which are on ART. Viral Load (VL) is the gold standard for monitoring PLHIVs on treatment. In Nigeria, optimal Sample-Result Turn-around Time (TAT) is defined as 10 days or less. The Nigerian Institute for Medical Research (NIMR) Lab located in Lagos, Nigeria, functioned at a fraction of installed capacity due to several factors with resultant long TAT. The PEPFAR/USAID-funded Accelerating Epidemic Control of HIV/AIDS cluster 6 (ACE 6) which is implemented by Heartland Alliance LTD/GTE commenced support for the facility in January 2022. This study aims to demonstrate program experience in addressing issues at NIMR and improving TAT through periodic review of progress.

Material and Methods: Between January and April 2022, 5 stakeholder engagement meetings were held involving the laboratory and administrative staff of NIMR, including the Director General's Office. During these meetings, discussions focused on unveiling the challenges that hindered full capacity optimization of the lab. Interventions included improved communication among lab personnel and between the equipment and commodity suppliers. Key performance indicators were jointly developed and tracked daily by both management of HALG and NIMR. Human Resource

for Health was improved through retraining and performance tracking.

Results: In the four months (October 2021 to January 2022) pre-intervention, 45,946 samples were analyzed with an average turnaround time of 21 days. Between February and July 2022 (6 months' time), 119,631 samples were analyzed with an average TAT that dropped from 12 days and steadied at 7 days for the last three-month post intervention. The national TAT standard was achieved and surpassed despite the increased number of samples.

Conclusion: Participatory engagement with stakeholders at PCR labs and performance tracking provides a sustainable means of improving lab functionality and reducing TAT.

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Evaluating Some Immuno-Hematological and Clotting Profile In HIV/AIDS Co-Infected With Malaria Among Participants Attending ART Clinic at Infectious Disease Hospital Kano, Nigeria

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Background: HIV infection may be worsened when Malaria is comorbidity. Malaria endemicity in tropical counties a concern of note especially among people living with HIV. Comorbidity of both disease remains public health concern needing attention. Consequent of HIV and Malaria co-infection and association with immuno-hematological and clotting parameters not well elucidated. Objective: To evaluate prevalence of HIV and malaria co-infection in association to immuno-hematological, clotting parameters.

Material and Methods: In a cross section designed, a total of 175 HIV+ and 50 HIV- control randomly selected participants were evaluated between October 2014- July 2015. Upon ethical approval, Clinical and epidemiological information were collected using well-structured questionnaire/clinical details from Electronic Medical Record. Participants Venous EDTAK2 anticoagulan, blood samples collected using standard methods. Screening of malaria by rapid diagnostics confirmed by blood smear microscopy. Complete Blood Count (CBC) determined by Automated Beckman coulter analyzer, Prothrombin time (PT) /Partial thromboplastin time test (PTTK) by manual method and CD4+ count enumerated by Cyflow-partec. Data collected in excel cleaned, reviewed, and analyzed in SPSS 20. Chi-square and T test employed to evaluate variables of interest at p=5%, CI=95%.

Results: Of 175 HIV+ 98 (56%) female Mean Age \pm SD (range) HIV+ 37.20 \pm 10.64 (18-80) ,HIV- 32.2 \pm 10 (18-57). ART-experienced 110(62.9%). Malaria prevalence (36%) among HIV+, (13%) HIV- control with no statistical significance difference (p=0.224). Three CBC indices of eight evaluated statistical significant difference in Hemoglobin-HBg/dl p=0.021, Hematocrit-HCT% p=0.004 and Red blood cells-RBCX10¹²/l p=0.016 among HIV+ /malaria+ on ART and Non-ART. PT and PTTK tests was higher among ART compared to Non-ART but statistical significant difference was only in PT (27.95s +1.31 95% CI 25.35-30.54 p=0.021). ART regimen increased PT but statistical significant difference was among ART participants on AZT/3TC/NVP regimen (p=0.017) and AZT/3TC/EFV regimen (p= 0.03). Mean CD4+ count HIV infected/control was 291 \pm SD(15.3) cells/ μ l and 572 \pm (SD) 24.2 cells/ μ l with statistically significant difference (p= 0.001).

Conclusion: Screening CBC, PT, CD4+ count have propensity impact on HIV and malaria co-infection than HIV+ only. Clinicians should monitor HB/PCV, RBC, PT and CD4+ regularly among HIV+ with malaria on ART for better health outcomes.

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Determinants of Late HIV Presentation at Ndlavela Health Center in Mozambique

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Background: There has been tremendous progress in the fight against HIV worldwide; however, challenges persist in the control of HIV infection. These challenges include the high prevalence of late presenters. There are many disadvantages of late presentation—from reduced survival of the infected person to the risk of transmitting the infection. This research aims to analyze the factors that influence the late presentation in patients attending Ndlavela Health Center in Mozambique.

Material and Methods: A retrospective cross-sectional study was carried out at Ndlavela Health Center including patients diagnosed with HIV between 2015 and 2020. The European Late Presenter Consensus working group definitions were used, and univariate and multivariate logistic regression were used to identify factors associated with late presentation.

Results: In total, 519 participants were included in the study, of which nearly 47% were classified as late presenters. The male gender (AOR = 2.41), clinical suspicious test (AOR = 4.03), initiated by the health professional (AOR = 2.1,9), and fear of stigma (AOR = 2.80) were the main risk factors for late HIV presentation.

Conclusion: Factors that are potentially determinant for late HIV presentation were identified. Actions are needed to focus on risk factors that are most likely to delay presentation.

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Performance of the BD FACSVia™ Flowcytometry System for Enumeration of Immune Cells in Patients on ART

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Background: Flowcytometry is a technique used in the laboratory for characterization and enumeration of different immune cell populations. For people living with HIV, CD4 and CD8 enumeration is used as a proxy for immune reconstitution and evidence of good clinical progression after initiating treatment. The accuracy of these measurements is critical as the results form the basis upon which clinical management decisions are made. Thus, laboratories must assess new equipment performance by measuring accuracy, precision, and linearity to guarantee reliability. We assessed the performance of the BD FACSVia™ Flow Cytometry System for enumeration of CD3, CD4, and CD8 in patients on antiretroviral therapy.

Material and Methods: Blood was collected in 4ml EDTA tubes following standard phlebotomy procedures for 40 patients enrolled in ongoing clinical trials on ART. Utilizing BD recommended procedures, the samples were tested in duplicate, and results were averaged on both the BD FACSVia™ and the comparator BD FACSCanto™ II. Bland-Altman plots were used to assess agreement between the two instruments. UK NEQAS provided six stabilized samples for linearity determination (Panel ID 10560), which were assessed in duplicate. The intermediate precision was based on 20 runs split into 5 runs per day utilizing CD-Chex Plus® normal and low controls, while repeatability was evaluated with 20 replicates. A general linear mixed model was used to account for repeated measures within sample.

Results: There was 100% concordance between the BD FACSVia™ & BD FACSCanto™ II analyzers as CD3, CD4, and CD8 absolute values and percentages for the former were within 10% of the reference. Relatively good agreement between the two instruments was illustrated. The BD FACSVia™ demonstrated good precision as each control's lymphocyte subset was within acceptable CV of <10% for repeatability and <15% for intermediate. All the T cell subsets showed no evidence of nonlinearity as there was statistically significant curvature in the data, and no sample averages fell outside the 95% confidence interval.

Conclusion: The BD FACSVia™ Flow system generates results with the same level of accuracy, and precision and in the same linear range as the BD FACSCanto™ II system, and thus can be reliably used for CD3/CD4/CD8 profiling.

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Study of the Prevalence of the AgHBS Marker in Patients Detected From January to June 2022 at the Biotech Analysis Laboratory in Bamako

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Background: Hepatitis B virus infection is a real public health problem in the world. In Mali, the prevalence of hepatitis B is estimated to be between 15% and 17%, hence the setting up of this study to evaluate the prevalence of viral hepatitis B at the BIOTECH laboratory. According to the World Health Organization (WHO) 2021 report, the African region accounted for 26% of the global burden of hepatitis B and C disease with 125,000 associated deaths. About 70% of all hepatitis B cases worldwide are concentrated in Africa.

Material and Methods: We conducted a cross-sectional, retrospective study of patients screened at the BIOTECH laboratory in Bamako. It took place from January to February 2022 on 578 screened patients. For the analysis of our samples we used the rapid test (HBsAg strips), the test is based on

the determination of HBsAg. During the two months, 578 patients were screened. Of these patients, 409 were included in the study, 49 of whom were carriers of hepatitis B surface antigen S, i.e. a frequency of 12%. Hepatitis B infection is more frequent in males, with 6.4%, compared with 5.6% in females.

Results: The majority of infected patients are found between the age groups of [30-40] years with a rate of 30.6% followed by [20-30] years with a rate of 24.5%.

Conclusion: In view of these results it can be said that men should voluntarily present for HBsAg screening, as hepatitis B constitutes a public health problem with serious complications such as cirrhosis, fibrosis and hepatocellular carcinoma.

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Performance Verification of the ATILA Biosystems Fluorescent Qualitative Detection System for the SARS-CoV-2 Detection in Clinical Specimens

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Background: The Atila SARS-CoV-2 assay is a random-access platform that can detect the SARS-CoV-2 virus from raw samples without RNA extraction. It uses the iAMP COVID-19 detection kit, which is a multiplexed, real-time fluorescent Reverse Transcriptase (RT)-isothermal assay based on Atila's proprietary isothermal amplification technology. It is designed to specifically detect RNA and later cDNA from the N gene and ORF-1 ab of the SARS-CoV-2 virus in nasal, nasopharyngeal, and oropharyngeal swabs from patients with signs and symptoms of infection who are suspected of COVID-19. We conducted a validation to evaluate the performance of the Atila SARS-CoV-2 assay for the detection of SARS-CoV-2 by measuring its accuracy and precision in a clinical setup.

Material and Methods: Eight positive and eight negative external samples characterized by Thistle Quality Assurance and preserved in Viral Transport Media were used for accuracy. For intra-run precision, at least 20 replicates of a negative patient sample and 20 replicates of a positive patient sample were assayed in one run. Inter-run reproducibility was calculated from data collected from positive and negative controls processed over 16 weeks. Precision was assessed using the numerical Cyclic Threshold (CT) value from which the Coefficient of variation (CV) was calculated and an acceptance criterion of 10% was used for analysis.

Results: There was 100% concordance between negative and positive samples pre-characterized by Thistle Quality assurance and the Atila Biosystems system. The average CT from the positive control for inter-run precision over 20 runs was 15.22±1.89. The CV calculated at 6.36% and was within the 10% acceptable limit. For intra-run precision, the mean CT for the positive sample was 15.85±0.78. The CV was 4.97%, which was within the acceptable limit. All pre-characterized negative samples tested negative with a CT value of zero showing that no SARS-CoV-2 genetic material was amplified.

Conclusion: This validation confirms that Atila Biosystems has acceptable accuracy and precision for SARS-CoV-2 detection in clinical samples. The method can thus be used for the detection of SARS-CoV-2 in patients with COVID suspicion.

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Laboratory Samples Errors at Namibia Institute of Pathology Among State Doctors and Nurses, Erongo Region, Namibia

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Background: Diagnostic laboratory is the epicenter of healthcare sector, and because patient management depends on the laboratory services, it is significant that the quality of these services is guaranteed. However, in the laboratory setting, blood specimens may be rejected for a variety of reasons, which may have substantial clinical consequences for the patient safety. The sampling phase which is outside of the laboratory and beyond the control of the laboratory professionals has been highlighted as the leading contributor of diagnostics errors rates, accounting for 70% of errors in the laboratory. This study aimed to determine the major causes of samples collections errors because of sample collection among clinicians in Erongo Region.

Material and Methods: This cross-sectional quantitative study was conducted among the state doctors and nurses at district hospitals in Erongo Region with a sample size of 14 doctors and 153 Nurses. The assessed the data of sample rejections recorded at the four NIP laboratories within the Erongo region, in 2020 and 2021. The data was collected and analyzed using Statistical Package for Social Science (SPSS) 25.0 program.

Results: During the two year period (2020 –2021), NIP Walvis Bay had a significant improvement (38.4%) of sample rejections in 2021 as compared to 2020, however, the laboratory recorded the highest rejection rates in comparison to the other laboratories in the region. Missing specimen/ no specimen received had been the most predominant reason for sample rejections among the laboratories in the region accounting for 21.2% and

28.5% of rejected samples in 2020 and 2021 respectively. Lack of specimen collecting materials had an influence on the sample rejections.

Conclusion: To reduce the sample rejections, NIP need to focus on strengthening the relationship with the clinicians by constantly providing adequate training and education and ensure the availability of sufficient materials required in the collection of patients' samples by the district clinicians. It is further recommended that the clinicians engage or consult with the laboratories to seek clarity on the collection and handling of samples to avoid more sample rejections.

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Intensive Monitoring Improve Access to Pediatric Dolutegravir and Viral Suppression Among Younger Children Living With HIV in Nampula Province, Mozambique

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Background: Pediatric treatment optimization has improved HIV outcomes for children worldwide. However, for children living with HIV (CLHIV) below 20kg, poor palatability of the pediatric formulation of lopinavir and ritonavir (LPV/r) can lead to poor health outcomes, and by the end of 2021, only 68% of CLHIV aged 0-4 years had viral load (VL) suppression in Nampula Province in Mozambique. The introduction of pediatric formulation of dolutegravir (pDTG) by the Mozambique Ministry of Health (MOH) in late February 2022 presented an opportunity to overcome this challenge.

Material and Methods: ICAP at Columbia University worked in collaboration with MOH at national and subnational level to support pDTG roll-out to CLHIV below 20kg at 59 health facilities (HF)

in Nampula Province, including data review to inform the provincial distribution plan, training and mentoring of providers, weekly monitoring of transition among CLHIV attending each HF and monthly monitoring of pediatric formulations and regimen consumption per HF. Intensive monitoring enabled timely feedback to HF teams on missed opportunities, to readjust stocks and provide targeted technical assistance for HF with slow transition. We present VL data for the pre- and post-implementation periods to assess preliminary results among CLHIV age 0 to 4 years.

Results: By March 2022, 64% of CLHIV had already transitioned to pDTG and by May 2022 virtually all CLHIV (99.2%) were on a pDTG-based regimen. Data from the pre-implementation phase (Dec 2021-Jan 2022) showed that of the 5,179 CLHIV with a VL result, 3,547 (68%) had VL suppression, while post-implementation data (Oct-Nov 2022) indicated 83% (4,922/5,937) had VL suppression, an increase of 22.1%.

Conclusion: Close monitoring, timely support for supply chain issues and technical assistance enabled rapid transition to optimized regimens among this vulnerable population, leading to early changes in viral suppression among young CLHIV.

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Children HIV Positive Seeking Health Care to Treat Diarrhea Have Increased Chance of Additional Health Impairment in Six Hospitals in Mozambique

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Background: In 2021, children up to 15 years accounted for approximately 4% of the total population living with HIV worldwide (1.7/38.4

million). HIV infection may weaken the immune system, contributing to the appearance of additional conditions such as respiratory diseases, diarrhea, and infection by opportunistic parasites (e.g., *Cryptosporidium*). Accessing children's clinical profiles may increase the health facilities' readiness to care for and treat a child with HIV and diarrhea. We performed an exploratory analysis to determine factors associated with HIV status in children admitted with diarrhea in Mozambique.

Material and Methods: We conducted an exploratory analysis between May 2014 and April 2022 of an ongoing cross-sectional hospital-based surveillance in six sentinel hospitals in four Mozambican provinces in children less than five years admitted with diarrhea as the main reason to seek health care. A semi-structured questionnaire was administered to the children's guardians and a single stool sample was collected to diagnose intestinal parasites by Ziehl-Neelsen modified technique. HIV status was recorded from the vaccination card and/or medical records. Descriptive statistics, chi-square, and Mann-Whitney U tests were used. Estimates with p-value < 0.05 were considered statistically significant.

Results: A total of 2032 children were included, and HIV prevalence was 9.8% (200/2032; 95% CI: 8.6 – 11.2). HIV was higher in children with pneumonia compared to children without pneumonia (18.8% [9/48] versus 9.1% [167/1826]; p = 0.039). Children born with low-birthweight were more likely to be HIV positive (14.2% [32/226] versus 8.8% [127/1449]; p = 0.010; absolute difference, 5.4%, 95%CI: 1.3 – 9.5). HIV was higher in children infected by *Cryptosporidium* (15.9% [18/113] versus 9.9% [142/1433]; p = 0.043). The median (quartile range; minimum–maximum) length of days at the hospital until discharged was significantly higher in children with HIV compared to the HIV negative, 5 (3 - 7; 0 – 50) and 4 (3 - 6; 0 – 55) respectively (p = 0.025).

Conclusion: HIV-positive children admitted with diarrhea had an increased proportion of pneumonia, low-birthweight, infection by *Cryptosporidium*, and long length of hospital stay compared to children HIV-negative. Integrated services considering multiple conditions on the child, especially HIV-positive, should be considered.

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High Acceptability and Preference for Pediatric Dolutegravir 10MG Among Patients in Nigeria at 1- And 6-Month Follow Up, an Observational Study

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Background: Nigeria is an early adopter country of the generic formulation of pediatric dolutegravir 10mg (pDTG) that became accessible in December 2020. This study aims to assess the acceptability and preference of pDTG among patients newly initiated or transitioned to the drug. Findings from the study was used to guide national scale-up.

Material and Methods: Pediatric patients weighing >3kg and <20kg were enrolled between September and December 2021 in 7 sites across 7 state (Akwa-Ibom, Benue, Cross river, Lagos, Plateau, Rivers and Sokoto). Acceptability and experiences were assessed through surveys conducted with patients and their caregivers as respondents at 1 and 6 months following pDTG initiation using a structured questionnaire. Participants were asked about side effects, ease of administration, and regimen preferences. Data from 1- and 6-month follow-ups were analyzed for frequencies and trends.

Results: The study enrolled 180 patients and the mean age was 4.7 years, with 98% being treatment experienced. At month 1, 99% of the treatment

experienced respondents prefer the pDTG-based regimen to their previous regimen, this increased to 100% at month 6. On ease of administration, at month 6, 99% and 100% of respondents respectively reported that pDTG tastes better and was easier to administer than previous regimen, compared to 99% and 96% respectively at month 1. 99% of respondents at both months 1 and 6 were satisfied or very satisfied with their pDTG regimen. The most common side-effect reported at months 1 and 6 was increased appetite (25% and 43% respectively). 97% and 94% of respondents at months 1 and 6 respectively reported that the patient either gained weight appropriately or had no change in weight. Hyperactivity was reported by 29% of participants at month 6.

Conclusion: There is a high acceptability and preference for pDTG compared to legacy regimens such as LPV/r, with improved taste and ease of administration. Increased appetite was the most common side-effect reported. With the favourable findings from the study to date, national HIV program has commenced scale-up of pDTG with emphasis on pharmacovigilance. Further follow-up at 12 months will provide more evidence of pDTG's impact.

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Performance of Family Index Testing Versus Other Case-Finding Strategies for Paediatric HIV in Four Nigerian States

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Background: In Nigeria, the prevalence of HIV among children 0-14 years is less than 1%, however, this translates into an estimated 140,000 children living with HIV (CLHIV). Only ~47,000 CLHIV are receiving treatment through the Nigeria PEPFAR

program. In September 2019, Nigeria adopted a Paediatric ART Surge Program with family index testing (FIT) as a major case-finding strategy. FIT relies on testing biological children of adults known to be living with HIV. We evaluated the FIT contribution to paediatric HIV case-finding against all other case-finding strategies.

Material and Methods: A cross-sectional study was conducted to compare the impact of FIT against facility-only provider-initiated testing and counselling; testing at emergency, in-patient, malnutrition, and TB wards; mobile and community testing, and STI case-finding strategies for CLHIV. The study was conducted in four states (Federal Capital Territory, Nasarawa, Rivers, and Katsina) supported by the Institute of Human Virology Nigeria. Data was collected from January to September 2022 and analyzed by chi-square at <0.05 significance.

Results: A total of 14,878 CLHIV were tested by FIT, with 211 (1.4%) testing positive. A combined 77,850 children were tested via the other methods, with 315 (0.4%) testing positive. The non-FIT strategy with both the most children tested and highest yield was targeted “hotspot” community testing, with 39,096 tested and 197 (0.5%) testing positive. FIT had a significantly higher yield for case-finding than all other methods combined: 1.4% vs 0.4%, ($p = 0.000$).

Conclusion: FIT made a significant contribution to case-finding for CLHIV in our four-state HIV program. These findings strengthen existing evidence for continued funding, technical support, and scale-up of FIT as a high-impact case-finding strategy for CLHIV in Nigeria. Furthermore, caregivers and healthcare providers should be educated on FIT to increase its uptake, spread, and scale.

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Favorable Outcomes of Option B+ Strategy Despite COVID-19 Restrictions: Retrospective Cohort Study in Zambézia Province, Mozambique (2019-2021)

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Background: In response to the COVID-19 pandemic and its mitigation measures, Mozambique Ministry of Health’s HIV program rapidly expanded differentiated models of care. Quarterly dispensation of antiretroviral therapy (QD) for pregnant women (PW) was implemented April-August 2020. We herein describe trends of pre-pandemic (April 2019-March 2020) and within-pandemic (April 2020-March 2021) maternal and infant HIV care outcomes.

Material and Methods: Aggregated routine data from 173 health facilities of Zambézia Province for PW initiating ART and their HIV-exposed infants (HEI) were included. Outcomes included: proportion of PW retained in care 3- and 6-months post-ART initiation, early infant diagnosis (EID) coverage, and proportion of positive tests among HEI by 9 months of age. Generalized linear mixed-effect models were used to compare trends pre- and during-COVID-19.

Results: The odds of PW being retained at 3-months decreased significantly to 56.6% (by ~15%) in April 2020, immediately after COVID-19 mitigation measures were put into place (OR 0.57 [95%CI:0.44–0.74], $p < 0.001$). During COVID-19 period, the proportion of PW retained increased over time, with the odds of being retained at 3-months increasing approximately 3.9% per month

(OR 0.57 [95%CI:1.06-1.10], $p < 0.001$). The odds of PW being retained at 6-months increased (OR 2.16 [95%CI:1.50–3.10], $p < 0.001$) during-pandemic. Although the odds decreased during-pandemic (OR 0.91 [95%CI:0.88–0.93], $p < 0.001$), the 6-month retention proportion remained higher than in the pre-pandemic. EID coverage among HEI experienced an increase immediately after April 2020 (OR 1.94 [95%CI:1.26-2.98], $p = 0.003$) and continued increasing, with the odds of HEI undergoing EID testing increasing $\sim 4.7\%$ per month. There were no significant differences pre- and during-COVID-19 in terms of the proportion of HEI testing positive, with the proportion of HEI testing positive decreasing 2.7% per month, over time regardless of period.

Conclusion: In Zambézia Province, the pandemic and associated restrictions did not adversely impact maternal retention in care rates, EID coverage or EID positivity rates among PW and their HEI. Despite transient reductions in early retention, the rapid expansion of a variety of tailored differentiated models of care including QD for PW, introduced as response to COVID-19 pandemic, appeared to have a favorable impact on mother and child outcomes.

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Abstract 664 was withdrawn.

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Utilizing Traditional Birth Attendants to Improve Uptake of Prevention of Mother-To-Child Transmission of HIV Services in Nigeria

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Background: According to 2021 UNAIDS estimates, 34% of pregnant women living with HIV (WLHIV) in Nigeria received treatment and 15% of HIV-exposed infants (HEI) received an HIV test by two months of age. Most pregnant women (PW) in Nigeria access community-based care from traditional birth attendants (TBAs) who acquire skills by apprenticeship. This analysis describes results of TBA engagement to improve HIV testing and referrals of PW and infants for prevention of mother-to-child transmission (PMTCT) services.

Material and Methods: From October 2020 to December 2021, the Faith-Based Action for Scaling Up Testing and Treatment for Epidemic Response (FASTER) initiative provided TBAs with training, HIV testing supplies, reporting tools, and referral information to 24 health facilities in eight states. Successful PMTCT referrals were defined by documentation of mother/infant enrollment in PMTCT at a health facility.

Results: Of 104 TBAs trained, 31 (30%) TBAs from five states reported data. Reasons for low reporting from TBAs included opting out after training, concern for regulatory authorities, and literacy level. Of 3,105 PW tested, 29 (0.9%) were HIV-positive. TBAs successfully referred 22 (76%) WLHIV for ART during pregnancy and 5 (17%) during breastfeeding; among WLHIV initiated during pregnancy, 18 (82%) achieved viral suppression (< 1000 copies/mL), two (9%) were unsuppressed, and two (9%) were loss-to-follow-up (LTFU). Of 29 HEIs, 25 (86%) infants were successfully referred for early infant diagnosis (EID), 2 (7%) mothers/infants were LTFU, and 2 (7%) mothers were not on ART/refused referral. Of 25 infants tested, 6 (24%) were HIV-positive and linked to ART; 2 (33%) were born to virally unsuppressed mothers who initiated ART during pregnancy, and 4 (67%) were born to mothers who initiated ART during breastfeeding. Of 19 HIV-negative infants, 11 (58%) received a second EID test six weeks after cessation of breastfeeding and remained negative, while 8 (42%) were breastfeeding at study conclusion.

Conclusion: EID coverage and HIV-positivity was high among infants referred from TBAs. Barriers to service delivery included delayed ART uptake, retention of mother/infant pairs, and delayed VL and EID result return. Increasing engagement and referrals from TBAs may improve access to PMTCT services for pregnant WLHIV seeking community-based care.

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Improving Access to Social Support and Household Economic Strengthening Intervention Among Children Living With HIV in Southern Nigeria: Translating Evidence to Practice

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Background: Social determinants of health account for 30-55% of the treatment outcome, and children living with HIV (CLHIV) face significant risks and vulnerability. To reduce health inequality and optimize treatment outcomes among CLHIV, PEPFAR through USAID facilitated collaboration between its treatment program and the Orphan and Vulnerable Children (OVC) program in Akwa Ibom and Cross Rivers States, Nigeria. This paper describes how this collaboration improved the enrollment of CLHIV in the OVC program.

Material and Methods: Several meetings were held between the treatment partners (ECEWS) and the OVC partners in Akwa Ibom to identify areas of collaboration and improve synergy. CLHIV (< 17 years) were referred for OVC enrolment after initiating antiretroviral therapy. Caregivers who consented were enrolled on the OVC program at the community, household enrollment number of caregivers returned to the facility, and documented on the electronic medical record. The OVC program provided community-based adherence support, financial support for clinic visits (drug refills and viral load tests) and medical emergencies, nutritional counselling and supplements, and household economic strengthening to enrolled households. They also supported the treatment program on case identification and linkage to treatment. Joint visits by case workers from the treatment and OVC partners were conducted to CLHIV for service delivery. Joint monthly meetings were held and used to address data discrepancies.

For this paper, viral load outcome assessed for children enrolled on the OVC program include viral suppression (<1000cps/mls) and undetectable viral load levels (<50cps/mls).

Results: A total of 4,840 (F:2513, M:2327) children were enrolled on the OVC program as of September 2022 representing 75% (4840/6482) of all CLHIV on treatment. Of these children enrolled, 98.8% (4637/4691) of those eligible for viral load test, had viral test done, 98.4% (4564/4637) were virally suppressed and 92.6% (4293/4637) had undetectable viral load levels.

Conclusion: Systematic collaboration between the treatment and OVC programs improved access of children living with HIV on ART to other socioeconomic services provided by the OVC program.

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Using Mother-Baby Pair Profiling Approach to Reduce Mother-To-Child Transmission Among HIV-Exposed Infants Between 0 and 18 Months of Age -Case for North Eastern Uganda

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Background: Uganda has made remarkable progress in reducing mother-to-child transmission (MTCT) from 25% in 2010 to 6.76% in 2021, however despite the high coverage of Prevention of MTCT services. The national MTCT is still above 5% the threshold for MTCT elimination due to interruption in treatment, late diagnosis & treatment initiation of the mother, and non-suppression among other factors. We aim to describe how mother-baby pair (MBPs) profiling-a patient-centered approach, identified gaps in the MTCT services, and supported in designing context-

specific interventions to reduce MTCT in North Eastern Uganda.

Material and Methods: Data analysis was done and all 13 facilities with a positive infant were supported to form a mother-baby pair (MBPs) profile team that consisted of four health workers including clinicians, Laboratory staff, midwives, and mentor mothers. An HIV-positive infant profiling tool was developed and shared. HIV-positive infants and their caregivers line-listed, profiling meetings were scheduled, and Mother & infant Auditing was conducted. Possible maternal and infant root causes for seroconversion were elicited, and respective patient-centered interventions were designed and implemented to close the gaps. Implementation was monitored through weekly data reviews and strategies rolled out to other 112 facilities.

Results: A total of 24 Mothers and infants living with HIV(MBPs) were profiled, of these 46% (11/24) mothers were 25+, 37% (9/24) were 20-24 years and 17% were 10-19 years. 42% (10) had started Antiretroviral therapy before pregnancy, 46% (11/24) during pregnancy, and 13% (3) during postnatal. Of the positive infants, 58% (14/24) were males and 42% (10/24) were females. 54.1% had their first PCR done at 0-2 months, and only 38% (9/24) infants received Nevirapine prophylaxis. Possible causes of seroconversion on profiling included Maternal non-suppression (45.8%), Postnatal seroconversion (20.8%), and late maternal diagnosis (33.3%). After the interventions the MTCT reduced by 90% from 4.1% (17/418) in October-December 2019 to 0.4% (2/493) in July-September 2022 with an overall MTCT rate of 1.6% (100/6,187) in 3 years.

Conclusion: Mother-baby pair profiling remodified the health systems by informing the implementation of clients-centered interventions thus reducing MTCT in North Eastern Uganda. We recommend replication of this approach in regions with similar program challenges.

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A Pilot Survey on Knowledge and Attitudes on “U=U” among People Living with HIV, Health Care Workers and the General Population in Southern and Lake Zones of Tanzania

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Background: Undetectable Equals Untransmittable (U=U) is a slogan used to bring awareness about HIV transmission, prevention, and treatment, and to promote stigma reduction. This study describes knowledge and attitudes concerning U=U among different groups of people in Tanzania.

Material and Methods: Survey was conducted through administered questionnaire to different populations which included adolescents and youth living with HIV (ALYHIV), health care workers (HCWs), and the general population on knowledge and attitude towards U=U in the Southern and Lake Zones of Tanzania between August 2021 to December 2021. General knowledge assessed by asking about the meaning, benefits, and importance of reaching U=U. ARV knowledge and their benefits were assessed through questions about general HIV services and understanding on ARV adherence to reaching U=U. Attitude was assessed via questions concerning feelings about children born to HIV-positive mothers, living with an HIV-positive partner, and the possibility of stopping stigma against ALYHIV. Multivariable analysis was used to measure associations.

Results: The study included 551 participants: 288(52.3%) females, 229(41.6%) with secondary education, and 254(47.6%) ALYHIV. Most participants had some knowledge about U=U (58.8%). Results showed that illiterate compared to

secondary education is associated with increased general knowledge about U=U (aOR=2.73, 95% CI 1.19–6.28; p=0.018). Age between 15-19 and 20-25 years compared to 10-14 years was associated with increase of good general knowledge towards U=U (aOR=2.45, 95% CI 1.16–5.17; p=0.018 and aOR=6.03, 95% CI 1.78–20.39; p=0.004, respectively). Concerning ARV knowledge, primary education compared to illiterate is associated with the decrease of knowledge (aOR=0.37, 95% CI 0.19–0.71; p=0.003). Overall, the attitudes of participants were positive with 99.3% (286/288) of females and 95.8% (252/263) of males reporting favorable attitudes toward U=U.

Conclusion: A overwhelming majority of participants had favorable attitudes towards U=U. Good knowledge about U=U was significantly associated with higher level of education, living with HIV, and being an older adolescent/youth. Surprisingly, increased education level was associated with worse knowledge about ARVs.

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Prevalence and Risk Factors of Detectable HIV Viral Load Among Pregnant Women With HIV Infection Seeking Antenatal Care in Southern Malawi

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Background: Pregnant women with diagnosed HIV infection are treated with antiretroviral therapy (ART) to prevent transmission of HIV infection to infants. Despite high ART uptake, vertical transmission of HIV continues to occur. Maternal viral load (VL) is the main determinant of vertical transmission. We sought to examine the prevalence and risk factors of detectable VL among pregnant women with HIV infection presenting for antenatal care (ANC) in Southern Malawi.

Material and Methods: We evaluated VL in pregnant women with HIV infection who were either on ART at least 6 months before conception (pre-conception ART) or not on ART (ART naïve) when they presented for the first ANC visit at 20-36 weeks of gestation. We used logistic regression to identify the demographic characteristics associated with detectable VL in these two groups, reporting the results as odds ratios with 95% Confidence Interval.

Results: Of 816 women, 67.9% reported pre-conception ART and 32.1% reported to be ART naïve. Among women in the pre-conception ART group, 10.8% had detectable VL, and 9.9% had VL >1,000 copies/ml (WHO criteria for virological failure). In adjusted analysis, detectable VL was associated with younger age (p <.0001), no previous deliveries (p <.0001) and attending first ANC appointment in the second trimester of the pregnancy (p =.005) compared to the third trimester. Among women in the pre-conception ART group, 30.6% reported poor adherence, but this was not significantly associated with virological failure. One fifth (20.2%) of ART naïve women were found to have an undetectable VL at the first ANC visit.

Conclusion: In this cohort, approximately 90% of women who had initiated ART prior to conception had an undetectable viral load at first ANC visit. Screening women for ART adherence will not identify women with detectable viral loads, hence the need for VL testing. This demonstrates good success of the ART program but suggests that additional improvements could be achieved.

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Maximizing Early Infant Diagnosis (EID) Opportunities Using the Strategic Placement of the POC Machines to Improve the TAT for EID of HIV in Rural Clinics in Umzingwane Zimbabwe

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Background: Novel point-of-care (POC) devices for infant HIV testing provide prompt result return and increase ART initiation, improving survival among infants with HIV. WHO recommendations state that all children exposed to HIV be tested within six weeks of birth to ensure that all infants acquiring HIV are initiated on treatment early. Challenges with early infant diagnosis (EID) in Umzingwane district include the absence of POC machines while relying on a centralized laboratory service delivery. This system results in long turnaround times (TAT). Our objective was to determine the effect of introduction of a POC machine on TAT of EID results in Umzingwane district, Zimbabwe.

Material and Methods: We carried out a retrospective records review of data from 496 samples transferred from 4 clinics between January 2019 to December 2022. One EID POC machine was placed at the district hospital in November 2021 in Umzingwane to decentralize services from the provincial hospital. The laboratory health workers were mentored on proper method of collection, storing, documentation as well as transportation of dry blood spot (DBS) samples to the laboratory from surrounding clinics. Data documented standard registers were abstracted into Excel. Comparisons of median (IQR) EID results TAT, pre- and post- EID-POC machine placement were done using the Mann-Whitney U test whilst proportions were compared using the Chi-square test.

Results: More EID results were received in the post- versus pre- EID-POC placement period 134 (77%) vs

217 (66%), There was a significant increase in the children who received their results post intervention ($p=0.014$). Of those EID results received, 14/217 (6%) were received \leq 1 week in the pre- versus the post- intervention phase, 17/134 (13%), $p=0.012$. Overall, EID results TATs were shorter in the post- versus the pre-intervention period [median1 (46.5) vs median2 (18) $p=0.001$]

Conclusion: Introduction of POC at district-level resulted in the observed decrease in the number of days between date of sample collection and date of result return to the mother-baby pairs.

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Improving Early Infant Diagnosis Using Out-Of-Facility Sample Collection for HIV Exposed Infants in Nigeria

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Background: Blood sampling for early infant diagnosis (EID) is the entry point into HIV care and treatment for HIV-exposed infants (HEIs). However, despite high out-of-facility delivery in Nigeria, access to these services have been restricted to health facilities. To complement this, EID sample collection was extended to the community through outreaches. We assessed the effect of this strategy on uptake of EID in Akwa Ibom, Nigeria.

Material and Methods: PEPFAR through USAID Accelerating Control of the HIV Epidemic (ACE-5) Project implemented in 21 local government areas in Akwa Ibom State, utilized a community-based ART management strategy where health personnel follow-up HIV-positive pregnant women until delivery for early infant diagnosis. HEIs whose mothers did not bring them to the facility for sample collection had their EID samples collected in the community by trained laboratory personnel using dried blood spot (DBS) cards. The DBS cards were transported, through the health facilities to a

centralized laboratory for analysis. Data was abstracted from an electronic database for a 9-month period before (October 2020-June 2021), and after (July 2021- March 2022) the introduction of the strategy. The number of infants eligible for EID sampling was estimated using the number of HIV-positive pregnant women identified within the cohort period (PEPFAR Monitoring Evaluation Reporting standards). EID coverage was calculated as the proportion of infants born to HIV-positive women whose sample was collected by 12 months of age and compared between periods using Mann-Whitney test statistics on STATA version 14.

Results: A total of 2,600 HIV exposed infants were eligible for EID sampling between October 2020 and March 2022 (1,352 pre- and 1,248 post-strategy implementation). EID coverage increased significantly from 94% (1271/1352) before the introduction of out-of-facility sampling, to 139% (1,731/1,248) after its introduction [p-value = 0.001; 95% CI = 0.031, 0.84].

Conclusion: Out-of-facility sample collection, when combined with the facility-based EID strategy improves access to EID among HEIs. Program with high number of out-of-facility delivery can consider such community-based strategy as an add-on for HIV diagnosis among HIV exposed infants.

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PMTCT Final Outcome Among HIV-Exposed Infants in Benue State, Nigeria: A 5-Year Retrospective Review From 2018-2022

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Background: Despite improved Anti-Retroviral Therapy (ART) coverage, Nigeria still has an unacceptably high HIV Mother-to-Child Transmission (MTCT) rate of 25%, contributing two out of every ten MTCT reported globally. Benue State currently have an MTCT rate of 11%. APIN in

partnership with government stakeholders and support from PEPFAR have deployed several strategies in a bid to eliminate mother-to-child transmission in Benue State. The objective of this retrospective review of program data was to review the trend in the MTCT rate among HEIs with documented final-outcomes from 2018-2022, to measure progress towards the elimination of mother-to-child transmission of HIV.

Material and Methods: The study was a retrospective review of records of HEIs who were offered early infant diagnosis and final outcome determined with a rapid HIV antibody test from 2018 to 2022. All the infants under the reviewed cohorts had at least one positive DNA PCR test done with a rapid HIV antibody test at 18 months of age. A data abstraction tool was designed and used to extract data from the National Child follow-up register in all 252 APIN-supported sites in Benue State. Data was analyzed in MS Excel to determine the trend in MTCT rate.

Results: During the 5-year review period, 33,032 HEIs had a documented final outcome across the 252 facilities, with 32,434 (98.2%) uninfected and 811 (2.4%) infected. There was a steady decline in the proportion of infants with transferred out and unknown outcomes, from 21% in 2018 to 10% in 2022. The MTCT rate reduced by 64%, from 2.3% in 2018 to 1.4% at the end of 2022.

Conclusion: This review has demonstrated the giant strides that have been made on the road to the elimination of mother-to-child transmission of HIV in Benue state. With sustained momentum in the interventions and strategies, Benue state can achieve zero vertical transmission by 2030.

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Sauti ya Vijana (SYV, The Voice of Youth): Experience in Pilot and Scale-Up of a Mental Health and Life Skills Intervention for Adolescents and Young Adults Living with HIV Across Four Regions of Tanzania

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Background: Sauti ya Vijana (SYV: The Voice of Youth) is a peer-led, group-based mental health and life skills intervention for adolescents and young adults (10-24 years of age) living with HIV (AYALWH) in Tanzania. SYV uses components of evidence-based psychotherapy in 10 weekly sessions (2 include caregivers) and 2 individual sessions. Session content was designed with AYALWH to address common challenges and worries. The original study showed promise to improve mental health, antiretroviral therapy adherence and HIV outcomes in the Kilimanjaro region, and is now being scaled in a fully powered effectiveness-implementation trial.

Material and Methods: The SYV pilot was completed October to December 2022 with AYALWH (one male and one female group in each age category: 13-14 years; 15-19 years; 20-24 years). Intervention sessions were held on Saturday mornings in four regions of Tanzania (Ifakara; Kilimanjaro; Mwanza; Mbeya). Three female and three male peer group leaders (25-29 years of age) facilitated each session and completed fidelity checklists and session notes that were discussed during weekly supervision. Descriptive statistics regarding acceptability, feasibility, and fidelity are presented.

Results: Sixty six participants (52% female) were enrolled in the pilot. Overall attendance was 85% including those that were dropped from the program; 96% when excluding the nine participants who were dropped. The 20-24 year-olds were the hardest age group to retain. Absence was due to work conflicts, school exams, or caregiving obligations. Based on the fidelity checklists, sessions took longer than expected (on average 120 minutes compared to expected 90 minutes), but content was well received, understood, and helpful to youth based on the discussions. Per one participant: "In 2022 I stopped using medicine again because I had given up and thought it was better to die. But when the Voice Of Youth project came, I attended the sessions and changed my decision of stopping my medicines. The session on handling stress made me feel valuable, now I am enjoying peace and taking my medicine every day."

Conclusion: Scaling a group-based, peer-led mental health intervention is challenging, but possible. The pilot confirmed the intervention was acceptable, feasible, and can be delivered with fidelity in new regions.

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DREAMS Mentor Driven Identification of Pregnant AGYW or Provision of ANC and PMTCT Services in Southern and Western Provinces of Zambia

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Background: In Zambia, teenage pregnancy is common, with nearly a third of girls aged 15-19 experiencing their first pregnancy. Pregnancy

among adolescent girls and young women (AGYW) is twice as common in rural areas compared to urban areas. Teenage pregnancies expose AGYW to various health risks including HIV infection and other sexually transmitted infections as well as maternal mortality, especially if they are not linked to appropriate antenatal care (ANC) services. The Determined, Resilient, Empowered, AIDS-free, Mentored, and Safe (DREAMS) initiative provides holistic health and youth empowerment to AGYW, and may provide an opportunity to identify pregnant AGYW. We present results on identification of pregnant AGYW and subsequent linkage to comprehensive ANC services via DREAMS Centers in rural Zambia.

Material and Methods: The Community Impact to Reach Key and Underserved Individuals for Treatment and Support (CIRKUIITS) project has been implementing DREAMS services at 15 centers in three districts: Mazabuka and Monze Districts in Southern Province and Mongu District in Western Province. From October to November 2022, a total of 30 community DREAMS mentors were recruited, trained in community prevention of mother to child transmission (PMTCT), and deployed in the community to identify pregnant AGYW. The girls were then invited to participate in DREAMS, and linked to ANC services at the facility of their preference. Here, they received comprehensive care including testing for HIV and other sexually transmitted infections and prevention services.

Results: A total of 14,223 AGYW were enrolled in DREAMS of which 1.1% (158) were identified as pregnant. The majority (67%, n=106/158) were 15-19 years old, 32% (51/158) were aged 20-24 years old, and 1% (1/158) were aged 10-14 years old. Out of the 158 pregnant AGYW, 64% (101/158) were eligible for HIV testing, and all were tested and linked to ANC. Fifty-seven (36%) were not eligible for testing as they had recent valid HIV test results.

Conclusion: Community-based interventions such as the DREAMS initiative offer a unique way to proactively identify pregnant AGYW, increase uptake of ANC, and prevent mother to child transmission of HIV.

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New Infant Infections in the Era of Eliminated Mother-to-Child-Transmission of HIV

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Background: In 2021 Botswana achieved “silver tier” status for elimination of Mother-to-Child-transmission of HIV (MTCT). Botswana has one of the world’s highest HIV prevalence among pregnant women, around 25%. MTCT rate is 15-45% without interventions but had decreased to an estimated 0,56-1.91% in Botswana in 2020, achieved through frequent testing and free access to ART. However, new infections in infants still occur. The aim of this study was to describe characteristics and PMTCT details for infants with a new diagnosis of HIV.

Material and Methods: Descriptive retrospective chart review. All infants born 2020-2022 receiving care at Botswana-Baylor Center of Excellence were included.

Results: 30 infants were identified. Four infants were born in 2020, 15 in 2021 and 11 in 2022. At the start of pregnancy 13 of the mothers knew their HIV-status to be positive. Of these, three women were on ART consistently, while 10 were off or poorly adherent. Information about viral load was not available. Thirteen women tested negative in early pregnancy; seven of these had sero-converted later in pregnancy or at delivery and were given ART at that time. Six women first tested positive at a postpartum checkup and hence received no PMTCT at all. Two women started ANC late, were found to be positive and started ART in the third trimester, and for two there was no information about testing or PMTCT. Of the infants, 12 received single drug prophylaxis, five received triple drug prophylaxis, and 13 received none or unknown ART. Seven infants were breastfed at some point, 14 were exclusively formula fed and for 9 there was no information regarding feeding listed.

Conclusion: This descriptive study shows that of the newly infected infants, the majority were born to

mothers who were either known to be living with HIV but off their medications, or to mothers who tested negative at some point during pregnancy to later sero-convert, a known risk factor for MTCT. This highlights the need to support women of childbearing age to stay adherent to ART as well as the need to prevent new infections in women during the critical time of childbearing and breastfeeding.

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Determinants of Retention of Mother-Baby-Pairs (MBPs) in HIV Care at Wakiso Health Centre IV, Wakiso District, Uganda

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Background: Retaining mother-baby pairs (MBPs) in care after birth is critical to providing effective prevention of mother-to-child transmission services and reduce the rate of paediatric HIV infection. Guidelines on the prevention of mother-to-child transmission (PMTCT) of HIV among infected pregnant/breastfeeding mothers aim at improving access to lifelong antiretroviral therapy (ART) for every HIV-positive mother. The helps in the elimination of mother-to-child transmission of HIV while keeping both the mother and the baby alive. Objectives: The aim of our study was to assess the determinants of retention of MBPs in HIV care in Wakiso Health Centre IV.

Material and Methods: The Mother-baby pair retention for Health study is an individual-randomized study evaluating the effectiveness of active patient follow-up compared with standard of care on the combined outcome of attrition of HIV-infected mothers and their infants at 6 months postpartum. Mothers/care takers were considered for the study and selected using simple random sampling techniques. Both qualitative and quantitative approaches were applied.

Results: The level of education ($p=0.033$), occupation of the mother ($p=0.056$), marital status

($p=0.000$), age of the mother ($p=0.01$), residence status ($p=0.78$), number of children ($p=0.24$) were associated with retention of MBPs at individual levels. Meanwhile for health system related determinants; lack of integration of MBP services at health facilities ($p=0.00$), Service quality ($p=0.00$), service providers ($p=0.00$), transportation ($p=0.00$) and long waiting hours ($p=0.79$) were associated with retention of MBPs. At behavioural levels; lack of Social support ($p=0.00$), Stigma and discrimination ($p=0.00$), Non-disclosure to a partner ($p=0.049$) and support system at home ($p=0.00$) were the leading determinants. Qualitatively it was discovered that health workers' attitudes and health workers' knowledge of clients were issues that determined the retention of the baby mother pairs in HIV care.

Conclusion: Retention of mother baby pair (MBPs) in HIV care is a critical matter and it minimizes cases of early death among the mothers and their babies. Individual factors need to be taken into consideration when providing services to the mothers. Behavioral predictors that significantly affected retention included stigma and discrimination, partner disclosure, long waiting times at the facility and social support systems.

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Assessing Gaps and Attrition Along the PMTCT Cascade in 10 Health Facilities in Southern Mozambican Province of Gaza

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Background: Despite significant advances in prevention of mother-to-child transmission (PMTCT) of HIV, Mozambique continues experiencing attrition in PMTCT services resulting in infant infections. Close review of the PMTCT cascade is needed to identify and target each stage where women and infants are lost.

Material and Methods: We conducted a secondary analysis of routine data captured in both electronic and paper-based facility records at 10 sites in Gaza province. HIV-positive women attending antenatal care (ANC) between January-March 2019 were included. Data were captured on maternal and infant characteristics, and whether they completed each stage of the PMTCT cascade: facility delivery, HIV-exposed infant (HEI) linkage to care where the mother received ANC, infant PCR test at <2 months, HIV rapid test at 9+ months of age, and follow-up through 18 months. We also explored factors related to infant linkage to care in bivariate analysis.

Results: A total of 701 HIV-positive women were included in analysis. At first ANC visit, 117 women (17%) were in first trimester and 475 (68%) were already on ART (most remaining women first tested positive at that visit). Records indicated that 523 infants (75%) were linked to HEI services at same facility; documented reasons for non-linkage included relocation/transfer (N=29), stillbirth/abortion (N=20), infant death (N=10) and maternal dropout/refusal (N=12). No infant linkage documentation was available for 115 pregnancies (16%). Linkage was significantly associated with maternal age at first ANC, ART pre-pregnancy, number of ANC visits, and delivery at same facility. Among infants linked to care, 463 (89%) were first tested within 2 months (10 HIV+), 57 tested between 2-18 months (4 HIV+), 2 without any result and 1 infant was not tested. Of the 453 HIV-negative infants, 386 (85%) had a rapid test between 9-18 months (3 HIV+). Overall, 17 HEIs tested HIV-positive from birth through 18-months, of which 16 started antiretroviral treatment.

Conclusion: We found critical gaps in the monitoring of HIV-positive pregnant women and their infants through the full cascade. Efforts are needed to increase access to PMTCT-related information and services, and strengthen the referral systems and address barriers preventing successful referrals and continuity of care throughout the cascade.

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Prevention of Mother-to-Child Transmission of HIV: Impact of Quality Improvement Collaborative on Early Infant Diagnosis in General Hospital, Wannune, Benue state

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Background: Although the rate of new HIV infections is on the decline, efforts towards “an HIV-free generation” will be in jeopardy if the coverage of early infant diagnosis (EID) of HIV remains suboptimal. Timely EID services ensure prompt linkage to antiretroviral therapy (ART) thereby reducing the morbidity and mortality of HIV-infected infants. The 2020 National Guidelines for HIV Prevention, Treatment, and Care states that all HIV-exposed infants should have DNA PCR testing or nucleic acid-based testing (NAT) at birth, 6-8 weeks of age, 9 months, and 8-12 weeks after complete cessation of breastfeeding. In General Hospital, Wannune, about 4,284 clients are currently supported by PEPFAR.

Material and Methods: Baseline EID coverage for the first DNA-PCR (6-8 weeks) gotten from April 2021 to September 2021 was 92%. The aim of the quality improvement (QI) project was to improve its coverage to 100% from October 2021 to September 2022. Under the guidance of the QI coaches, the facilities’ QI team used the Plan-Do-Study-Act (PDSA) cycle for implementation. Process mapping and root cause analysis were done. New change ideas were formulated, and closer monitoring led to the modification of existing ones.

Results: In the first month of the project, October 2021, the EID coverage was 50%. Following continuous medical education of the pregnant women, mentor mothers (peers as case managers

and role models), and focal persons for the prevention of mother-to-child transmission (PMTCT) of HIV, appointment reminders (at 4 weeks of age), and tracking for those who missed appointments, there was a marked improvement over the subsequent months (99% in September 2022). During the project, 81 (94%) out of 86 HEIs eligible had their first DNA-PCR done at 6-8 weeks. None was infected.

Conclusion: The improvement of EID coverage entails analyzing the processes, noting gaps, and proffering evidence-based solutions. It is a multidisciplinary team effort that through patient education and capacity building of service providers, there would be a significant improvement in EID outcomes and quality.

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Use of a Quality Improvement Approach to Improve HIV Retesting of Mothers Enrolled in Group Antenatal Care

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Background: Antenatal care (ANC) is a planned programme of medical care offered to pregnant women by a skilled birth attendant, from the time of conception to delivery, aimed at ensuring a safe and satisfying pregnancy and birth outcome. With the group ANC model, the first visit for all pregnant women aged 10-24 years is an individual visit. Then at subsequent visits, the usual individual pregnancy health assessment, held in a private examination area, is integrated into a group ANC session, with facilitated educational activities and peer support. Human immunodeficiency virus (HIV) testing as part of ANC is the first step in ensuring elimination of mother to child transmission of HIV, and if the pregnant mother is HIV negative on the first encounter, they should be retested 3 months later. In March 2022, baseline data showed that the HIV retesting rate among women attending group ANC in Kassanda district, Uganda was 40%.

Material and Methods: We implemented a quality improvement (QI) collaborative at three lower level public healthcare facilities. The QI collaborative approach included screening mothers aged 10-24 years with at least 3 months old HIV negative test results to check if they were eligible for retesting, peer mother support to encourage mothers know their HIV status, and health education by the midwife emphasizing the need to retest for HIV.

Results: HIV retesting among all eligible mothers in the three facilities improved from 40% (10/25) in March 2022 to 45% (10/22) in April 2022, to 61% (20/33) in May 2022 and then to 91% (72/79) in June 2022.

Conclusion: The QI collaborative demonstrated improving HIV retesting rates over time. This approach can be used to improve HIV retesting for mothers aged 10-24 years enrolled in group ANC in maternity.

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Abstract 680 was withdrawn.

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Improving Viral Load Coverage and Initiation of Realtime Clinical Interventions for Pregnant and Lactating Mothers in the COVID-19 Era

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Background: Viral load monitoring is critical for evaluation of effectiveness of antiretroviral therapy. Point-of-care VL testing has been feasible and preferred with less sophisticated technologies, no regular maintenance and easy to use to solve the challenges of turnaround time of results with the centralized conventional diagnostic technologies. Long TAT for VL results contributes to delayed initiation of key clinical management decisions like intensive adherence counseling, switch in case of a

treatment failure and enrollment to community clinical models. MoH rolled out POC VL testing prioritizing pregnant and breastfeeding mothers routinely every after 3 months. The Activity POC VL was intentionally piloted at 8 selected high-volume health facilities.

Material and Methods: Trained TOT at selected high volume sites who rolled out training of frontline health workers and lay workers including spoke sites. ART/MBCP WITs functionalised to monitor timely VL bleeding for eligible mothers, follow up on VL results through the Hub and use of VL results for patient clinical decision. Mixed fish-borne and 5-WHYS used to understand system and process gaps for VL coverage, tested and implemented the following changes that improved VL coverage among the eligible PBFW in the MBCP; Client VL guideline changes education with same day results streamlined VL client flow system, use of lay VL bleeder, pre-clinic day VL file tagging with sample request forms, same day result, weekly review meeting and assigned focal person to update tools.

Results: VLC for pregnant and breast-feeding mothers improved from 81% (492/607) in FY22 Q3 to 97% (612/629) in Q4 and real time IAC initiation within a week increase from 57% (4/7) in Q3 to 100% (11/11) of all eligible non-suppressed clients. VL TAT reduced from 3-4 weeks to 1hour-2 days with an improvement from 0% (0/217) in Q3 to 100% (402/402) in Q4 who received their VL results within 1 hour- 2 days.

Conclusion: POC VL testing significant improve the timeliness of VL result receipt by patients and result utilization by the clinical team for clinical decisions. Skilled work force using Quality improvement approach enhance a streamlined POC to improve timely decision making in the provision of care.

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Viremia Clinic – A Multidisciplinary Model for Achieving Virologic Suppression in Children and Adolescents Living With HIV

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Background: Many developing countries are struggling to achieve the UNAIDS 95-95-95 goals in children and adolescents living with HIV (CALHIV), especially with respect to viral load (VL) suppression (3rd 95). Special clinics offering services from multiple departments may be set up to improve virologic suppression (VS) rates.

Material and Methods: In February 2022, a Viremia Clinic (VC) was established at the Baylor College of Medicine Children's Foundation – Tanzania clinic in Mbeya with six main objectives: consolidating services for CALHIV with high VL (≥ 1000 copies/mL), emphasizing continuity of care, ensuring delivery of a package of services, maintaining a schedule for service delivery, providing peer support (both for client and caregiver), and aggressively following up missed appointments. For this study, one year of VL data was examined (December 2021 to November 2022) in all active clients <20 years old who had been on antiretroviral therapy (ART) ≥ 6 months and had ≥ 1 VL in the past year.

Results: VS in CALHIV fell to a nadir of 89.0% (1153/1295) in August 2022 before rising to 91.7% (1239/1351) by the end of November 2022. Among unsuppressed CALHIV, the percentage that were female decreased from 56.6% (60/106) to 50.9% (57/112) but the rate rose from 37.7% (40/106) to 42.9% (48/112) in females 10-19 years old over the study period. In unsuppressed CALHIV, the percentage who were suppressed on the previous VL rose from 57.6% (61/106) to 76.8% (86/112). Moreover, there was a progression to greater numbers of those prescribed 6 months (6MMD) of ART among unsuppressed clients: 5.7% (6/106) to 29.5% (33/112). When looking at CALHIV who were unsuppressed on the previous measurement, subsequent VS rates rose from 79.2% (134/169) to 89.9% (124/138) over the study period.

Conclusion: This analysis shows that a multi-pronged VC approach to VS can help increase the provision of client-centered care to high-risk clients. We found improved VS after initial decline, increasing proportion of female adolescents and 6MMD clients among the unsuppressed, and a majority of unsuppressed CALHIV with previously

suppressed VL. Most unsuppressed CALHIV achieved VS by the next VL.

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Incidence, Prevalence and Associated Factors of Mother-To-Child Transmission of HIV, Among Children Aged (0-14) In Taraba State - Nigeria

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Background: Globally, over 2.73 million children aged 0–19 years were living with HIV. Each day in 2021, approximately 850 children became infected with HIV and approximately 301 children died from AIDS related causes. The prevalence of paediatric HIV infection is largely unknown in many countries including Nigeria. Nigeria accounts for 24% of pregnant women living with HIV worldwide who are not on antiretroviral therapy and is the largest contributor among 7 countries that account for half of all new HIV infections among children globally. NAHS report estimated a prevalence of 0.2% among children aged 0–14 years in Nigeria. Taraba is among top three states with highest prevalence of HIV in Nigeria. This study sought to determine prevalence of HIV among children and associated factors in Taraba State.

Material and Methods: This was a cross-sectional study carried out in 3 LGAs of Taraba state. Data was collected from January, 2022 to December, 2022 among children with unknown HIV status. These children were tested in line with WHO best practices.

Results: A total of 1603 children aged (0-14) years were enrolled in the study. Out of which males consisted of 814(50.8%) while 789/1603 were females (49.2%). The overall HIV prevalence among children (0-14) years was 0.6% out of which gender specific prevalence were 0.4% and 0.2% among males and females respectively. Identified factors included death of one or both parents ($p < 0.05$) and severe acute malnutrition ($p < 0.05$). Within three

months period after discharge from the hospital, 89% (8/9) of the discharged HIV-infected children (0-14) years were enrolled and retained in HIV treatment and care.

Conclusion: This study identified significant number of HIV-infected children within the age bracket of 0-14 years. Independent factors identified in the study included death of one or both parents and severe acute malnutrition among others. This study also shows that 89% of the HIV-infected children were dully enrolled and retained into HIV treatment and care. More efforts is needed to guarantee early diagnosis and linkage to HIV treatment and care so as to reduce morbidity and mortality among these children.

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Implication of Identifying Pregnancies Among Newly Identified Positive and Non-suppressed Women Living With HIV Within the First Trimester – Lessons Learnt From Implementation at AIDS Information Centre (AIC)

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Background: Vertical Transmission (VT) is a predominant route through which women living with HIV(WLHIV) pass it to their babies. The relatively high prevalence of HIV among women of reproductive age in Uganda, coupled with a high fertility rate implies that without an intervention, the number of children who are likely to be infected with HIV is very high. Research studies have shown that provision of anti-retroviral drugs to HIV-Positive pregnant mothers within a context of a comprehensive antenatal, intranatal and postnatal care service can reduce the risk of VT by up to half. AIC registered 3 positive babies from 54 PCR tests done between January-December 2021. Analysis of data indicated that 1 mother was non-suppressed

at one point during pregnancy and 2 started ART later in their pregnancies. It is against this background that policies for elimination of VT were developed to provide early interventions. Among the policies developed was the identification of pregnancies in WLHIV within their first trimester.

Material and Methods: In January 2022, AIC piloted the compulsory conducting of pregnancy tests for all newly identified positive and non-suppressed WLHIV to identify pregnancies within the first trimesters. All newly identified and non-suppressed WLHIV were to be screened and tested for pregnancy and those tested positive enrolled in the Antenatal Care (ANC) clinic. All Children born from these enrolled mothers were to have PCR tests done between 0-2months of age. Analysis of data for the Cohort of mothers enrolled in the ANC clinic between January–March 2022 and had babies tested for PCR between October–December 2022 was done.

Results: Between January–March 2022, 27 women tested HIV-Positive and we registered 8 non-suppressed women. All 35 women were screened and tested for pregnancy where 5 were pregnant and enrolled in the ANC clinic. 3 had babies between July-December 2022 and PCR tests conducted returned negative.

Conclusion: It's a routine that all pregnant women are tested for HIV that's why we recommend that all women testing positive for HIV should also be tested for pregnancy. This provides a chance for early interventions in protecting the coming children against HIV.

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Aleitamento Materno Exclusivo Foi Menos Comum em Crianças VIH Positivas Atendidas por Diarreias no Hospital Central de Nampula Quando Comparadas com Crianças VIH Negativas

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Introdução: A epidemia do Vírus de Imunodeficiência Humana (VIH) é ainda um grande desafio de saúde pública em Moçambique, com sérias implicações, mas também oportunidades de diagnóstico nos diferentes cuidados de internamento. É importante determinar fatores correlacionados com a infeção pelo VIH entre crianças internadas com doenças agudas como seja a diarreia.

Métodos: Foi feita uma análise transversal baseada em dados publicados da vigilância nacional de diarreias na enfermaria de pediatria do hospital central de Nampula, desde que tivessem registo do estado VIH nos anos 2014-2019. Foram colhidas variáveis demográficas, clínicas, o estado serológico para VIH, o estado para desnutrição aguda e resultado de teste para rotavírus. Descreve-se a proporção de categoria das variáveis por frequência absoluta e relativa, a idade por mediana e intervalo entre quartis (IEQ). Associação das variáveis estudadas com o estado de VIH foi determinada através da regressão logística múltipla.

Resultados: A análise inclui 309 de 614 registos com resultados do VIH. Destas, 57.9% eram do sexo masculino, a idade mediana foi de 12 meses (IEQ=13 meses), 25.9% fez aleitamento materno exclusivo, 23.3% tinha infeção por rotavírus e 35.9% tinha desnutrição aguda. A proporção de crianças registadas VIH positivo foi de 5.2% (95% IC:3.2-8.2%). Na análise ajustada as associações foram nulas com exceção do aleitamento exclusivo. O não aleitamento materno exclusivo implicou 8 vezes (95%CI:1.05-66.18) maior razão de chance de ser seropositivo VIH, enquanto que a desnutrição aguda implicou em 2 vezes (95%CI:0.92-8.10) a razão de chance de ser positivo. A infeção por rotavírus incrementou em 1.1 (95%CI:0.34-4.14) vezes a razão de chances de ser seropositivo.

Conclusão: Nesta análise secundária, verificou-se que crianças VIH positivas tiveram mais chances de não terem aleitamento materno exclusivo quando comparadas com crianças VIH negativas atendidas por diarreia no hospital central de Nampula.

Implicações do não aleitamento materno exclusivo na saúde da criança VIH positivas precisam ser monitoradas, como por exemplo o número de vezes em que a mesma desenvolve doenças agudas e a magnitude na morbi-mortalidade infantil por forma a reduzir o risco de desfecho não favorável nesta população.

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Compreendendo as Barreiras à Comunicação Sobre Questões Ligadas a Saúde E Direitos Sexuais e Reprodutivos Entre Adolescentes e Adultos Influentes na Província de Maputo, Moçambique

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Introdução: Embora muitos dos problemas relacionados com a saúde e direitos sexuais e reprodutivos surjam em adolescentes mais velhos, entre os 15 e 19 anos de idade, é também bastante frequente que alguns problemas tais como o casamento e a gravidez comecem a surgir na primeira adolescência, entre os 10 e 14 anos de idade. No entanto a primeira adolescência é também um período de oportunidade para criar uma base de informações, habilidades, acesso a serviços e um ambiente de apoio que proteja as raparigas e rapazes à medida que crescem para adquirirem as informações e habilidades necessárias para que possam, no futuro, ter uma vida sexual saudável e responsável. **Objectivo:** Analisar as barreiras da comunicação sobre questões relacionadas com a saúde e os direitos sexuais e reprodutivos (SDSR) entre adolescentes dos 10-14 anos de idade e adultos influentes (pais/encarregados de educação, professores e profissionais de saúde) nos distritos de Moamba e Magude, província de Maputo.

Métodos: Metodologia qualitativa com recurso a entrevistas individuais semi-estruturadas, discussão de grupos focais e observação não

participativa. Os dados foram analisados tematicamente.

Resultados: As barreiras que influenciam a comunicação sobre SDSR entre os adolescentes e os adultos influentes incluem a falta de diálogo frequente sobre questões relacionadas com a SDSR entre os adolescentes e adultos influentes, os tabus sobre a sexualidade, a vergonha, o medo dos adolescentes de conversarem com pessoas mais velhas sobre estes assuntos, a indisponibilidade dos meios de comunicação social e as redes sociais.

Conclusões: Recomenda-se aos fazedores de programas para concepção de programas culturalmente sensíveis, multidimensionais e inclusivos, para alcançar famílias e a comunidade em geral.

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Offre en Ligne des Services VIH aux Populations Clés : Cas du Projet EpiC Mis en Œuvre par l'ONG SOUTOURA au Mali

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Contexte : Au Mali, SOUTOURA met en œuvre le projet EpiC, financé par l'USAID qui soutient les services de prévention et de traitement du VIH destinés aux populations clés, notamment les travailleuses du sexe (TS) et les hommes ayant des rapports sexuels avec des hommes (HSH). SOUTOURA utilise l'éducation par les pairs en ligne et une application de réservation en ligne pour atteindre les cibles qui ne sont pas atteints par les approches traditionnelles de sensibilisation afin de les orienter vers des services hors ligne.

Matériel et méthodes : Entre mai 2020 et septembre 2021, Soutoura a mené des activités de sensibilisation et de promotion des services en ligne à l'aide d'affiches, d'images, de vidéos et de messages sur des plateformes de médias sociaux et des applications de messagerie instantanée. Des

pairs éducateurs en ligne formés ont aidé les clients à effectuer des évaluations des risques et à réserver un service VIH à l'aide de "Ibadon", l'application de réservation et de gestion de cas en ligne du Mali (ORA) disponible en français et bambara avec des fonctions orales. L'application aide les clients à décider de leurs besoins et facilite la réservation des services VIH dans les cliniques de SOUTOURA. Les visualisations de données produites par "Ibadon" permettent au programme de suivre la cascade du VIH, du nombre d'évaluations du risque aux réservations en passant par les arrivées, les résultats des tests VIH et l'adoption du TAR ou de la PrEP.

Résultats : Entre mai 2020 et septembre 2021, 57% des utilisateurs étaient des HSH et 12% des TS avec un âge moyen de 26 ans, le taux de dépistage du VIH chez les clients en ligne était de 31% et de 38% chez les HSH et les TS atteints, respectivement. Le taux de positivité global parmi les clients en ligne était de 30%, alors que le taux de positivité global du programme était de 9%.

Conclusion : L'utilisation des approches en ligne pour les populations clés est d'un apport considérable pour le programme national de lutte contre le VIH afin de toucher les personnes n'ayant pas accès aux services classiques.

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Evaluation des Facteurs Exposants les Contacts des Travailleuses de Sexe Vivant Avec le VIH Suivies au Niveau de la Clinique Communautaire de SOUTOURA à Bamako

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Objectifs : Déterminer les facteurs qui exposent les partenaires sexuels et les enfants Biologiques des travailleuses de sexe positives au VIH encadrées par l'ONG SOUTOURA.

Matériel et méthodes : Cette étude transversale et descriptive s'est déroulée à la clinique communautaire de Soutoura à Bamako du 1^{er} Avril 2019 au 30 Avril 2021. L'approche globale utilisée est le VPR qui est focalisé sur le dépistage des Partenaires sexuels (mari, copin, partenaire fidèle) et les enfants biologiques des Travailleuses de sexe vivant avec le VIH.

Résultats : Pendant cette période 226 travailleuses de sexe vivant avec le VIH avec un âge moyen de 29 ans ont été identifiées pour participer à l'index testing, 199 étaient éligibles soit 88% (199/226), 163 travailleuses de sexe vivant avec le VIH ont accepté de fournir la liste de leur contact soit 81,9% (163/199) ce qui a permis de retrouver 234 contacts soit un ratio de 1,4 (234/163), les 234 contacts ont été testés au VIH, 71 contacts ont été dépistés positifs soit 30,34% (71/234), Parmi les contacts il y avait 33 enfants dont l'âge est compris entre 1 et 10 ans. Vingt-sept TS n'étaient pas éligibles soit 11,9% (27/226) car elles n'avaient ni de partenaire sexuel ni d'enfant. Dans notre étude les facteurs exposants les contacts étaient : 1- Les cas positifs parmi les partenaires sexuels 26,8% (52/194) ont été identifiés chez les partenaires intimes n'utilisant aucun moyen de prévention lors des rapports sexuels et l'odds ratio a donné 15 ; 2- Les enfants biologiques dépistés positifs 48,4% (16/33) étaient tous nés d'une mère séropositive n'ayant pas bénéficié d'eTME ; 3- 42,8% (3/7) des travailleuses de sexe du réseau sexuel à risque ont été dépistées positives au VIH.

Conclusion : Cette étude nous a permis d'identifier les facteurs exposant les contacts des travailleuses de sexe vivant avec le VIH. Les résultats obtenus en termes de prévalence sont très significatifs et prouvent à suffisance que le dépistage index peut contribuer efficacement à l'accélération de la riposte nationale pour l'atteinte des objectifs de l'ONUSIDA et au contrôle de l'épidémie du VIH.

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Prévalence de la Violence Basée sur le Genre (VBG) chez les Professionnelles de Sexe et les Hommes qui ont des Relations Sexuelles Avec des Hommes Dans un Contexte de Vulnérabilité Accrue à l'Intérieur de la Ville de Bamako, au Mali

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Contexte : Prévalence de la violence basée sur le genre (VBG) chez les professionnelles de sexe et les hommes qui ont des relations sexuelles avec des hommes dans un contexte de vulnérabilité accrue à l'intérieur de la ville de Bamako, au Mali. Objectifs: Cette recherche examinera la prévalence de la violence basée sur le genre faite aux Professionnelles de sexe et les hommes qui ont des relations sexuelles avec des hommes à Bamako au Mali.

Matériel et méthodes : L'étude a adopté une conception de recherche à méthodes mixtes intégrant des discussions de groupe (FG) et des entretiens individuel (EI). Pour estimer la prévalence de la violence et évaluer les attitudes et les connaissances des populations clés, nous avons mené des discussions de groupe parmi les PC. De plus, les connaissances et les attitudes des parties prenantes envers la violence et le VIH ont été évaluées par des méthodes de recherche qualitative. Une recherche qualitative a été menée avec les animateurs et les prestataires de santé pour évaluer l'utilisation du conseil et du dépistage du VIH à l'OSC.

Résultats : D'octobre 2018 à Septembre 2021; 9,8% (1305/13255) des PC ont déclaré avoir été victimes de violence à un moment donné. Cela comprenait : la violence émotionnelle 15,5% (203/1305), la

violence physique 19% (251/1305), la violence sexuelle 34% (446/1305) et la violence économique 31% (405/1305). La violence sexuelle était plus fréquente (34 %) suivi de violence économique 19% avec dépendance économique dans 60% des cas et privation de toute ressource de survie dans 40% des cas. 16 % des PC interrogées ont une faible connaissance du conseil et dépistage du VIH et ne savaient pas où recevoir les services. La réponse de l'OSC montrait que 8,7 % des survivantes de VBG violées étaient séropositives.

Conclusion: D'après l'enquête, il a été constaté que près de 10% des PC ont déclaré avoir subi des violences au cours de leur vie et que certains d'entre eux ont une faible connaissance du conseil et du dépistage du VIH. Ces pourcentages significatifs reflètent le large éventail d'abus, de stigmatisation et d'exclusion auxquels les PC sont soumis à tous les âges.

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Experiências de Violência Praticada Pelo Parceiro Íntimo entre Casais HIV Discordantes em Xai-Xai, Província de Gaza

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Introdução: A violência por parceiro íntimo (VIP) é um problema de saúde pública grave e evitável que afecta milhões de pessoas em todo o mundo. (Krug et al., 2002). Na região africana, aproximadamente 37% das mulheres foram vítimas de violência física e/ou sexual pelo seu parceiro íntimo durante a sua vida (OMS, 2013). Em Moçambique, a VIP tem sido cada vez mais documentada. (MISAU et al 2019) Contudo, pesquisas sobre VIP nos casais serodiscordantes tem sido escassa, e pouco se sabe sobre a experiência VIP entre casais serodiscordantes em Moçambique. Assim, este estudo teve por objetivo explorar as experiências de violência praticada pelo parceiro íntimo entre

casais HIV discordantes em Xai-Xai, Província de Gaza.

Método: Trata-se de um estudo descritivo e exploratório de abordagem qualitativa, realizado com 18 casais HIV discordantes em 4 unidades sanitárias da província de Gaza (Xai-Xai, Chongoene, Limpopo e Chockwe). A coleta de dados foi por meio do roteiro de entrevista semiestruturada, entre os dias 08 a 20 de Agosto de 2022. Os resultados foram analisados pela técnica de análise de conteúdo temática.

Resultados: Foram identificadas três principais categorias temáticas relacionadas a violência entre parceiros íntimos: (1) violência física; (2) violência sexual; (3) violência emocional. A maior parte das mulheres HIV negativas sofreram violência sexual e física. Por sua vez a maior parte dos homens HIV positivos relataram experiências de violência emocional. Ciúme e o consumo de álcool foi mencionada como uma das principais causas de violência física e emocional.

Conclusão: A maior parte dos casais serodiscordantes tem sofrido a violência emocional e sexual. A violência física foi pouco relatada no seio de casais serodiscordantes. Os programas de intervenção na área de HIV tanto na área comunitária assim como clínica, deverão abordar tópicos relacionados com a violência baseada no gênero no seio dos casais serodiscordantes.

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Barreiras e Facilitadores na Estratégia de Auto – Teste de HIV no CS da Munhava, Beira 2022

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Introdução: Estima-se que 45% das pessoas que vivem com HIV na África Subsaariana têm conhecimento de estarem infectadas pelo vírus e Moçambique tem uma prevalência de 13,2%. Em 2019 previa-se que o número de novas infecções pudesse ser reduzido em 30%, conforme preconizado no IV Plano Estratégico Nacional de

Resposta ao HIV/SIDA 2015-2019. Apesar da grande expansão dos serviços de testagem ainda existe pessoas sem conhecimento de estarem infectadas pelo vírus. Com vista a colmatar esta lacuna, o país tem vindo a implementar diversas iniciativas de aconselhamento e testagem de HIV. Considera-se que a auto-testagem de HIV irá contribuir como uma abordagem adicional, permitindo alcançar grupos de difícil acesso. O objectivo do estudo foi de avaliar as barreiras e facilitadores na implementação da estratégia Auto-teste de HIV no distrito da Beira.

Metodologia: Tratou-se de um estudo exploratório, transversal e observacional, com componente quantitativo e qualitativo, realizado entre no CS da Munhava entre Outubro à Dezembro de 2022. Para a componente qualitativa a recolha de dados foi mediante um inquérito por entrevista a 60 Informantes adicionalmente visitadas 15 activistas nas comunidades, os mesmos foram gravados e posteriormente transcritos e codificados. No componente quantitativo os dados foram colhidos durante as actividades de rotinas e supervisão realizada na US. A análise e interpretação dos dados foram feitas recorrendo-se ao pacote estatístico SPSS, versão 20.

Resultados: Observou-se as seguintes barreiras: (1) dificuldades no seguimento das pessoas que fazem o auto-teste; (2) os activistas ou provedores comunitários não esperam resultados; (3) nem todas as pessoas que fazem o auto-teste e com resultados positivos chegam a US de referência; (4) os livros de auto teste são enormes dificultando seu preenchimento. Identificou-se como facilitadores: (1) não tem necessidade de se deslocar a US para realizar o teste; (2) privacidade em realizar o teste e redução do estigma.

Conclusão: O estudo concluiu que ainda existem muitos desafios na implementação dos auto-teste HIV que vão desde os relacionados aos provedores até aos beneficiários. Por isso recomenda-se que se reforce a disseminação e divulgação das boas práticas de testagem tanto na US assim como na comunidade.

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Conhecimentos, Atitudes e Práticas na Prevenção do HIV/SIDA nas Trabalhadoras do Sexo em Quelimane, Zambézia

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Introdução: O HIV/SIDA continua a ter um grande impacto na saúde humana em todo o mundo, sendo uma causa importante de morbidade e mortalidade. Moçambique fez progressos assinaláveis na prevenção, diagnóstico e tratamento da doença, mas ainda não é suficiente, continua com cifras altas das novas infeções, com uma prevalência de 13.2% no geral e 15.1% para Zambézia, em particular. Portanto, é comum, em Quelimane, ver raparigas nos bares, esquinas, discotecas a procura de sustento das suas famílias através do trabalho sexual, fazendo-se necessário cuidados com a transmissão do vírus.

Objetivos: avaliar o nível de conhecimentos, atitudes e práticas das trabalhadoras do sexo em Quelimane na prevenção do HIV/SIDA.

Metodologia: para a materialização da pesquisa, realizou-se um estudo descritivo e exploratório transversal, de abordagem quali-quantitativo, empregou-se inquérito por questionário a (32) raparigas nos bares, discotecas e esquinas da cidade de Quelimane, (02) ativistas da FDC e (02) da PASSOS. Também se recorreu da análise bibliográfica e observação participante. Os dados foram analisados pelo método de conteúdo de Lawrence Bardin (2016).

Resultados: da discussão dos resultados constatou-se que 88% (28/32) das raparigas tinham um conhecimento aceitável sobre a prevenção da doença. Em relação as atitudes, 94% (30/32) afirmaram sair com mais de um homem por noite, 47% (15/32) sabem do seu sero estado, 47% (15/32) aderiram o SAAJ, 91% (29/32) têm mais de um parceiro, 56% (18/32) recusaram conversar com ativistas. No que concerne as práticas, 100%

(32/32) das raparigas afirmaram praticar, sempre, relações sexuais com preservativo, somente 16% (5/32) afirmaram fazer-se ao bar embriagadas. Mas, durante a observação notou-se uma discordância entre as respostas dadas pelas raparigas e aquilo que é pratica comum.

Conclusão: a maioria das raparigas têm um conhecimento aceitável sobre a prevenção do HIV/SIDA, mas os seus comportamentos, as suas atitudes e as suas praticas concorrem para a transmissão desta doença. Recomenda-se a assumir a atividade com responsabilidade e seguir as melhores formas de prevenção desta doença, incluindo outras transmissíveis a partir do ato sexual.

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Perfil Epidemiológico de HIV entre Mulheres Trabalhadoras de Sexo em Maputo

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Introdução: As Mulheres Trabalhadoras de sexo são parte da população considerada chave, pois devido aos seus comportamentos de risco estão mais expostas e em maior risco de se infetar pelo HIV. Segundo resultados de inquéritos bio comportamentais realizados nesta população em Moçambique, a prevalência de HIV neste grupo encontrava-se acima da prevalência na população geral. Neste estudo usou se dados colhidos de 2 inquéritos para descrever o perfil e a tendência epidemiológica da infeção pelo HIV em MTS da cidade de Maputo.

Metodologia: Realizou se um estudo quantitativo transversal, a partir de dados secundários das duas rondas do Inquérito Biocomportamental em MTS em Maputo, que incluíram participantes biologicamente mulheres, com idade igual ou maior que 15 anos, que trocavam sexo por dinheiro, residiam ou se socializavam na cidade de Maputo a

pelo menos 6 meses. Foram recrutadas através do RDS até atingir a amostra pretendida, submetidas a testagem rápida de HIV e foi avaliada a carga viral das participantes positivas.

Resultados: A primeira ronda (2012) incluiu 400 participantes e se teve uma prevalência de 31.5 % a nível da Cidade de Maputo. Na segunda ronda que decorreu no mesmo local, em 2019/2020, com 492 incluídas, a prevalência de HIV encontrada foi de 46.5%. Verificou se uma tendência de inclusão de participantes mais velhas de 2012 (20 a 24 anos) para 2019 (30 ou +), no entanto em ambas rondas existe uma tendência de aumento de prevalência de HIV com o aumento da idade. Na segunda ronda 82.1% das participantes já conheciam o seu estado positivo para o HIV antes de participar no inquérito, destas 81.35% estavam sendo seguidos no Sistema Nacional de Saúde, das quais 78.7% já havia iniciado o TARV, no entanto apenas 73.2% estavam em TARV no momento do inquérito e destes somente 11.1% estava com a carga viral indetectável.

Conclusão: Houve aumento da prevalência de HIV entre as MTS de aproximadamente 15.2% quando se compara as duas rondas. O acesso e uso consistente dos serviços de saúde ainda precisam de bastante melhoria com vista ao alcance a médio prazo do objectivo número 3 do desenvolvimento Sustentável.

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Avaliação do Impacto do Projecto de Identificação de Crianças Vivendo com HIV e Sua Ligação aos Cuidados e Tratamento, Moçambique

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Introdução: As novas diretrizes da Organização Mundial da Saúde (OMS) recomendam que todas as pessoas diagnosticadas HIV devem iniciar o tratamento. Em Moçambique, a ligação nos cuidados e tratamento continua a ser um dos principais desafios da resposta nacional ao HIV/

SIDA, em particular nos adolescentes e população chave. O objectivo do estudo foi de analisar o impacto dum projeto (Kushinga) de identificação e ligação aos cuidados e tratamento do HIV de raparigas, crianças órfãs e vulneráveis (COVs) e filhos de mulheres trabalhadoras de sexo (MTS) vivendo com HIV.

Metodologia: Trata-se de um estudo transversal, qualitativo, realizado em 8 unidades sanitárias (US) de 2 distritos da província de Manica em 2022. A amostragem foi feita por conveniência em distritos com menores taxas de tratamento de HIV. Foram entrevistados 32 informantes chave, nomeadamente, profissionais de saúde, líderes comunitários e representantes de organizações de base comunitária (OCBs). Fez-se análise de conteúdo.

Resultados: Em relação as barreiras na identificação de MTS vivendo com HIV e testagem dos seus filhos, as informantes chaves referiram que as MTS não se identificam como MTS quando chegam a US, falta de uma conversa aprofundada com os pacientes nas consultas, falta de privacidade no atendimento, mobilidade das MTS e falta de apoio no seguimento da sua saúde por um activista ou alguém próximo. Sobre as barreiras na identificação de COVs vivendo com HIV foi ignorância dos cuidadores e a falta de condições para o transporte das crianças para as unidades sanitárias. Para ambos os aspectos que facilitam a identificação foi o envolvimento dos líderes comunitários. O projeto contribuiu na identificação de filhos de MTS, COVs e raparigas pela alocação de activistas que trabalham com as lideranças na comunidade, US, escolas, outros projectos locais e testagem de HIV nas comunidades. Aspectos a melhorar no projecto seriam que os activistas deviam trabalhar no período noturno em locais que frequentam as MTS, evitar a troca repetitiva dos activistas e sigilo profissional.

Conclusões: Observou-se que o projecto contribuiu de forma positiva na identificação das raparigas, filhos de MTS e COVs. O envolvimento das lideranças locais foi crucial.

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Factores Associados a Retenção de Pacientes nos Cuidados e Tratamento de HIV em Barué, 2020

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Introdução: A infecção pelo HIV constitui grande problema de Saúde Pública no Mundo, e um dos principais factores, é a baixa retenção de pacientes nos cuidados e tratamento de HIV. Em 2019 a prevalência de HIV e a taxa de retenção em Moçambique, foi estimada em 11.5%, e 68% respectivamente. No mesmo ano, a Província de Manica teve taxa de retenção de 61%, igual a do Distrito de Barrue. Factores comportamentais e relacionados à acessibilidade dos cuidados e tratamento de HIV são os mais associados a baixa retenção. Objectivo: Avaliar os factores associados a retenção de pacientes nos cuidados e tratamento de HIV no distrito de Barué.

Metodologia: Estudo transversal, quantitativo, realizado em 10 unidades sanitárias do distrito de Barué, de Junho á Novembro de 2020. A amostra foi de 368 pacientes adultos HIV positivos. Para recolha de dados, usou-se questionário estruturado, com questões relacionados aos factores associados a retenção de pacientes nos cuidados e tratamentos de HIV a nível individual, familiar e da US, em pacientes retidos e não retidos. Fez-se a análise em SPSS para o cálculo das frequências e proporções.

Resultados: Dos 368 pacientes, sendo 250 retidos e 118 não retidos, eram do sexo feminino 66% (243) e 64.4% (237) casados. Em relação aos factores, o consumo de álcool, importância da família saber sobre serro estado de HIV e conhecimento das vantagens do TARV foram referenciados por 17.6% (44), 88.4% (211), 96.4 (241) dos retidos e 19.5% (23), 74.6% (88) % e 86.4% (102) dos não retidos respectivamente. As principais razões para deixaram o tratamento entre os não retidos foram: Viver longe da US 48.3% (57), os medicamentos fazem mal 19.5% (23%) e não tem comida 16% (20).

Conclusão: Pacientes não retidos, consome mais álcool e menos conhecem da importância de família saber sobre seu serro estado e do TARV. Factores como, longa distância entre residência e US, e falta de alimento são apontados como razões para o abandono ao TARV, com isso, recomenda-se a intensificação do apoio psicossocial e criação de fontes de renda familiar para a mitigação destas barreiras.

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Avaliação do Progresso da Retenção dos PVHIV aos Cuidado e Tratamento no Distrito de Barruè de 2020-2022

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Introdução: África Subsahariana é a região mais afectada com mais de 25,6 milhões de PVHIV e 2/3 das novas infecções. O MISAU diz que até Dezembro de 2019, 1.3 milhão das PVHIV estavam em tratamento antirretroviral (TARV) o que correspondia a uma cobertura de 56% e taxa de retenção aos 12 meses foi estimada em 67% (38). A a província de Manica apresentava 150,000 PVHIV (79% conheciam o seu seroestado em relação ao HIV), das quais 69% estavam em TARV (3) e a taxa de retenção aos 12 meses era de 61%. Barué a taxa de retenção em 2019 foi de 67% (38). Este estudo tem como objectivo avaliar o progresso da retenção aos C&T no distrito de Barruè em dois anos.

Metodologia: Tratou-se de um estudo observacional, trasversal, quantitativo que serviu para medir o progresso da retenção em dois anos no distrito de Barruè, realizado em 8 US de (04/2020 a 03/2021 e 04/2021 a 03/2022), foram selecionadas pacientes 15+ inscritos nos C&T retidos e não retidos. Os dados foram colhidos dos livros de registro de programa de HIV nas US, registradas numa fivha preparada para o efeito e para a analise os dados foram exportados para o Microsoft Excel e de seguida aos SPSS versao 2.0.

Resultados: Observou-se que para o primeiro período 1650 iniciaram TARV, 1611 (98%) retidos aos 33 dias, 39 (3%) foram pacientes não retidos, e tiveram 981 reintegrados, e no segundo período 1441 iniciaram TARV e ligaram aos C&T, desses 1378 (96%) com retenção aos 33 dias e 63 (4%) PVHIV não reteram aos C&T. Analisando globalmente durante o período 3091 PVHIV iniciaram tratamento no distrito de Barruê desses 2989 (97%) continuaram tratamento, e um total de 102 (3%) PVHIV foram os não retidos aos C&T.

Conclusão: O estudo mostrou que nos dois anos de avaliação o primeiro ano teve melhor desempenho em relação ao segundo ano nos principais indicadores (início TARV, retidos e não retido), embora o segundo ano tenha havido decréscimo a retenção global aos 33 dias é o boa e aceitável.

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Percepção dos Residentes da Cidade de Quelimane em Relação a Prevenção do HIV/SIDA, 2021

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Resumo: Introdução: O HIV/SIDA é um dos mais graves problemas de saúde pública mundial, e, na actualidade, existem mais de 30 milhões de pessoas vivendo com a infecção viral. Moçambique constitui um dos países mais afectados pela epidemia com uma prevalência que continua a crescer, tendo saído de 11,5% em 2009 para se fixar em 13.5% em 2015. O cenário vem se agravando ao longo dos últimos anos, pois até 2019 o número de pessoas vivendo com HIV/SIDA no país aumentou para 2,183,786 com uma média de 398 novos casos diagnosticados por dia. Objectivo: Compreender a percepção dos residentes da cidade de Quelimane em relação a prevenção do HIV/SIDA.

Metodologia: Foi um estudo do tipo descritivo de abordagem qualitativo, usando um guião de entrevista semi-estruturado. Onde foram incluídos 20 residentes da cidade de Quelimane, usando a amostragem por conveniência. Para análise de

dados recorreu-se a análise do conteúdo. O estudo foi realizado em Quelimane no ano de 2021.

Resultados: No total de 20 residentes da cidade de Quelimane entrevistados, constatou-se que maior parte (n=9) tinham idades compreendida entre 18 a 23 anos, a sua maioria (n=14) eram solteiros, com o nível secundário (n=11) e a maior parte (n=8) eram camponeses. Dos entrevistados (n=18) afirmaram que já ouviram falar da doença e sabem como se transmite, assim também como se prevenir do HIV, onde maior parte (n=12) referiram se como medidas de prevenção ao uso de preservativo nas relações sexuais, abstinência sexual e a não partilha de instrumentos perfuro cortantes como lâminas, tesouras e outros. A maioria têm conhecimento em relação a gratuidade do teste do HIV, sendo ainda que (n=16) afirmaram já terem feito o teste do HIV. A maior parte (n=12) tem apenas um/a parceiro/a sexual, no entanto ainda existem indivíduos (n=4) com múltiplos parceiros sexuais, correndo maior risco de se infectar pelo HIV.

Conclusão: Os resultados do estudo mostram que os residentes da cidade de Quelimane têm conhecimentos sobre a prevenção do HIV/SIDA, apesar da minoria ainda apresentar algumas dificuldades no que diz respeito as medidas preventivas da doença.

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Caractéristiques Sociodémographiques, Cliniques et Thérapeutiques des Couples Sérodiscordants au VIH Suivis à Kinshasa

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Contexte : La transmission du virus de l'immunodéficience humaine (VIH) lors de rapports hétérosexuels est l'un des principaux modes de transmission à l'origine de l'épidémie mondiale d'infection par le VIH. Des études ont en effet montré qu'en Afrique sub-saharienne, la plupart des femmes infectées aujourd'hui le sont par leur

conjoint, dans le cadre de relations sexuelles conjugales. L'objectif de cette étude était de décrire les caractéristiques sociodémographiques, cliniques et thérapeutiques des couples sérodiscordants VIH à Kinshasa.

Matériels et méthodes : Cette étude est une étude descriptive transversale des couples sérodiscordants VIH suivis à Kinshasa. Des données sur les caractéristiques sociodémographiques, cliniques et thérapeutiques ont été recueillies à partir d'un questionnaire lors d'entretiens de couples.

Résultats : 17 couples sérodiscordants ont été inclus dans l'étude. La durée moyenne passée en couple était de $8,6 \pm 1,8$ ans. 71,4% des partenaires séropositifs étaient dans la tranche d'âge entre 36 et 45 ans. Selon l'IMC, 35,2 % des personnes séropositives ont un poids normal, 11,7 % sont en surpoids et 2,9 % sont minces. 47 % des couples sérodiscordants ont eu 4 à 10 rapports sexuels, 41,7 % ont eu 1 à 3 rapports sexuels et 11,7 % ont eu plus de 10 rapports sexuels par mois. Pendant toute la durée du traitement ARV ; 28,5% des séropositifs sont sous traitement ARV depuis 1 an, 21,4% depuis 10 ans et 14,2% depuis 3 ans.

Conclusion : Tous les partenaires ont été informés du statut sérologique de leur conjoint. Il ressort de cette étude que plus de la moitié des personnes infectées sont des femmes.

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L'Apport de la Plateforme Laboratoire « Biocentric » Dans la Réalisation de Charges Virales VIH-1, VIH-2 et VHB à Ziguinchor : Expérience du Programme « Casamance Research Program on HIV-Resistance and Sexual Health » (CARES)

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Contexte : En vue d'atteindre l'objectif des trois 95 de l'ONUSIDA, le Sénégal a fait beaucoup d'effort dans l'accès au dépistage, aux traitements ARV et dans la réalisation de la charge virale. Cependant, des difficultés persistent dans la couverture nationale de la charge virale. La cascade de soins dans la région de Ziguinchor a montré un taux de réalisation de 9% en 2018. Le programme CARES est mis en œuvre à Ziguinchor par Enda santé pour entre autres évaluer la prévalence des résistances aux ARV. L'objectif de cette communication est de montrer la contribution de CARES aux programmes VIH et VHB dans la région de Ziguinchor.

Matériels et méthodes : Une unité de biologie moléculaire est mise en place au centre de santé de Ziguinchor dans le cadre de ce programme pour la réalisation de charges virales VIH et VHB sur une plateforme Biocentric. Cette plateforme est composée de trois extracteurs (GenoxTract12) et Fluorocycler 96 et permet de réaliser jusqu'à 200 tests par jour. En plus du centre de santé de Ziguinchor, le programme est mis en œuvre dans trois autres sites pilotes. Un circuit de recueil et d'acheminement hebdomadaire des échantillons vers l'unité de biologie moléculaire de CARES est défini tout en respectant la chaîne de froid et les conditions de transport. Après le traitement et le choix des échantillons, les charges virales sont réalisées à partir de la plateforme de Biocentric. Les échantillons de patients sont rangés et stockés à -80°C. Les patients en échec thérapeutique sont identifiés envoyés pour séquençage. D'octobre 2019 à juin 2022, 1424 charges virales VIH ont été réalisés. Pour le VHB, 1418 charges virales ont été faites.

Résultats : Maillon essentiel dans la mise en œuvre du programme CARES, la plateforme « Biocentric » ouverte a la capacité de prendre un grand nombre d'échantillons par série (96 échantillons). Elle a contribué aux progrès de la région Ziguinchor vers l'atteinte du 3ème 95. L'unité de biologie moléculaire installée au centre de santé de Ziguinchor peut être une opportunité pour un programme intégré VIH/VHB dans la région de Ziguinchor.

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“If It Weren’t for This, We’d Be Sick” – Participants’ Perspectives of a Novel Couple-Based HIV Care, Treatment, and Support Program During Prenatal and Postpartum Periods in Zambézia Province, Mozambique

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Background: Retention of pregnant and lactating women (PLW) living with HIV in care and treatment in Mozambique remains suboptimal. Engaging men living with HIV in their pregnant/lactating partners’ HIV care may help increase adherence and retention. Between 2017-2022, in 24 health facilities of Zambézia Province, we trialed an intervention that offered seroconcordant couples joint follow-up in HIV services and couple-based educational sessions provided by a dedicated health counselor (Couples Counselor, “CC”) and support sessions with peer educators (Experienced Couples, “EC”). We herein describe participants’ perspectives and experiences receiving these services.

Material and Methods: A purposive selection of participants enrolled in the trial’s intervention arm (n=525) were invited to participate in a semi-structured interview. Interview objectives were to (i) explore participants’ experiences with couples-based HIV care and the sessions with the EC and CC, (ii) capture perceived impacts of the intervention, and (iii) elicit suggestions for intervention improvement. Interviews were conducted by experienced interviewers in either Portuguese or a local language, were audio recorded, translated to Portuguese as needed, and

transcribed. Research team members applied a coding framework to all interview transcripts (in Portuguese) based on the research objectives.

Results: In total, 64 participants were interviewed, 26 (41%) women, with median age of 25 years (IQR 21-28). Participants reported having positive interactions with CC and EC and felt these intervention staff were caring, knowledgeable, and trustworthy. They reported that educational sessions with CC improved their knowledge of HIV and HIV-related medications and their trust in healthcare providers and health services. Support sessions with EC helped participants feel motivated to remain adherent to care/treatment and hopeful for a long, healthy life. All participants wanted the intervention to continue, although some suggested providing the EC and CC more efficient transportation methods other than bicycles to accommodate long distances, and to alternate the times and locations of support visits to avoid potential community stigma.

Conclusion: Participants living with HIV in rural areas of Zambézia Province, Mozambique had positive experiences partaking in the novel couple-based care, counseling and support program, expressing perceived substantial benefits from the intervention, and an interest to continue receiving couple-based care.

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‘I End up Seeing That I Am Not Alone’: Lessons From the Somos Iguais For Improved Art Adherence in Mozambique

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Background: While the benefits of antiretroviral therapy (ART) in preventing onward transmission of HIV are well-known, they are poorly understood by many people living with HIV (PLHIV), including in Mozambique, where less than 65% of PLHIV are virally suppressed. Somos Iguais (SI) is a social behavioral communications campaign aimed at motivating PLHIV to start and stay on treatment by

communicating the benefits of ART. We report on a study exploring commonly held norms, beliefs and behaviors related to HIV, and assess the impact of SI on treatment-related beliefs and behaviors.

Material and Methods: A mixed-methods study consisting of cross-sectional surveys (n=1934) among men and qualitative interviews (n=150) among women (including pregnant or breastfeeding women, and sex workers) and men (including a subset who have sex with men) was conducted between June- August 2022. Participants were all PLHIV aged 18-35. Survey data were collected using SurveyCTO and analysed in Stata 17. Qualitative data were thematically analysed using Dedoose. Ethical approval was sought and granted by Comité Nacional de Bioética para Saúde, Mozambique.

Results: Of 1934 men interviewed in the survey, 71% indicated that exposure to SI messages influenced their decision to start or restart ART and 29% spontaneously recalled viral suppression as a way to reduce HIV transmission. Those exposed to campaign messages via at least 3-5 channels were significantly more likely to cite viral suppression as a way to reduce HIV transmission than those unexposed (18% vs 44%, $p<0.001$). However, among those not on ART, attitudes towards treatment were significantly less positive ($p<0.01$), with many believing that ART is only for those who feel unwell. Similar results were observed in the qualitative results across all cadres.

Conclusion: Results highlight that SI maybe a promising approach as it successfully influenced many PLHIV to start or restart ART treatment and improved knowledge of treatment as prevention. To better reach those men still not on ART, campaigns need to emphasize the value of treatment for those who are HIV positive and still well.

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“I Felt Out of Place” - Lived Experiences of Adolescents Who Have Transitioned to Adulthood Care at the Lighthouse Clinic in Lilongwe: A Qualitative Analysis

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Background: Adolescents and young people represent a growing number of people living with HIV worldwide. At Lighthouse Trust (LH) ART clinic, adolescents aged 10-19 living with HIV are managed through teen clubs that happens on Saturdays, until they are transitioned to adulthood care. A successful transition is critical for optimum health outcomes for young adults, hence there is a need to understand the factors affecting ART uptake among young people living with HIV (YPLHIV) who have transitioned to adulthood care. This study aimed at exploring the young adults' experiences of adulthood ART care at LH ART clinic in Lilongwe.

Material and Methods: This was a qualitative study using a phenomenological design. We retrospectively reviewed teen club transition records of YPLHIV aged 20-24 who were in teen clubs at LH from 2013-2021. Twelve in-depth interviews were done with purposively selected young adults and their guardians, including six healthcare workers providing ART to the transitioned young adults. Interviews were recorded and transcribed. We explored three main themes based on YPLHIV experiences at adolescent age, transitioning phase and post transition to adult care. Data were analyzed thematically.

Results: We reviewed 387 records of which 212 (55%) were women and 175 (45%) were men. In the adolescent phase, the YPLHIV reported the teen clubs contributed positively to ART uptake before transitioning to adult care. However, during the transitioning phase, the YPLHIV had negative perceptions of the adult care due to feeling

abandoned and losing peer support. Post transition, the YPLHIV felt positively due to the independence of managing their appointments and medication adherence without their guardians' support. Still, they were concerned with potentially being identified as HIV positive when attending standard clinic hours during the week, the lack of peer interaction and support, and providers attitudes.

Conclusion: Our study highlights a need to continue engaging YPLHIV who have transitioned to adult care such as establishing unique peer-based interventions for YPLHIV for continued emotional support. There is also a need for healthcare providers to work closely with transitioned YPLHIV to identify and strengthen coping strategies as they become independent.

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Understanding Preferences to HIV Self-Testing Among Sexually Active Young Males and Females in Nigeria

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Background: HIV self-testing (HIVST) offers young people convenience and privacy; it empowers them to know their HIV status at their comfort. However, Fear of reactive result, perceived lack of awareness, price and low risk perception are some of the barriers that affect uptake of HIVST among young persons in Nigeria. The aim of the study was to understand the preference of young persons to the uptake of HIVST.

Material and Methods: The study was conducted between July – August 2021 in semi-urban and urban areas of Anambra, Lagos, and Kano States of Nigeria. Qualitative interviews including in-depth interviews with 45 participants and 7 focus group discussions with sexually active young males and females within the ages of 18-29 years were conducted. The transcribed data was managed

with Nvivo software. Thematic analysis was used to identify and present key themes in the data.

Results: Sexually active young males and females between mean age of 24 years were interviewed with majority males (53%). Four factors that can influence young person's preference for HIVST emerged. 1. Accessibility: 85% of young persons mentioned they would prefer to purchase HIVST kit from physical pharmacies, Patent Proprietary Medicine Vendors and online outlets compared to going to a health facility for HIV testing services. 2. Cost: 90% of participants stated they would prefer to pay between N100NGN to N1,000NGN (USD 0.22 – USD 2.25) per HIVST kit. 3. Preferred HIVST kit- While all participants said that both blood and oral fluid were generally easy to administer, 60% of participants stated they preferred oral fluid tests because it was slightly easier to use and painless compared to blood based kits. 4. Package- 40% of respondents mentioned that they would prefer a small package as the current size of packaging for HIVST was too big, and the word HIV written boldly on the package could draw attention.

Conclusion: While there are various barriers that influence the preference of HIVST by young persons, improving awareness and demand for HIVST among sexually active young males and females with intervention to improve privacy and access to counselling services will potentially increase uptake of HIVST.

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Abstract 704 was withdrawn.

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Beaten but Not Down! Exploring Resilience Among Female Sex Workers (FSWs) in Nairobi, Kenya

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Background: In Kenya sex work is illegal and those engaged in the trade are stigmatized and marginalized. We explored how female sex workers in Nairobi, Kenya, utilize different resources to navigate the negative consequences of the work they do.

Materials and Methods: Qualitative data were collected in October 2019 from 40 FSWs who were randomly sampled from 1003 women enrolled in the Maisha Fiti study, a 3-year longitudinal mixed-methods study exploring the relationship between HIV risk and violence and mental health. All interviews were audio-recorded, transcribed and translated. Data were thematically coded and analyzed using Nvivo 12.

Results: Participants' age range was 18–45 years. Before entry into sex work, all but one had at least one child. Providing for the children was expressed as the main reason the women joined sex work. All the women grew up in adverse circumstances such as poor financial backgrounds and some reported sexual and physical abuse as children. They also continued to experience adversity in their adulthood including intimate partner violence as well as violence at the workplace. All the participants were noted to have utilised the resources they have to build resilience and cope with these adversities while remaining hopeful for the future. Motherhood was mentioned by most as the reason they have remained resilient. Coming together in groups and engaging with HIV prevention and treatment services were noted as important factors too in building resilience.

Conclusion: Despite the adverse experiences throughout the lives of FSWs, resilience was a key

theme that emerged from this study. A holistic approach is needed in addressing the health needs of female sex workers. Encouraging FSWs to come together and advocating together for their needs is a key resource from which resilience and forbearance can grow. Upstream prevention through strengthening of education systems and supporting girls to stay in school and complete their secondary and/or tertiary education would help them gain training and skills, providing them with options for income generation during their adult lives.

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Implementing Social Networking Strategy to Reach Men With Mobile Jobs: Lessons Learned From an HIV Clinic in Malawi

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Background: Malawi has made great strides in reaching UNAIDS 95-95-95 targets by achieving 88-98-97 as of December 2020. Case identification remains the greatest challenge in achieving epidemic control. To address this, targeted case identification methods are needed to reach hard to reach populations such as men and youth. Lighthouse Trust ART clinic implemented a social networking strategy (SNS) targeting men in 9 facilities in Lilongwe, Malawi.

Material and Methods: The SNS program aimed at recruiting minibus “call boys” and Kabaza bicycle and motorcycle taxi operators at the minibus depot surrounding the clinics. We also identified recruiters in the clinic from recently tested high-risk men who tested negative for HIV and men who tested positive. Recruiters must be comfortable talking about HIV and knowledgeable about HTS and testing locations. The recruiters were trained on general SNS, their role as a recruiter and ways to approach their peers for HIV testing. Recruiters were given “coupons” that allows the clinic to link the contact with their recruiter. The contacts are to

bring the coupons to the clinic for testing within 10 days of receiving the coupon. Contacts that tested positive were linked to care and those who are HIV negative, but high risk were screened for PrEP eligibility. The contacts were also offered to become recruiters. Transport reimbursement for contacts is provided when the contacts report to the clinic for HIV testing.

Results: We identified a total of 217 recruiters between March-December 2022. Most were call boys and Kabaza drivers identified from the bus depot. From the clinic we identified recruiters who were road construction workers, street vendors, guards, gardeners, mechanics and DJs. The recruiters found a total of 1227 contacts for HIV testing. Of those 832 (68%) came to the facility for testing and overall yield was 15%.

Conclusion: With such a high yield, SNS is an effective method on identifying high-risk men with mobile jobs to be tested for HIV. Majority of the men identified are day laborers, therefore the transport reimbursement is essential to encourage the men to come to the clinic for HIV testing.

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Influence of Religiosity and Locus of Control on Adherence to Antiretroviral Drugs Among Key Populations Living With HIV in Nigeria

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Background: Religion and locus of control (LoC) are social factors that influence the livelihood of many Nigerians. This effect is seen in the adherence of people who live with HIV and are on antiretroviral drugs. This study examined the influence of religiosity and LoC on adherence to antiretroviral drugs among key populations (KP) receiving care in

13 Global Fund (GF) supported FHI 360 One stop shops (OSS) in Nigeria.

Material and Methods: A total of 711 KPs including Men who have Sex with Men (MSM), female sex workers (FSW), people who inject drugs (PWID), adolescent girls, and adolescent and young women (AGYW) on Antiretroviral therapy (ART) were randomly selected from OSS providing care and support services to KPs between January and December 2022. Using an ex post facto survey design, T-test, ANOVA and regression statistics, the influence of religiosity and locus of control on adherence to ART was assessed.

Results: Of the 711 participants recruited for the study, 68.8% were male, with 87.5% identifying as MSM, and 12.5% as PWIDs. Also, 31.1% were female (43.2% identifying as AGYW/AYP, 47.2% as FSWs, and 9.4% as PWIDs). Most participants, 81%, were between the ages of 14 and 34, while 19% were >35 years. The level of religiosity among participants was classified as high (45.1%), moderate (40.5%), and low (14.4%). Participants' level of religiosity had no statistically significant impact on adherence to ART ($F = (2, 702) = 1.857; p > 0.05$). However, LoC was found to have a statistically significant correlation with ART adherence ($F = (2, 702) = 3.631; p < 0.05$), with participants who had an internal LoC showing 95% adherence, compared to those with an external LoC, who had a 50% adherence rate. Also, there is significant correlation between the KP typologies and LoC ($r = 0.871, P < 0.05$). No correlation was found between participants' age or education level and ART drug adherence.

Conclusion: The LoC of KPs was found to be correlated with poor adherence to ART, thus, Interventions aimed at promoting an internal locus of control may be beneficial in increasing adherence to ART. It is recommended that healthcare providers assess patients' LoC prior to ART.

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Using Multi-Channel Demand Creation to Address Awareness as a Barrier to the Uptake of HIV Self-Testing (HIVST) Kit in the Private Sector

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Background: Despite the introduction of HIVST as one of the HTS strategies, uptake in the private sector has been very limited. This low uptake from the Strengthening HIV self-testing in the private sector (SHIPS) market research report is attributed to several barriers which includes lack of awareness from the clients on their availability in community pharmacies or patent medicine vendors. The low awareness remains a huge challenge to the private sector stocking HIVST kits. This pilot implementation is demonstrating the impact of a multichannel demand creation aimed at reaching different segments of the population.

Material and Methods: SHIPS is currently implementing a fifteen (15) months demand creation campaign through community mobilization, community activation as well as social media. Using community mobilization and community activation, the project is improving awareness about and uptake of HIVST using one-on-one and group approaches as well as road shows to reached individuals in selected communities in Lagos and Federal Capital Territory (FCT). Furthermore, utilizing the popularity of social media, effective messaging was curated on social media.

Results: Within (9) months (April to December 2022), the traditional demand creation campaign reached 34,206 and 20928 during community mobilization and community activation respectively within the pilot communities. While on social media 638,437 individuals were reached on Instagram, Facebook and twitter using sponsored ads, influencer marketing and content creation.

Additionally, the increase in awareness catalyzed an increase uptake of HIVST kit in the private sector from an initial baseline sale of about 152 HIVST kit in 3 months to a total sale of 7317 HIVST kits in 9 months indicating a 4711.84% increase.

Conclusion: Implementing multi-channel demand creation activities to target different segments of the population will help break the barrier on low awareness on the availability of HIVST kits in the private sector thereby resulting in increasing number of providers stocking HIVST kits and uptake from clients.

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Displacement-Related Challenges Faced by Internally Displaced Persons in Northern Mozambique and Their Implications for HIV Testing: A Qualitative Study

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Background: Exposure to traumatic events such as forced displacement is associated with an increased risk for HIV. However, HIV testing among internally displaced populations (IDPs) is difficult, with scant literature documenting barriers to HIV testing among this group, particularly in southern Africa. Northern Mozambique has one of the highest HIV incidence rates in sub-Saharan Africa. Our study investigated how displacement experiences were tied to risk of HIV acquisition and explored HIV awareness and testing for young adult IDPs settled in Nampula City, Mozambique.

Material and Methods: We used a purposive sampling strategy to conduct six focus group discussions with IDPs, district representatives, and community leaders and three key informant interviews with policymakers and humanitarian

personnel. We used thematic analysis to analyze the data.

Results: The study included (n=51; 29.4% Female, 21.6% under 25) participants and sampled until saturation was met. Participants reported that displaced young adults, especially young women were highly vulnerable to HIV infection due to transactional sex, early marriage, and sexual violence. However, those parous had at least previously engaged in HIV testing services, with young men mentioning less frequent engagement. IDPs and key stakeholders noted that for IDPs, financial, linguistic, and geographic barriers impeded engagement with health services and cited competing priorities between understanding one's HIV status, and more basic needs like food, security, and livelihoods. Interrupted education and conversations around HIV stigma also demonstrated potential constraints to HIV testing among displaced youth. Other challenges mentioned were the lack of interventions promoting HIV testing that previously existed in IDPs' communities of origin (i.e., HIV lay counselors and mobile clinics). Stakeholders identified structural barriers to HIV testing, describing primary health care centers as unable to respond to the past years' influx of IDPs, and IDPs citing the need for government facilities to enable linkage to health services within their communities.

Conclusion: Although displaced young adults occupy an environment highly vulnerable to HIV infection, several displacement-related challenges create barriers for HIV testing. IDPs mentioned HIV testing interventions that had proven helpful in the past, demonstrating that tailoring said interventions to the needs and context of displaced young adults may prove substantive in future HIV programming.

710

Demographic Pattern of Reported Gender-Based Violence in Plateau State; APIN Experience

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Background: In recognition of its constraints against sustainable development, the international community included the elimination of Gender Based Violence (GBV) as a global goal to be achieved under the Sustainable Development Goals by 2030. Although national programs are being strengthened towards curbing GBV, its occurrence in Plateau state is increasing; with youth and adolescent women at high risk. It is a global health/human rights issue with individual and social determinants such as norms and cultural beliefs. Awareness and sensitization programs on the dangers of Gender Base Violence especially sexual violence are on-going in health facilities and communities, however GBV still thrives. The objective of this study is to describe the pattern of reported GBV cases in APIN program in Plateau State so as to strengthen tailored intervention to curb the menace.

Material and Methods: A retrospective study of facility data comparing male and female adolescents and young adults documented cases from October 1, 2020 to September 30, 2021. Data was sourced from GBV registers and Electronic Medical Records from 29 APIN- supported comprehensive health facilities and analyzed.

Results: 699 cases were reported within the period; majority of these were females 500 (71.5%). In the age group 10 – 29 years, 384 (55%) cases were reported. Further dis aggregation by age group showed that 99 (79.2%) GBV survivors were in the adolescent age group of 10-19 years and 198 (76.4%) young adults, 20 -29 years were female.

Conclusion: Findings from this study concurs with existing literature that Gender Based Violence is prevalent among female adolescents and young women. Tailored intervention on GBV prevention is highly recommended.

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Undetectable=Untransmissible (U=U): Awareness and Acceptability Among Newly Diagnosed Patients Living with HIV/AIDS in Rivers State; South-Southern Nigeria as It Affects Treatment Outcome

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Background: The concept of U=U has proven that people with an undetectable viral load value cannot transmit HIV. This can be achieved by consistently taking antiretrovirals without any interruption in treatment. Antiretroviral therapy compliance has been demonstrated to reduce the risk of transmission, improve the health of HIV-positive patients, and limit viral multiplication. It may take up to 6 months of ART to achieve an undetectable viral load. Continued commitment to ART is necessary to keep the virus suppressed and prevent transmission of HIV through sex. The objective is to determine the level of awareness and acceptability of U=U in newly diagnosed PLHIVs, as well as its impact on treatment outcomes after 6 months.

Material and Methods: 3 public and 3 private health facilities (HF) were selected for this study. 115 clients (98 from public HF and 17 from private HF) who were enrolled in care in these facilities in July 2022 were all selected for this survey, and a semi-structured questionnaire was administered to evaluate their responses on having heard about U=U from their healthcare providers or elsewhere, acceptance of the information. VL results were also assessed after 6 months of being on treatment.

Multivariable logistic regression was used to find associations between exposure to U=U messaging and health outcomes. SPSS software V25 is used for statistical analysis.

Results: 68% (n=67) from public HF and 88% (n=15) from private HF reported discussing U=U with the healthcare providers. Prevalence rate of adherence to clinic appointments and medications irrespective of the untoward side-effects was higher in those with exposure to U=U with rate of 91% (Public HF n=61, private HF n= 14). Viral suppression to undetectable levels was higher in patients exposed to U=U information, 90% (n=48 out of 53 VL results from patients exposed to U=U) of the total 89 VL results received after 6 months on treatment. 5% undetectable VL suppression was recorded in patients who were not aware of U=U.

Conclusion: The study found that private health facilities had higher U=U coverage than public health facilities. U=U discussion with PLHIVs should be considered by clinical practitioners as a recommended practice.

712

Abstract 712 was withdrawn.

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Prevalence and Factors Associated With Risky Sexual Behaviors Among Female Adolescents in Zambia

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Background: In sub-Saharan Africa, female adolescents are four times more likely to get HIV than boys; Zambia reports an HIV seroprevalence of 13.9% among women VS 8% among men. Adolescents are vulnerable for various adverse health outcomes due to lower perceptions of consequences of risky sexual behaviors (RSB). HIV/AIDS and unintended pregnancies continue to be major causes of mortality among adolescents in

Zambia, necessitating public health action. This study aims to explore the prevalence and factors associated with RSB among Zambian female adolescents.

Material and Methods: RSB is defined as sexual activities which expose people to the risk of HIV, STIs and/or unintended pregnancies, this includes early sexual initiation, sex with multiple partners, having sexual intercourse while intoxicated, transactional sex, and unprotected sex. Data on adolescent females, aged 15-19 (n= 3000), were obtained from the 2018 Zambia Demographic and Health Survey, an interviewer-administered, nationally representative survey that used multistage sampling. The study conducted multivariable logistic regression to explore the correlates of RSB.

Results: Of respondents, 49.7% reported ever having sexual intercourse and 35.3% (71.1% of sexually active respondents) reported engaging in RSB. The following RSB percentages were reported: intercourse before age 16 (25.1%), not using condoms at last intercourse (18.8%), engaging in transactional sex (3.1%), alcohol use at last intercourse (2.3%) and multiple sexual partners (0.9%). Educational attainment and household wealth showed strong inverse trends with RSB and there were notably large geographic differences in RSB within Zambia (22.1% in Lusaka region versus 62.4% in Western province). The multivariable results revealed that those who were older, employed, less educated, less wealthy, residing in Southern, Western and Northwestern provinces and those with no exposure to print media were significantly more likely to have engaged in RSB (AOR: 1.28-4.11, $p < 0.05$). Among sexually active females, similar trends were noted except that younger, non-married adolescents without internet access were at higher risk of RSB.

Conclusion: This study has shown that over a third of Zambian female adolescents and over 70% of the sexually active females are at high risk of adverse reproductive health outcomes. Therefore, there is a need for more adolescent health programs targeting SRB.

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Against All Odds! Surviving COVID-19 Control Measures: The Experiences of Female Sex Workers in Nairobi, Kenya

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Background: Most female sex workers (FSW) in Kenya solicit for sex in physical places such as bars, streets, and clubs. At the beginning of the COVID-19 pandemic, the Kenya Ministry of Health instituted movement cessation measures in accordance with the recommendations of the World Health Organisation. We explored the ways in which FSWs in Nairobi, participating in an existing study, were affected by COVID-19 and some of the ways they coped with the hardships.

Material and Methods: The Maisha Fiti study is a mixed methods longitudinal study that recruited a random sample of 1003 FSWs accessing sexual reproductive health services from 7 Sex Workers Outreach Program (SWOP) clinics in Nairobi. A random sample of 47 women was sampled for an in-depth qualitative interview at follow-up, 4-5 months into the pandemic. Through the interviews, we sought to understand women's interpretation and experiences of violence, mental health, alcohol and substance use, HIV risk behaviours, and the effects of COVID-19 on their lives. Data were transcribed, translated, and coded inductively.

Results: The COVID-19 measures in Nairobi disenfranchised FSWs due to reduced access and utilisation of healthcare services, decreased income, lack of social support/protection from the government, and increased sexual, physical, and financial abuse by clients and law enforcement. Due to increased economic hardship, FSWs experienced poor mental health and strained interpersonal relationships. Some of their coping mechanisms included applying austerity measures like skipping meals, reducing alcohol use and smoking, starting small businesses to supplement sex work or quitting sex work altogether, and relocating to their rural homes.

Conclusion: Due to their already existing vulnerabilities and the customer-facing nature of their work, sex workers were hit hard by the COVID-19 restriction measures. It is imperative to design interventions that ensure continuity of access to health services, prevent exploitation, and ensure the social and economic protection of FSWs during times of extreme economic shock. Doing so could help reduce factors that put their sexual health at risk, such as reduced condom negotiation power, economic and sexual exploitation, and violence.

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Patient and Provider Experiences and Perceptions Influencing Uptake of Pre-exposure Prophylaxis in a High Priority District, South Africa

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Background: Pre-exposure prophylaxis (PrEP) acceptability for HIV prevention is increasing. Studies in community settings reveal PrEP uptake challenges. Our study sought to describe healthcare clients and provider experiences and perceptions in the uptake and delivery of PrEP in Ekurhuleni District, South Africa.

Material and Methods: In July 2020, we conducted a cross-sectional study in three purposely selected clinics in Ekurhuleni, South Africa. We used semi-structured in-depth interview (IDI) guides to collect data from healthcare clients attending routine clinic visits and healthcare providers in English or the preferred dominant language. The topics explored included: knowledge and awareness of PrEP; where and when to receive PrEP; experiences when accessing PrEP; barriers to PrEP uptake and provider perceptions of PrEP. IDIs were digitally recorded, transcribed, translated, and analysed using an inductive and deductive thematic analysis following the social cognitive theory to describe behavioural, personal, and social/environmental factors influencing uptake of PrEP.

Results: Overall, 30 participants (n=24 clinic clients and n=6 healthcare workers) were qualitatively interviewed were mostly female (n=16, 66.7%), not married (n=16, 66.7%), and of median age of 37 (IQR: 31-40) years. Uptake of PrEP among clinic attendees is influenced by the awareness of the protective effect of PrEP on onward HIV transmission due to unprotected sexual acts. We identified a high self-efficacy among the patients on how to persistently use PrEP for HIV prevention. Moreover, there was a considerable level of understanding of PrEP for HIV prevention. However, we noted that some patients were not fully knowledgeable on PrEP dosage. Reinforcements that encouraged PrEP uptake were identified as availability of and accessibility to PrEP in clinics. Of concern was healthcare providers' negative views which were likely to interfere with their willingness to deliver PrEP to patients preventing PrEP accessibility.

Conclusion: There is some knowledge and awareness of PrEP for HIV prevention in Ekurhuleni. To increase the further accuracy of knowledge, community education is required. Reducing the health services barriers through challenging the potential for stigmatisation of PrEP users by healthcare providers is necessary.

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Community Dialogues Identify and Address a New Barrier for Medical Male Circumcision in Tete Province, Mozambique

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Background: Voluntary medical male circumcision (VMMC) is a cost-effective intervention to reduce HIV acquisition. Demand generation (DG) for VMMC is critical for its uptake; however, it addresses loss of wages, lack of transportation, cultural diversity and other factors, probably from provider perspectives, not evolving with beneficiary perceptions. With low VMMC uptake in two areas served by VMMC in Mozambique, a local NGO sought to identify and deconstruct the reasons through open dialogues with community members, supported by local leaders.

Material and Methods: Dialogues were setup by invitation house by house, and using community leaders to enroll people, in Songo and Degue villages in Tete. Starting question was “why men from here are not seeking VMMC services?”, followed by exploration of all reasons given, looking at common and divergent arguments from the audiences.

Results: Two rounds of dialogues involved 41 men and 4 women, including 12 community leaders. Initially all said the reason for not seeking VMMC was “it is not our tradition”. After explaining that benefits of VMMC also included protection of the spouses against cervical disease, two additional excuses arose: lack of time, and fear of losing sexual potency. These were widely known from other places. However, the suspicion that health workers “used the removed foreskin to catch a fish with gold in its head and thus become rich”, defended by all men, was a novelty. In the dialogue, men conceded that they trusted health services to dispose placentas, and perhaps the “golden fish” defense could not be entirely true. Older males became more receptive of VMMC, admitting that although they had reduced sex life, and less likely to acquire HIV, they had problems cleaning up their penis due to hand tremor and/or poor eyesight, thus without foreskin they could “smell better”.

Conclusion: The “golden fish” allegation was new as barrier to seek VMMC, and was only elicited through deep, honest conversations with men in their settings. Thus, DG for VMMC requires persistent exploration of barriers, as they seem to evolve. New tactics in DG conversations are needed, segmented by benefits by age groups, going beyond mere HIV protection.

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Correlates of Alcohol Use and HIV Related Risks Among Young People and Adults in Southern Africa in 2015 - 2017: A Cross Sectional Study

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Background: Alcohol use is a significant public health problem globally. Alcohol use is common among PLHIV. Alcohol use is an HIV transmission risk factor, as well as a factor impacting the clinical manifestations and management of HIV. Alcohol use in PLHIV decreases adherence and effectiveness of ARVs. It is escalating in sub-Saharan Africa due to aggressive marketing and lack of individual and policy level interventions. The national representative population-based HIV Impact Assessment (PHIA) data was used to determine the correlates of alcohol use related to HIV risk factors in young people and adults in Southern Africa.

Material and Methods: This was cross sectional study conducted between 2015-2017 period in Eswatini, Malawi and Zambia. The survey employed multistage sampling strategy to recruit study participants at household level. The sample size was as follows Eswatini(n=9885) Malawi(n=19405), and Zambia(n=27,382). Descriptive statistics, bivariate and multivariable logistic regression models that identify the correlates of alcohol use were computed. HIV related factors were entered into the multivariable models if the p value was <0.20 in the bivariate analysis. We considered the p value of <0.05 statistically significant.

Results: The correlates of alcohol use were being male (aOR: 4.62 (95% CI: 3.35 -5.79), age 96% (aOR:1.96; 95% CI: 1.48–2.59) and (aOR: 1.70; 95% CI: 1.24-2.32) among the age group 20 – 24 years, HIV positive status (aOR: 1.49, 95% CI: 1.12 -1.99), multiple sexual partners (aOR: 11.90, 95% CI: 6.76 - 20.93) and transactional sexual relations (aOR: 2.58, 95% CI: 1.45 -4.58). TB was not associated with alcohol use.

Conclusion: Alcohol use was associated with age, sex, HIV status and risky sexual behaviours (several partners and transactional sex). There is an urgent need for targeted alcohol interventions integration with HIV services and such interventions could be integrated with sexual and reproductive health programs.

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Abstract 718 was withdrawn.

719

People Living with HIV Differentiated Service Delivery Model Preferences, a case of Lango Subregion in Northern Uganda

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Background: Differentiated service delivery (DSD) model is one of the HIV care approaches by the Ministry of Health Uganda (MOH) to support retention of HIV positive clients in care. MOH recommends that PLHIV should be enrolled on DSD models based on certain patient characteristics. MOH set enrollment targets for DSD models as follows; Community Drug Distribution points (CDDPS)-10%, Clients led ART Delivery (CLAAD)-15%, Facility Based groups (FBG)-10%, Facility Based Individual Management (FBIM) 10% and Fast Track Drug Refill (FTDR) - 55%. By January 2022, client's enrollment by model was not meeting set target in Lango. This gap, prompted the desire to establish clients DSD model preferences and its effect on meeting MoH enrollment targets.

Material and Methods: Adult healthcare clients in care were sensitized about the recommended DSD models. Using a structured tool, clients were provided with additional information on DSD models while addressing existing miss conceptions, interviewed, consented and enrolled on the chosen model. Patients' choice of DSD model was documented and updated in Electronic Medical Records (EMR). Data was abstracted from the EMR and analyzed to determine enrollment levels by model. Enrollment levels for the pre and post intervention periods were compared for each model. Percentage point deviation from the MoH

targets were determined and compared for the two time periods.

Results: 81% of clients changed to a new DSD model in the post intervention period. 7%, 4% and 8% were enrolled on CDDP, CCLAD and FBG respectively, although no client was on the 3 models in the pre-intervention period. Information shared during the intervention probably created clients' confidence in the group and community-based models thus the choice of these models. Enrollment on FBIM and FTDR dropped in the post intervention period. Despite the drop, FBIM & FTDR models were most preferred at 58% and 22% respectively. Preference for individualized models probably due to the desire for privacy and confidentiality. Overall enrollments for all the five models got closer to meeting the MoH enrollment targets in the post intervention period as evidenced by a decrease in percentage point deviations from the MoH target for all models.

Conclusion: PLHIV have preference for individualized models. Policies should focus on this need. Future research should assess the reasons for patients' distrust of the community models.

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Vicarious Trauma Among Health Care Workers Serving GBV Survivors. Case Busia County, Kenya

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Background: Vicarious trauma is the result of being exposed to and empathically listening to stories of trauma, suffering, and violence caused by humans to other humans (Pearlman and Saakvitne 1995). Described as the cumulative effect of working with traumatized individuals, such as survivors of violence, that can transform and interfere with a provider's feelings, memories, sense of safety, and self-esteem (McCann and Pearlman 1990; Pearlman and Saakvitne 1995; Hernandez, Gangsei et al. 2007). A provider's trauma response may become more severe with repeated exposure to traumatic material, such as a provider responding

to survivors' experiences of violence and delivering first-line support. The objective of the study is to determine the prevalence of vicarious trauma and the general state of mental health for healthcare workers.

Material and Methods: The study population included healthcare workers within Busia County serving the survivors of GBV. The study period was 2022 16 days of activism. A survey was administered through KOBO collect App to the healthcare workers serving survivors of GBV. These healthcare workers include clinical officers, nurses, counselors, and social workers. The survey was administered from 30th November 2022 to 13th January 2023.

Results: The respondents were 25 health care workers (N=25, Male, 8(32%) and Female 17(68%) with majority of the respondents aged between 31-35years (40%). Clinical officers are the majority (48%) health care workers serving GBV survivors. Using the crisis & Trauma resource institute INC scale, 80% of the respondents are highly affected by vicarious trauma while with compassionate fatigue 48% are highly affected and 40% by moderate effect.

Conclusion: Vicarious trauma, compassion fatigue, and burnout can result in decreased morale among staff; lack of team cohesion; poor communication within an organization; decreased collaboration; and delivery of poor-quality services. There may be high levels of staff turnover within sites and organizations that do not provide mental health and psychosocial support for staff. This results in the loss of time and resources that need to be redirected to onboard and train new staff, which also drains the reserves of the remaining staff.

721

A Good Start in Life: An Investigation on Basic ECD Knowledge and Practices in Two Districts of Zambezia Province

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Background: The timespan between pregnancy and a child's third year of life is crucial, since 80% of the baby's brain develops in this period. Almost 250 million children under 5 from low and middle income countries miss the opportunity to reach their full growth potential, impacting their possibilities in life. This study aims to investigate the basic ECD knowledge among young people and pregnant women, and to assess practices and behaviours.

Material and Methods: A 14-items survey was administered to women and mothers in labour with their partners, aged from 10 to 24 years, referring to five Healthcare Centres (HC) across Mocuba and Quelimane Districts (Zambezia Province) between May and June 2022. The research was implemented within a framework of a Cuamm project in collaboration with Unicef Mozambique. Two scores, "level of ECD knowledge" (ranging from 5-high to 20-low), and "behaviour during pregnancy", (from 0-bad practice, to 4-good practice), were developed. A univariable logistic regression analysis assessing the association between each of the two scores and the independent variables was performed. P was considered significant when <0.05.

Results: 1052 people answered the questionnaire, mostly women (88.7%). The level of ECD knowledge was generally low (median = 14, IC: 13-16), and negatively associated with being a pregnant or a new mother (p= 0.001) and attending a traditional doctor (p= 0.033). Being from Quelimane urban setting appears to be linked to a higher level of knowledge, compared to rural settings like Mugeba areas (p<0.001). The "behaviour during pregnancy" score was good for 64.6% of the pregnant women enrolled, and positively correlated with being from Quelimane district (p<0.001), a high level of ECD knowledge (p= 0.009), and with having heard from healthcare professionals about the importance of the interaction with the baby (p<0.001).

Conclusion: The level of knowledge of ECD was generally low, demonstrating the importance of structuring interventions to sensitize the new parents about this topic. The promotion of models and behaviours of "positive parenting", birth preparedness and parent-child interaction should become a priority for public health intervention at

the community level through existing platforms, and in HC through specific trained personnel.

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Partnership to Assess the Impact of Testimonials From People Living With HIV/AIDS

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Public testimony is an intervention strategy with great potential in the field of health. Testimonials by people living with HIV (PLHIV) are frequently used to combat discrimination, improve access to services and care and communicate preventive messages. However, the impact of testimony does not always correspond to the expected benefits and the absence of a way to assess its effects is a major shortcoming. Leveraging existing partnerships and infrastructure, the main objective of this project is to generate preliminary data on the effectiveness of public testimony by PLHIV.

The specific objectives are to bring together community and academic partners who have developed expertise in witnessing by PLHIV, to develop a grid of criteria to assess the effectiveness of different types, approaches and practices of witnessing and to validate the grid from examples of testimonials from an existing archive. The grid will cover several aspects including the experiences communicated, the emotions felt, the structure and vocabulary used, the evocation of a community dimension and the type and quality of reception. We anticipate that this evaluative framework will increase understanding of the impacts of testimony on health, quality of life, interpersonal communication and social change. The project will provide a method and tools that will increase the empowerment of PLHIV as well as the capacities of community groups and the effectiveness of their actions. At a later stage, the evaluation grid could be applied in several contexts and practice settings. Ultimately, more effective testimonial communication will help reduce stigma and discrimination, improve health outcomes and quality of life for PLHIV, and strengthen prevention.

723

Reducing Drug Use Stigma in HIV Clinics in Tanzania to Improve HIV Treatment for People Who Use Drugs: Results of a Pilot Study

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Background: In Tanzania, HIV prevalence among people who use drugs (PWUD) exceeds that in the general population by 4-7 times. In HIV clinics, stigma toward PWUD inhibits testing and treatment and must be addressed. We adapted and pilot tested an evidence-based health facility HIV-stigma reduction intervention to address drug use-stigma in HIV clinics in Dar-es-Salaam, Tanzania. The ADAPT-ITT model guided the adaptation through formative research, a 2-day stakeholder workshop, and external expert review. Five 2.5-hour trainings delivered across 2 weeks reached 227 HIV clinic staff (HCS) (99 clinical/128 non-clinical) in 7 clinics (January-April 2022).

Material and Methods: A mixed-methods approach assessed acceptability, feasibility, and preliminary effectiveness through: pre-post (3-month) HCS surveys (n=148); 8 post-training HCS focus group discussions (FGDs) (n=64, 27M/37F); and process documentation (attendance sheets/trainee evaluation forms/training observations). We measured three quantitative outcomes with following scale ranges: stigma (Opening Minds Scale; 8-40), social distance (Bogardus scale; 6-24) and drug-use knowledge (1-5). We assessed changes in outcomes by linear mixed effect models with random effects by individual and fixed effects to control for demographics, clinic, duration and type of employment, contact with PWUD, and social desirability bias.

Results: High attendance demonstrates the intervention's feasibility: 95% of participants attended 4+ sessions (73% all 5 sessions). On a 5-point scale (5=highest agreement), participants rated the intervention as very acceptable (4.7/standard deviation (SD)=0.4), appropriate (4.8/SD=0.3), and feasible (4.7/SD=0.4). In the FGDs, participants reported liking the content, structure, and participatory nature of training. They noted new awareness of their own stigmatizing behavior towards PWUD in clinics; new understanding of drug use as a medical condition; increased comfort and empathy and reduced fear related to PWUD; and improved skills for providing HIV services to PWUD. Quantitative outcome measures showed significant change post-intervention: HCS stigma towards PWUD declined by -6.1 (Confidence Interval(CI)=-7.0 to -5.2); HCS desire to maintain social distance from PWUD declined by -4.1(CI=-5.8 to -1.0) and drug-use knowledge increased by 1(CI=0.9 to 1.1).

Conclusion: Context-adapted drug-use stigma reduction training within HIV clinics is acceptable, feasible and indicates preliminary effectiveness. Ending HIV clinic drug-use stigma is an essential step to optimizing HIV testing and treatment for PWUD.

724

Colliding Wars: A Systematic Review on HIV Responses in Conflict-Affected Settings

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Background: Conflicts and warfare are a rising threat to population wellbeing. New HIV cases are often driven by violence, poverty, and limited health care provision in humanitarian settings. HIV risk and poor response in conflict-affected areas threaten global efforts towards its elimination.

Material and Methods: A systematic review was conducted to recognise changes in HIV prevention, testing, and treatment in conflict-affected settings, especially among key populations, adolescent girls, and children born to HIV-affected mothers. HIV service availability, delivery, and continuity were considered throughout the study. The search was conducted through MEDLINE, Embase, Scopus, CENTRAL, OVID, and CINAH databases to capture relevant publications up to June 2022. Six reviewers independently screened the titles and abstracts of the retrieved records in a first round and full texts in a second round; any variances between reviewers were resolved by discussion and consensus.

Results: A total of 7378 studies were identified through the search process, 17 of which fulfilled the inclusion criteria of this review. Studies reported higher HIV risk and incidence amongst adolescent girls and young women, especially among the internally displaced. Furthermore, studies reported HIV testing and treatment service interruptions in conflict settings, mostly as a result of facility looting and damage, supply chain disruptions and medications stock-out, infrastructure and communication hurdles, and population displacement. Studies also suggested an increase in loss-to-follow-up cases in conflict settings. Children living with HIV have much lower rates of clinic follow-up and medication adherence after a humanitarian crisis driven by their social backgrounds.

Conclusion: A combination of forced displacement and health system collapse (including interrupted and inadequate supply chains) are fuelling HIV risk and progression in conflict-affected regions. Evidence suggests that adolescent girls, refugees, and young soldiers are particularly marginalised. Their inclusion in humanitarian response plans is crucial to safeguard progress towards HIV elimination.

725

“They Fear the Solution That They Will Be Given”: Men Aware of Their HIV Positive Status but Not on Art in Mozambique

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Background: There is paucity of information regarding the profile or characteristics of people living with HIV who are aware of their status but not on treatment. This group is often hard to reach, yet understanding their characteristics, beliefs, knowledge and attitudes around HIV as well as their access to information sources is essential for providing appropriate treatment and services. In Mozambique, viral load suppression (VLS) among all adults is estimated to be 64.1%, with a strong gender and age gradient (VLS among adult men: 58.8%; VLS among men 25-34: 43.3%).

Material and Methods: We conducted a mixed methods study in three provinces of Mozambique. The quantitative sample consisted of men 25-34 who had previously tested positive for HIV (N=1934) who had recently started/restarted ART (N=1605) or were not currently on ART (N=329). Qualitative data comprise adult men living with HIV (MLHIV) 18-35 not on ART (N=7).

Results: MLHIV not on ART were less likely to be married/cohabiting ($p < 0.05$), but did not otherwise differ significantly by age, education, wealth quintile, religion or media access to those on ART. Those not on ART had significantly lower levels of knowledge about treatment, more stigmatizing attitudes about both HIV and ART and lower awareness of U=U than their ART-using peers ($p < 0.05$). Interview data suggest men not using ART expressed concerns about stigma, HIV status disclosure risk, and side effects should they start treatment. Discussing ART, one commented: “they fear the solution that they will be given”. Most participants not on ART in the qualitative study struggled to accept that an “undetectable” viral

load meant that it was not possible to transmit HIV to another person through sex.

Conclusion: Our results suggest the background characteristics of MLHIV in Mozambique who are on, and not on ART do not differ in any meaningful way. The key differences we found were in HIV knowledge, attitudes and fear of disclosure. The concept of an undetectable viral load was largely well understood, but there remains a gap in understanding of HIV being untransmissible as a result. Targeted U=U information is needed for this group.

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Development and Validation of the Transition Readiness Assessment Tool for Adolescents and Young Adults Living With HIV in Southwestern Uganda

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Background: Treatment outcomes are reported to be poorest among adolescents and young adults living with perinatally acquired HIV (AYPLHIV) compared to adults and young children living with HIV. The rates of disengagement from care, loss to follow up, poor adherence to ART and mortality are highest during the transition from pediatric to adult HIV care. AYPLHIV facing transition should be equipped with skills in health care management, self-care, and health care decision making, and assessed for transition readiness before transition.

Material and Methods: We developed and validated a transition readiness scale for use among AYPLHIV in rural Southwestern Uganda using mixed

methods between December 2020 and November 2021. First, we conducted in-depth interviews with AYLPHIV, caregivers, and healthcare providers to get their perspectives on transition readiness of AYLPHIV facing transition to adult HIV care. We generated an initial item pool of 71 items that we reduced to 54 items through focus group discussions with AYLPHIV and health caregivers. We pilot tested the 54-item questionnaire with a convenience sample of AYLPHIV (n=30) that resulted into 49 items. We then administered the 49 items questionnaire to a validation sample of AYLPHIV (n=300) majority of whom had not transitioned to adult HIV care. We used confirmatory factor analysis to verify the proposed scale structure. We evaluated the scale for reliability and validity.

Results: The mean age of the participants in the development phase was 20 (standard deviation [SD 3.1) while that for the pilot phase was 20.07 (SD=3.27) years, while the mean age of the validation sample was 19.1 (SD=2.81) years. The duration on ART for the validation was 15 (SD=4.72) years. We identified four domains related to transition readiness including self-management, health care navigation, transition preparation and HIV stigma. The 23-item scale was internally consistent with a Cronbach's alpha of 0.87 with good test-retest and interrater reliability. Construct validity was good as demonstrated through correlation with related constructs including social skills (p<0.001) and self-management (p<0.001) as well as age (p<0.001).

Conclusion: The new 23 item transition readiness scale is a reliable and valid measure of assessing transition readiness among AYLPHIV.

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Self-Management Needs of Adolescents and Young Adults Living With HIV in Rural Southwestern Uganda

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Background: The number of adolescents living with HIV has remained high in Eastern and Southern Africa due to availability of and access to antiretroviral therapy that has enabled children living with HIV to survive into adolescence and young adulthood. HIV treatment outcomes are poor among adolescents and young adults compared to other age groups especially during the time of transition from the pediatric to adult HIV clinics and worst among adolescents and young adults living with perinatally acquired HIV (AYLPHIV). We conducted a qualitative study to understand self-management needs of AYLPHIV in rural southwestern Uganda.

Material and Methods: We conducted 60 in-depth interviews including AYLPHIV (n=30), care givers (n=20), and 10 health care providers (n=10) from the HIV clinic at Mbarara Regional Referral Hospital. We used an interview guide that focused on perceptions about transition to adult HIV care, self-management skills, and needs of the AYLPHIV before transition, and barriers and facilitators to self-management and navigating the adult HIV clinics. All participants provided written assent and/or informed consent to enroll. We used thematic content analysis to identify themes related to AYLPHIV's self-management needs. The data analysis process was guided by MAXQDA software and COREQ was followed.

Results: We identified several self-management needs required by the AYLPHIV to assume responsibility for their health and navigate HIV care on their own, without the involvement of health care providers or caregivers. Participants mentioned, social support, empowerment, resilience and acceptance of the HIV status, HIV status disclosure, health care skills, and financial stability as the pertinent needs of the AYLPHIV.

Conclusion: AYLPHIV in sub-Saharan Africa who are preparing to transition should be supported by peers, caregivers, and health care providers, need empowerment and resilience skills, self-care skills,

financial stability, HIV status disclosure and HIV status acceptance in order to assume responsibilities related to their own health.

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The Health Systems and Demand Side Factors to Achieving the 95 95 95 HIV Targets in Ghana: A Qualitative Study of Stakeholder's Experiences

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Background: While the last decade has seen significant strides in progress of HIV indicators, many countries, including Ghana, struggled to meet the UNAIDS HIV 90 90 90 target in 2020. It is important to learn and understand systems enablers and patients' perspectives on best practices and strategies that can facilitate the attainment of the new 95 95 95 targets by 2030. Low population testing and patient attrition and continuity of care as well as ineffective monitoring of patient progress in care are significant barriers to achieving the 95% PLHIV status and 95% viral suppression target in Ghana. This study explored stakeholder perspectives regarding best systems and approaches to meeting the 95 95 95 targets in Ghana.

Material and Methods: The study employed a qualitative research design involving the use of semi-structured interviews with 45 key stakeholders across the HIV treatment cascade as well as patients to learn and develop in-depth understanding about appropriate actions and methods to address barriers to continuity of care and viral suppression. The participants, who were purposively selected included programme managers, healthcare workers, policy makers, CSOs, NGOs and Media practitioners. The interviews were coded and analysed using the thematic content analysis approach.

Results: Four recommended system strategies were identified as having the potential to enhance the operational activities in the HIV treatment cascade. They included reliable reporting systems, staff motivation to ensure commitment to adopting testing and treatment guidelines, timely refresher training to update healthcare workers specifically on new targets and guidelines, adequate supply of test kits and reagent to resource accredited facilities for testing and monitoring. Moreover, awareness creation within households, workplaces and business entities were recommended as mechanisms to improve HIV knowledge and reduce stigmatizing attitudes. Again, psychosocial supports remain an important factor in ensuring continuity of care.

Conclusion: This study has pointed out important factors to strengthen health systems structures and schemes in the prevention and continuity of care for PLHIV in effort towards realizing the UNAIDS HIV related goals.

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Correlation Between HIV Positive Status and School Attendance Among Children /Adolescents Between 8-20 Years Living in Kampala City - A Case Study at Aids Information Centre

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Background: HIV has for a long time been a global challenge for both the infected and the affected people. It is worse for children who are in school because they have to deal with stigma and discrimination propagated by their peers and teachers at school. Unfortunately, most times, these children are not well equipped to cope with the situation on their own leading to poor adherence to Antiretroviral Therapy (ART), irregular school attendance due to illnesses and need to keep clinic appointments which consequently lead to some dropping out of school. To further explore this silent but salient concern, AIDS Information

Centre (AIC) conducted a survey on 30 clients aged 8-20 years to examine if HIV positive status affects their school attendance.

Material and Methods: AIC accessed data from the Uganda Electronic Medical Records (UgEMR) and a random survey was conducted on 30 clients aged 8-20 years receiving ART. These were interviewed through phone calls and those who could not be accessed via phones were physically interviewed during their clinical appointments.

Results: All the 30 children missed school to keep clinic appointments at some point. 10 missed school at least 4 times a year to attend their clinic appointments, 3 dropped out of school because of stigma and discrimination from the teachers and fellow students, 5 dropped out of school because of self stigma, 1 non-suppressed missed school for a full term because he was in and out of hospital, 7 missed school because of depression and had no one to talk to while 4 missed school because of abrupt changes in treatment supporters.

Conclusion: Based on the findings above, being HIV positive affects school consistent attendance to a large extent. Therefore, a lot still needs to be done in sensitizing all stakeholders in schools, especially students and teachers on how to support HIV positive students other than stigmatizing and discriminating them. There is a need to advocate for compulsory placements of trained counselors in schools to listen to the affected children and accord them the necessary psychosocial, referral and medical support.

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The First Pilot of HIV Self-Testing for Informal Workers in Mozambique Did Not Reach the Male HIV Blind Spot

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Background: In 2017, the United Nations AIDS Agency termed “HIV blind spots” as males who acquired HIV but do not know their serologic status, do not seek care and are not targeted by HIV

reduction strategies. To reduce the blind spot in Mozambique, the Ministry of Health piloted HIV self-testing (HIVST) of males who were informal workers, expected most likely to be HIV blind spots. These workers are in informal markets or seeking clients in bus stops, and typically unwilling to seek health facilities for fear of losing wages.

Material and Methods: HIVST pilot was in Southern Mozambique, in mid-2021, in MOH-selected sites. Potential kit recipients were located by trained lay counselors in bus stops and informal markets. Recipients were explained advantages of knowing HIV status, offered HIVST kits, and instructed on how/where to use the kit, and what to do after testing. “Primary” recipients were those receiving test kits for themselves, and “secondary” were those receiving test kits from a person (e.g., an index case) who wanted them to self-test. Two models were used: i) community-based, aimed at men in “hot spots”, and partners of index cases; ii) workplace-based, for informal workers. Descriptive statistics focused patterns of distributed kits and recipient features.

Results: 17,726 HIVST kits were distributed, with 15,766 (89%) in workplace models and 1,960 (11%) in community-based models - here, 86% (1,693) were in “hot spots”, and 267 were index case contacts. 12,854 kits went to primary recipients (72.5%) and 4,872 to secondary recipients. Males received 11,778 kits (66.4%); 11,008 recipients (62%) consented follow-up, with 9,951 (90%) successfully reached; of these, 9,174 (92%) confirmed using the HIVST kit, with 166 (1.4%) testing positive for HIV - 100 (60.2%) were confirmed by conventional testing, 34 already knew their serostatus, 21 did not return for confirmation, and 11 were negative in conventional testing.

Conclusion: HIVST had low yield (10 times lower than prevalence data) suggesting inability to reach male blind spots. Recipients appeared concerned with privacy, with only half reached in follow-up. One third of kits went for sex contacts. The confirmation requirement was not justified by the few false positives.

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Improving Access to Opioid Agonist Therapy Among Detainees in Tanzania: The Role of Harm Reduction Sensitization Sessions

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Background: People who use drugs (PWUD) while in custody? experience additional stigma and discrimination. With their access to legal assistance and medical? services restricted, PWUD experience problems accessing their daily dose of methadone. More than 120 opioid agonist therapy (OAT) clients have been detained by police for various offenses since the OAT clinics opened in Mbeya (2017) and Songwe (2021). OAT clinics supported by HJFMRI under PEPFAR in Mbeya and Songwe, regions in Tanzania's Southern Highlands

Material and Methods: Between 2021 and 2022, 224 law enforcement officers were sensitized on the harm reduction program for PWUD, through interactive meetings conducted over three days. Participants included representatives of various law enforcement agencies, such the Tanzanian Police, prisons, the judiciary, the Regional Commissioner Office, Regional and District Security Committees, and Local Government Authorities. The meetings discussed issues related to the nature of drug use and drug use disorders, prevention, treatment, care, and rehabilitation services, harm reduction program for PWUD as well as treatment of persons with drug use disorders in contact with the criminal justice system.

Results: After training, participants reported changes in their perspective towards services and increased support for OAT clients in custody to access their daily medication. Law enforcement officers are now more confident in supporting detained people who receive methadone using science-based evidence, rather than on ideology or personal views. Now that law enforcement personnel and OAT clinic providers work well together, police and prison vehicles daily accompany about 120 clients in custody to clinics where they receive their daily dose of methadone.

Conclusion: It's critical for implementing partners to continue funding these sensitization trainings before starting OAT program/clinics to reach more law enforcement personnel and alter their perception on drug users, to ensure that opioid drug users receive the best care possible.

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Family Rejection of Sexuality – Sexual and Gender Anonymity Among Sexual Minority Men in Slum Communities.

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The decision to disclose one's gender identity, sexual orientation, or sexual behavior for Sexual Minority Men (SMM) can be difficult. The choice of whom to consider when such a decision is to be taken can have several implications, especially when considering how the family might react.

We engaged 12 SMM from slum communities in Accra and Kumasi, Ghana in in-depth interviews. We found that SMM decisions to disclose their identities/orientation/behavior were primarily driven by two factors. First, SMM feared facing harm from their families as a consequence of disclosing their gender identity, and sexual

orientations/behavior. The second was driven by the close ties of SMM families to religious institutions in their communities and the role of these spiritual organizations in teaching against LGBTQ+ activities in the country.

Together these findings contributed to an understanding of why SMM in Ghanaian slum communities chose to keep anonymous their gender identity, and sexual orientation/behavior. While no single intervention was enough to curb the challenges associated with coming out, participants in the study agreed the provision of a social support intervention that provided opportunities to educate and inform their families and community on LGBTQ+ activities could help them assimilate comfortably in their communities.

733

Abstract 733 was withdrawn.

734

Tempo de Sobrevivência em Pacientes Co-Infectados Pelo Vírus de Imunodeficiência Humana e Tuberculose nas Eras Pré e Pós Actualização do Regime do Tratamento Antirretroviral e Factores Prognósticos Associados a Era Actual, Hospital Geral de Marrere-Nampula, de 2014 a 2020

Selege F¹

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Introdução: O tratamento antirretroviral é essencial na redução da morbimortalidade e na melhoria de qualidade de vida em pacientes seropositivos, especialmente nos co-infectados por tuberculose, pelo facto de nestes, as chances de

mortalidade serem altas (60 mortes diárias) a nível nacional. Mas pelas suas reações adversas e pela capacidade mutacional do vírus, sua optimização é fundamental e constitui desafio desde sua descoberta. Diante disso, este, foi recentemente actualizado substituindo-se do regime do tratamento antirretroviral, Efavirenz pelo Dolutegravir. Assim, o estudo visa analisar o impacto da actualização terapêutica na sobrevida aos 6 meses de tratamento da tuberculose pulmonar sensível no regime de casos novos dos pacientes co-infectados pelo Vírus de Imunodeficiência Humana e tuberculose atendidos no Hospital Geral de Marrere, no período de 01/01/2014 a 31/12/2020.

Métodos: Trata-se de estudo de natureza epidemiológica, observacional analítico do tipo coorte retrospectiva com abordagem quantitativa, envolvendo pacientes adultos co-infectados, selecionados pela técnica de amostragem probabilística mista (estratificada proporcional e aleatória). Utilizou-se o método de Kaplan-Meier, modelo de riscos proporcionais de Cox e as estimativas das razões de risco com seus respectivos intervalos de confiança de 95 (IC 95%).

Resultados: Dos 272 pacientes estudados, 73,9% faziam regime baseado ao Efavirenz e 26,1% ao Dolutegravir. Os primeiros tiveram sobrevida de 20 semanas e taxa de mortalidade de 37,7/100 pacientes-semester e os últimos de 23 semanas e taxa de 18,0/100. Mostram-se significativamente associados à mortalidade e baixa sobrevida nos expostos ao Dolutegravir: não ser escolarizado (HR=2.5; IC 95% 1.07–2,2); sexo masculino (HR=4.6; IC 95% 2.1–9,2); idade entre 40–60 (HR=3.1; IC 95% 1.2–1.8) e > 60 anos (HR=5; IC95% 1.04–3,5); carga viral >100.000cópias/ml (HR=7,7; IC 95% 2,04–2,51); ter comorbidade (HR=7.5; IC 95% 2.04–3.01); não exposição ao tratamento preventivo com Cotrimoxazol (HR=6,3; IC 95% 1,02–8,02), desnutrição (HR = 3,3; IC 95% 1,202 – 7,01).

Conclusão: A sobrevivência dos pacientes co-infectados aumenta e a taxa de mortalidade reduz consideravelmente de forma heterogênea com a substituição do Efavirenz pelo Dolutegravir no regime do tratamento antirretroviral.

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Acervo Bibliográfico Sobre o HIV Disponível na Biblioteca Nacional de Saúde de Moçambique

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Introdução: A Biblioteca Nacional de Saúde (BNS) é uma Repartição pertencente ao Departamento de Comunicação Técnico-científica em Saúde (DCTCS) do Instituto Nacional de Saúde (INS), criada pela Resolução no17/2018 de 1 de Junho, tendo como objectivo desenvolver programas de actividades de tratamento documental, promoção de acesso livre da informação em saúde e prestação de serviços ao corpo discente, docente, pesquisadores, pessoal administrativo e funcionários do Ministério da Saúde, INS e ao público em geral, através de informações contidas em material bibliográfico pertencente ao acervo da Biblioteca ou de outras Instituições congêneres. Dentre os acervos existentes na BNS, destaca-se a colecção Moçambicana de toda a documentação sobre saúde produzida em Moçambique. O HIV tem sido um tema frequente e de mais procura pelos utentes da biblioteca. Objectivo: Neste contexto, o presente trabalho pretende descrever a evolução do acervo da colecção moçambicana em relação a documentos sobre HIV disponíveis na BNS.

Métodos: Trata-se de um estudo exploratório descritivo com abordagem qualitativa. Assim, fez-se uma revisão documental da colecção moçambicana (artigos, teses, livros, relatórios) existentes na BNS.

Resultados: A colecção moçambicana é composta por 3400 títulos, onde 2135 títulos são documentos bibliográficos e 1265 documentos orgânicos produzidos sobre Moçambique por autores moçambicanos e internacionais, dos quais 372 acervos referentes ao HIV. Nos acervos sobre o HIV encontramos 267 títulos em formato físico e 105 em formato digital. 93 abordam sobre aderência e tratamento HIV, 160 Prevenção, e 119 políticas sobre HIV.

Conclusão: No desenvolvimento da pesquisa ficou notório a falta de actualização dos acervos sobre HIV disponíveis na BNS, comparativamente ao que se produz. Por isso, esperamos que os decisores políticos e os investigadores que produzem informações sobre HIV em Moçambique possam efetuar o depósito na BNS, convista a promover o acesso livre da produção e dar a visibilidade de toda produção técnica-científica a nível nacional e mundial.

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Succes Immuno-Virologique Chez les Enfants de Moins de 15 Ans Infectes par le VIH-1 Suivis en Routine Dans le Contexte de Pandemie du COVID-19 sur 5 Sites de Prise en Charge du Benin

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Contexte : La thérapie antirétrovirale a permis de réduire de 52% l'incidence du VIH chez les enfants et d'accroître l'accès au traitement. Cependant ces traitements ne sont pas efficaces chez tous les patients eu égard à certains facteurs. Le Bénin a démarré la thérapie antirétrovirale pédiatrique en 2005 et depuis lors peu d'études ont été initiées pour apprécier la situation des enfants vivants avec le VIH sous traitement.

Matériel et méthodes : Une étude prospective a été menée pour apprécier les caractéristiques immuno- virologiques chez 305 enfants sous traitement antirétroviral depuis au moins six mois sur les 5 sites à file active les plus élevées des départements de l'Atlantique et du Littoral entre Novembre 2020 et Novembre 2021. Le comptage des LTCD4 a été effectué avec le cytomètre de flux CyFlow counter II des laboratoires Partec, et les charges virales par la plateforme Cobas Taqman des laboratoires Roche. Les données sociodémographiques (âge, sexe) et l'historique de traitement ont été obtenues sur la base des dossiers patients.

Résultats : Les enfants sont âgés de moins de 15 ans. La moyenne d'âge est de 110 [IQR 8-178] mois avec une prédominance de fillette (52,8%). La moyenne des LTCD4 est de 891 [8-4099] cellules/ μ l de sang. Au début de l'étude, 27,52% (82/298) des enfants sont en échec ($CV \geq 3 \log 10$). Pour des raisons de difficultés d'accès au site de prise en charge liées au COVID-19, environ 9,83% (30/305) des enfants n'ont pas participé à la suite de l'étude. La charge virale de contrôle réalisée trois mois après la première montre que 20,73% (17/82) des enfants en échec au départ sont revenus indétectables. Le taux de suppression global au départ de 73,11% (223/305) est passé à 79,63% (219/275) grâce aux séances d'éducation thérapeutique, au soutien psychologique, à la disponibilité du personnel soignant. Au terme des deux phases, 13,81% (38/275) des enfants sont en échec, et parmi eux 13,15% (5/38) sont sous inhibiteurs d'intégrase.

Conclusion: Cette étude montre que malgré la barrière génétique élevée des inhibiteurs de l'intégrase, l'obtention du succès virologique chez les enfants passent par le renforcement de l'observance chez la personne chargée de l'administration du traitement.

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Comment Soutenir les Acteurs Communautaires Pour la Réalisation De Cartographie Locale et L'estimation de la Taille des Populations Clés ?

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Contexte : Enda Santé et ses partenaires ont proposé de mettre en œuvre un projet de renforcement des capacités des acteurs de la lutte contre le VIH en Afrique de l'Ouest. Le projet s'adresse aux acteurs communautaires, locaux et nationaux afin que ces derniers puissent s'approprier et participer à la mise à l'échelle d'activités adaptées aux réalités et aux besoins des différentes populations clés.

Matériel et Méthode: L'objectif est de renforcer la localisation et la qualité des interventions afin de contribuer à l'évaluation de l'efficacité des services de la cascade de soins VIH pour les populations clés en Côte d'Ivoire, en Guinée Bissau, en Guinée et au Sénégal à travers : 1) Des renforcements de compétences des acteurs pays en démultipliant ces formations et en les associant à un appui direct à la mise en œuvre de cartographies localisées ; 2) Des soutiens techniques et financiers aux acteurs formés pour la réalisation de cartographie et estimation de la taille des populations clés au niveau locale.

Résultats : De 2019 à 2021 : Deux ateliers régionaux de formation des formateurs référents de haut niveau ont été organisés; Plusieurs sessions de mentorat personnalisé ont été organisé, notamment l'accompagnement et le coaching des formateurs pays pour la démultiplication des connaissances auprès des acteurs de lutte contre le VIH. 5 sessions de formations des acteurs pays ont été organisées avec une participation de 120 personnes dont 45% issus des groupes de populations clés (HSH, PS et UD). Six projets de cartographie locale ont été réalisés dans les 4 pays par les acteurs communautaires formés et financés par le projet ReCCAP. 8 sessions de Webinaires : sur des thématiques liées aux VIH et à la COVID19 ont été déjà organisés.

Conclusion : Le projet a pu démontrer les capacités des acteurs communautaires locaux y compris les populations clés, de réaliser par eux même des activités de recherches (cartographie et estimation de la taille des populations clés) sans faire recours à des experts nationaux ou internationaux. Il a permis d'avoir désormais des pools d'acteurs spécialistes en cartographie et estimation de la taille.

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Bringing Services to Scale for Adolescent Girls, Young Women, and Key Population: Community HIV Initiatives that Maximized Access in Nigeria

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Background: 2021 HIV Mode of transmission study estimated that 91% of new HIV infections occur among adolescents, young persons, and key populations in Nigeria. Therefore, government and partners provided targeted interventions in an effort to reach Adolescent girls, young women, and key populations (AGYW and KP). However, little information exists on which strategies have been effective in reaching AGYW and KPs. This study was conducted to identify successful strategies used at community level to improve access to HIV services among AGYW and KPs.

Material and Methods: A cross-sectional study was conducted in 6 states in Nigeria (Abia, Akwa-Ibom, Kaduna, Taraba, Lagos, and Benue). Qualitative and quantitative methods were used to collect data from service providers and clients at service delivery points (SDPs). A total of 95 SDPs were visited across the states.

Results: Out of 12 strategies/ models identified in this study, AGYW majorly (66.4%) assessed HIV Testing Services (HTS) from health facilities which is the main HTS route in the country. Less AGYW accessed HTS at Youth friendly centers (10.1%) and community outreaches (11.9%) because these strategies have only been implemented on small scales in the country. While for KPs the model differed, majority of KPs (57%) received HTS from One Stop Shops/ Drop in Centers (OSS/DIC). Study showed that access to PrEP was highest at OSS/DIC with 86% of Transgender and 77.5% of MSM offered PrEP. Majority of AGYW (88.3%) get their ARVs refilled at health facilities while majority (74.5%) of the KPs assessed theirs from the OSS/DIC. Operation triple Zero (OTZ) strategy was suboptimal among AYP as only 31.3% of AGYW were enrolled on it. However, AGYW enrolled in

OTZ had significantly higher viral suppression (85.8%; $p < 0.001\%$) than those not enrolled in OTZ (73.5%).

Conclusion: Although health facilities have been effective in reaching AGYW, to increase reach, government needs to scale up HIV services through other models such as self-testing, OTZ, etc. Also, OSS/DIC has been effective for KPs but it is majorly implemented by partners which raises challenges with sustainability without partner support.

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Integrating Group Therapy Talks to Provide First-Line Support for Depression Among Vulnerable AGYW on the DREAMS Intervention in Zambia

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Background: Adolescent girls and young women in sub-Saharan Africa suffer from common mental disorders such as depression due to poverty and HIV infections. The COVID-19 pandemic has further compounded the risk. WHO estimates that 1 in every 7 adolescents between 10 to 19 years is affected but unrecognized and untreated, resulting in more adverse future effects, including increased vulnerability to HIV acquisition. The Centre for Infectious Disease and Research in Zambia, through the USAID controlling HIV Epidemic for Key and Underserved Populations, is implementing the DREAMS intervention targeting adolescent girls and young women between 10-24 years. Through its partnership with Strong Minds Zambia, DREAMS is utilising a simple, evidence-based, and cost-efficient model to provide first-line support for depression among DREAMS beneficiaries.

Material and Methods: We utilized a model that uses group therapy talk based on group interpersonal psychotherapy (IPT-G). The IPT-G model recruits female lay community workers and trains them as Mental Health Facilitators (MHFs) with ongoing clinical supervision by mental health

experts. Women and girls who demonstrate symptoms of moderate to severe depression by scoring between 10-19 on the Patient Health Questionnaire-9 (PHQ-9) are invited to participate in group therapy talks with 10-12 others. The groups meet for 90 minutes each week for 8 weeks. Under the guidance of the trained MHFs, group members identify triggers for their depression, share strategies to overcome these triggers and build long-term resilience.

Results: A total of 3583 AGYWs were enrolled in group talk therapy with an average PHQ-9 score of 14, representing the upper end of the score for moderate depression at the pre-group session. At the end of the 8th session of group talk therapy, 88% of the AGYW who attended 5 or more sessions scored between 0-4 on the PHQ-9 representing none or minimal depression and 12% scored between 5-9, classified as mild depression. These results show that no AGYW concluded their IPT-G with a PHQ-9 score >9, indicating that none of the adolescents completed the group sessions with moderate depression.

Conclusion: The IPT-G model is effective in providing first line support for depression among adolescent girls and young women in Zambia.

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Lessons Learnt From a Pilot Phase of HPV DNA Screening for Cervical Cancer in Chitungwiza District, Zimbabwe

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Background: Cervical cancer is a major cause of concern in high HIV burden countries like Zimbabwe. Women living with HIV (WLHIV) have up to four times increased risk of developing cervical cancer, due to the presence of persistent human papilloma virus (HPV) that causes 95% of all cervical cancer cases.

Material and Methods: OPHID consortium supports Ministry of Health (MoHCC) mandates through provision of HIV care and treatment services across 15 districts in Zimbabwe including Chitungwiza. In line with WHO's guidance on screen, triage, and treat, MoHCC adopted HPV DNA self-testing necessitating the piloting of HPV DNA self-testing in Chitungwiza in June 2022, to screen for HPV in WLHIV. The aim of the pilot phase was to learn on successes and challenges on HPV DNA self-testing as well as decongest the facilities with plans to scale up to other TASQC-supported districts. A retrospective analysis of programme data was done for the period July-December 2022. All samples received were self-administered through HPV-DNA kits were distributed to WLHIV on ART aged 25-49 years through lay community cadres called community outreach agents (COAs). Women who were having their menstruation, had a hysterectomy, three months post-delivery were ineligible. We describe the uptake, screening and treatment rates for clients using HPV DNA self-testing using routine programme data from July-December 2022.

Results: Of the 3679 samples collected, 72% (2695) had results received from the laboratory of whom 37.6% (1007) were positive 51% (642) had VIAC Triage done. The VIAC positivity rate was 6.8%, and 23 (52%) were linked to treatment. The 1683 women who were HPV-DNA negative is potential facility based VIA screening that has been averted due to HPV -DNA self-screening, hence lowering the burden on the healthcare worker and decongesting the facility.

Conclusion: The pilot of HPV DNA self-testing illustrates the shift of cervical cancer screening burden from the healthcare worker to the client and decongesting of facilities. This is significant as TASQC-supported facilities are affected by staff attrition and such interventions need to be upscaled to the rest of the districts. Future studies can look at acceptability and ease of use of HPV DNA self-testing kit by WLHIV.

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Eliminating Inequalities Through Integration: Results of HIV and Cervical Cancer Services Integration in South-East Nigeria

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Background: Despite declining HIV-associated deaths among people living with HIV (PLHIV), non-HIV-related cancer deaths are surging. Over half of the PLHIVs in Nigeria are women and girls at higher risk of Human Papilloma Virus (HPV) co-infection and subsequent development of cervical cancer and yet there are no systemic case finding programs among PLHIVs in the country. Studies in Nigeria reported a cervical cancer prevalence ranging from 3.0 % to 6.3% for women living with HIV. For a swift decline in cervical cancer incidence and mortality, it is advised that efficient cervical cancer screening be increased in sub-Saharan Africa. This study examined the cervical cancer prevalence and screening outcomes among females living with HIV (FLHIV) from an integrated service delivery model in antiretroviral treatment (ART) facilities in Enugu, south-eastern Nigeria.

Material and Methods: A retrospective cross-sectional review of HIV and cervical cancer screening services in 18 ART sites in Enugu State Nigeria, between April and September 2022 was done. Descriptive statistics were used to calculate the prevalence rate and case detection rate for cervical cancer lesions among FLHIV using Visual Inspection with Acetic Acid (VIA) screening test.

Results: A total of 2441 people were screened, with 492 (20.2%) aged 20-29 years, 32.9% aged 30-39 years, 35.3% aged 40-49 years, and 11.6% aged 50 and above. A total of 89 persons (3.6%) out of those screened had positive VIA results: 3.5% aged 20-29, 3.4% aged 30-39, 4.1% aged 40-49, and 3.5% aged 50 and above. Across all age groups, 7.9% of those diagnosed with VIA had high-grade lesions.

Prevalence rates increased with age, reaching 5.9% in the 20-29 age group, 7.4% in the 30-39 age group, 8.6% in the 40-49 age group, and 10.0% in the 50+ age group.

Conclusion: The prevalence of pre-cancerous and cervical cancer lesions is high in females living with HIV. More research is needed to identify and address factors associated with the high prevalence and low cervical cancer screening for HIV-positive women and girls in south-east Nigeria.

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Using Case Management Reporting to Monitor and Improve Sexual Violence Care in Mozambique

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Background: Monitoring sexual violence cases that seek services is an important step to ensure effective service delivery and program improvement. The Ministry of Health (MoH) Gender-Based Violence (GBV) program in Mozambique has been monitoring sexual violence (SV) case management indicators since 2007. Health facilities submit primary reports to the provinces which are compiled in the District Health Information Software 2 (DHIS2).

Material and Methods: We reviewed the MoH DHIS2 data from 628 health facilities (HF) from January 2017 to December 2021. Key indicators reviewed were number of SV cases, HIV test at first visit, initiation of HIV post-exposure prophylaxis (PEP) within 72 hours and sexually transmitted infection (STI) prophylaxis administration.

Results: From 2017 to 2021, 21,990 SV cases were reported (21,361; 97.1% females). Provinces with the highest number of SV cases reported were Zambézia (21%), Maputo City (15%) and Nampula

(11%). Provinces with the lowest number of SV cases reported were Niassa (3%), Inhambane (4%), and Tete (5%). Sexual violence was most frequent among young girls, with 56% (12,014) of all female SV cases reported in the 10-19 years age band. Among the 19,315 SV survivors who tested negative for HIV, 17,228 (89%) arrived at the health facility within the first 72 hours after the incident of violence. Of those who arrived within the first 72 hours, 11,265 (65%) started PEP. No data are available for PEP completion. STI prophylaxis was administered to 16,629 (76%) SV survivors.

Conclusion: Sexual violence represents a large burden for Mozambique and is a barrier to the control of the HIV epidemic. The majority of SV survivors are adolescent girls and young women. Low initiation of PEP and STI prophylaxis are challenges to effectively addressing HIV infections linked to violence. The MoH GBV program will continue to monitor sexual violence cases and has recently developed and disseminated new patient-centered, demand creation guidelines and Monitoring and Evaluation tools to better track post-violence care services including GBV PEP completion and HIV outcomes.

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Addressing Non-disclosure as the Major Cause of Non-suppression Among Women Living With HIV

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Background: AIDS Information Centre supported Antiretroviral (ART) service delivery during the COVID 19 outbreak through provision of multi-month drug refills and community drug refill initiatives for stable clients to avoid treatment interruptions. However, despite these efforts, increasing non-suppression rates among women living with HIV (WLHIV) were registered from 18(2.5%) of 719 women between October-December 2020 to 45(6.2%) of 726 women between January–March 2021.

All 45 clients received intensive adherence counselling sessions which revealed stigma and discrimination were not the major underlying causes of non-adherence but rather non-disclosure. This barrier reportedly prevented clients to take medication correctly at home during the lock downs. To address this, family support group meetings (SGM) and home visits were conducted for the 45 non-suppressed women.

Material and Methods: Between January-June 2021, 35 non-suppressed women attended the SGM and 10 consented for home visits. Through these engagements discussions were held about the advantages of disclosure, ways to disclose to their immediate families, as well as correct adherence to medications. All received intensive adherence counselling for 3 months after which repeat viral load (VL) tests were done.

Results: 25(71%) of 35 women who attended the SGM had not disclosed to their partners or families. Of the 10 home visits conducted, 6(60%) women had not disclosed to their partners or families making it difficult to take medication correctly because their family members were always around. By the end of the third intensive adherence counselling sessions, 24(68.6%) women had disclosed to their partners and families which resulted in 2(10%) of 20 male partners testing HIV positive. They were all linked to care. 43(96%) of the 45 clients had suppressed repeat VL results after three months of the intervention. The 2 with repeat non-suppressed VL results were clients who had not yet disclosed to their husbands. All these women were suppressed at one year follow up (January-June 2022), with one switch to second line. All had disclosed to their families.

Conclusion: Disclosure must be assessed for stable clients who report good adherence as well as non-suppressed clients and interventions made to support disclosure for viral suppression.

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Factors Influencing HIV Incidence Among Adolescent Girls and Young Women: Scope Review

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Background: Strategies to reduce HIV incidents have been successfully implemented in the last three decades. Adolescent Girls and Young Women (AGYM) remain the most vulnerable population in Sub-Saharan Africa. Several studies have been conducted by scholars to investigate the factors influencing HIV incidents among AGYM that contribute to the high HIV incident rate among AGYM. Therefore, this study seeks to explore and describe factors influencing HIV incidents among AGYM using a scope review.

Material and Methods: Scope review is the method that was adopted for this study. The framework created by Arksey and O'Malley was used, and the following five main steps were carried out: (a) Identifying the research question, (b) Identifying relevant literature, (c) study selection, (d) charting of data and collection and lastly (e) summarizing and reporting of results. The study used pertinent literature found in PubMed, Google Scholar, and JSRO, from 2020 to 2022.

Results: Results outlined by different studies are categorized into three main themes. (a) Personal: Evidence shows that AGYM often contracts HIV at high rates due to age-disparate sexual relationships with older men for different personal reasons. (b) Social: studies highlight poverty, financial gain, fatherlessness, and unemployment as the main factors that influence AGYM to engage in sexual relationships with older men. (c) Structural: more studies have highlighted the structural factors where young women fall prey of HIV-exposed men in high positions mainly in an occupational settings, academic setting, churches, and traditional settings.

Conclusion: This study reviewed a number of predisposing factors influencing HIV incidence

among AGYM. There is a need for Implementation of policies and programs that identify behavioral patterns of vulnerability that reflect more in social and structural factors that will aid to identify AGYM who are most at risk of contracting HIV.

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Cervical Cancer and Screening: Knowledge, Awareness, and Attitude among HIV-Infected Women in Nigeria

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Background: Nigeria has a population of 56.2 million women ages 15 and older who are at risk of developing cervical cancer. Current estimates indicate that every year 12075 women are diagnosed with cervical cancer and 7968 die from the disease. Cervical cancer ranks as the second most frequent cancer among women in Nigeria and the second most frequent cancer among women between 15 and 44 years of age. Since the onset of the HIV epidemic, the United States Centers for Disease Control and Prevention (CDC) have classified cervical cancer, Kaposi sarcoma, and non-Hodgkin's lymphoma as AIDS-defining cancers because of their close association with HIV infection. However, unlike the latter two types of cancer, the risk of cervical cancer is only marginally elevated at best among HIV-infected women. This study assessed the knowledge and attitudes of HIV-infected women accessing antiretroviral therapy (ART) about cervical cancer and screening.

Material and Methods: A facility-based cross-sectional survey through interview was conducted from November 2022 to January 2023 among HIV-infected women between 21 and 49 years of age receiving ART at the Federal Medical Centre Keffi. Basic descriptive statistics were performed using SPSS.

Results: A total of 362 HIV-infected women participated in this study. The average age was 35.9 years. Few women 37.8% had heard about cervical cancer, and the vast majority (74.9%) of respondents had no knowledge of cervical cancer

risk factors, and 68.2% did not know any symptoms of cervical cancer. Only 35.1% had undergone cervical cancer screening, and only 17.4% were willing to be screened. The main reasons for not wanting to be screened are the husband's not consenting (42.8%) and fear (38.1%).

Conclusion: This study revealed that knowledge about cervical cancer was very poor, low level of awareness, and poor attitude was shown toward cervical cancer screening. Given that the HIV-positive population is at increased risk of cervical cancer, health awareness and education programs should be strengthened at both the community and health facility levels, with an emphasis on the causes, risk factors, and treatment options for cervical cancer.

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Viral Load Non-suppression as a Signal of Challenged Women Living With HIV/AIDS

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Background: HIV infection is globally observed as being higher among women than men and the case is not any different at AIDS information center (AIC)-Uganda and Uganda as a whole; calling for close monitoring, inclusion and surveys. There is continuous interaction between people living with HIV (PLHIV) and AIC health-workers and this relationship has led to the discovery of challenges that affect the general adherence of clients on Anti-Retroviral Therapy (ART) especially women. One of the biggest signals of challenges among living with HIV at AIC is viral load non-suppression among clients who have spent over 3 years on ART; justifying the need to carry out a root-cause analysis on these individuals.

Material and Methods: A 3 months' study on 10 non-suppressed women who were contributing to a suppression rate below the targeted 95%; through home-visits involving 3 consecutive Intensive Adherence Counseling (IAC) sessions for each client; guided by questions on IAC forms was conducted. The in-depth discussions yielded

unbelievable reasons behind the clients' non-suppression statuses as analysed in excel.

Results: 80% of the non-suppressed clients stated that COVID-19 affected their financial and marital statuses; resulting into no incomes and spouse abandonment and single parent-hood; feeding on a meal per day with expectations of drug adherence. Taking drugs the right way, at the right time and right frequency became a myth. One client sadly said. "I cannot leave my child to go hungry; I sacrifice the food for him even if I don't have to swallow tablets," while another admitted to having considered suicide; her mental health was on the verge of a break-down. The women admitted that community/government support was not enough to sustain them for a lifetime with their lack of capital to start up small scale businesses. 20% of the clients were non-suppressed due to non-disclosure, stigma/discrimination especially the fear of community isolation.

Conclusion: Many women on ART experience challenges beyond just the HIV reality. It's crucial that national/international organizations review funding criteria and make provisions for sustainable support towards disadvantaged women (who are the majority) living with HIV; giving positive living a better meaning.

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Acceptability and Fidelity of a Friendship Bench Mental Health Intervention for Perinatal Women Living With HIV and Depression in Malawi

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Background: Perinatal depression (PND) is common among women living with HIV and adversely affects the health of women, their infants, and families. PND may be a barrier to successful engagement in HIV care, but there is no standardized counseling support in public facilities in Malawi. The aim of this study is to assess the acceptability and fidelity of an enhanced Friendship Bench (FB) counseling intervention for the treatment of PND and engagement in HIV care.

Material and Methods: We enrolled women in a pilot randomized trial of the FB intervention versus enhanced usual care. Women were followed through 6 months postpartum when we assessed acceptability and fidelity using a mixed methods design. Quantitative data sources included a fidelity checklist and a structured questionnaire. Qualitative data came from semi-structured interviews with study participants. Quantitative analyses assessed whether counseling was done following FB protocol on each item of the checklist. Qualitative data were analyzed using content analysis to understand the overall satisfaction with FB, whether or not it was beneficial and if it helped the participants remain in HIV care.

Results: 100% of the participants reported overall satisfaction with FB counseling and 90% said the intervention was beneficial to their overall health.

The participants (80%) felt that the intervention was useful and it helped them remain engaged in HIV care. All the participants said they would recommend FB to a friend. Counselors demonstrated high (83%) fidelity to the FB intervention. The clarity of the intervention and commitment of the counselors and the periodic supervision largely explain the high level of fidelity obtained.

Conclusion: FB counseling was demonstrated to be acceptable by women living with HIV and PND. Further. This study shows that trained and supervised counselors can deliver the intervention as per protocol. The intervention was well-received by the participants and could be a useful way to improve their overall mental and physical health.

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Addressing Early Retention Among Women Living With HIV – Insights From AIDS Information Centre (AIC) Kampala, Uganda

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Background: Women living with HIV (WLHIV) are encouraged to adhere to their HIV treatment (ART) in order to attain suppressed viral loads for their health and prevention of HIV transmission. 131 women were initiated on ART between January and December 2021 at AIC Kampala. A review of retention data at 6 months revealed that two women died due to stopping ART and 18 were lost. Retention data at 1 year showed an additional 20 lost totalling 40(68%) women. This indicated poor early retention in care. In January 2022, a root cause analysis on poor early retention of women identified: Poor quality of care by health workers at ART initiation, fear of disclosure to sexual partners and family, initial ART side effects, accessibility of ARVs as emergency refills from other facilities, work-related issues (refused to go for hospital visits), and pill burden.

Material and Methods: In January 2022, using a baseline retention value of 68%, an improvement plan was drawn outlining changes to be implemented including: engaging treatment supporters to understand their support roles and responsibilities, routine adherence counselling for WLHIV with missed appointments, intensive adherence counselling for non-suppressed WLHIV and home visits to trace lost women. Additionally, WLHIV were invited for support group meetings where they received information on positive living and the assisted sexual partner notification model (APN). The improvement plan was evaluated at the end of December 2022.

Results: Between January and December 2022, 20(50%) women returned to care through phone call follow-up, 5(12.5%) through the help of treatment supporters, 3(7.5%) through home visits, and 4(10%) by the help of their sexual partners contacted through the APN model. 8(20%) had not returned although still under follow up. It was found that newly identified HIV positive partners listed the lost WLHIV as their treatment supporters which enabled them to be traced, and WLHIV still lost to care reportedly experienced severe stigma in their homes that led them to relocate without informing health workers for support.

Conclusion: Alongside the test and treat model, involvement of treatment supporters for newly diagnosed WLHIV at ART initiation supports retention in care.

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Dissociation Between the High Proportion of HIV Infection and Amenable Maternal Death at the Central Hospital of Beira, Mozambique: A Cross-Sectional Study 2018-2020

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Background: HIV infection and maternal death remain among the main public health issues in

Mozambique. It is important to analyze the association between maternal death and HIV infection, to inform health programs, and quality of care improvement at reference hospital context for the treatment of both conditions.

Material and Methods: Secondary analysis of data extracted from paper based maternal death confidential inquiries registries at the Central Hospital of Beira. This quantitative analytical observational cross-sectional study, covers the period between 2018 and 2022. Sociodemographic, obstetric characteristics, amenability of maternal death, HIV infection status are described by relative and absolute frequencies. Binary logistic regression using forward Wald conditional adjustment estimates the association (Odds Ratio [OR], 95% Confidence Interval [CI]) between HIV infection and amenability of maternal death, adjusting demographics and clinical characteristics.

Results: A total of 220 cases of maternal death were analyzed. Women up to 18 years of age accounted for 3% of the cases, and the other age groups had frequencies between 20-42%. Most women (89%) were domestic, 21% were primiparous, 56% had a cesarean or instrumental delivery and 30% were in the puerperium. Deaths audited as amenable were 73% of the cases, of these 38% HIV positive, 46% HIV seropositive among unamenable deaths. Being HIV positive decrease likelihood of amenable maternal death by 28% (OR 0.72, 95%CI:0.24,2.19, p=0.56), although this association is not different from null. Having complicated delivery is more likely, 2.7 times (95%CI=1.04-7.12, p=0.041), the death being amenable, and underlying direct obstetric death causes implied 7.3 (95%CI= 1.6-33.2, p=0.01) times higher likelihood of amenable maternal death.

Conclusion: Overall records show high proportion of HIV infection among maternal deaths, including among amenable deaths, in a context of high frequency of amenable maternal deaths, however, HIV infection dissociates from the amenability of maternal death. Obstetric factors were significantly associated with maternal death at the referral hospital, implying the need to strengthen the entire quality obstetric care system, while prioritize HIV care for pregnant women in general.

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Men's Lives Outside Their Homes and Intimate Partner Violence, Mwanza-Tanzania

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Background: Intimate Partner Violence (IPV) has several health consequences such as mental health, injury and a driving force for HIV. Engaging men is important for addressing IPV especially in low-income contexts. Understanding men's lives and interactions outside of their homes and how it influences their intimate relationships will strengthen interventions that combat violence against women. Objectives: We explored different activities which men do away from their homes. We examined their social interactions and networks and how these influence their relationships with their female partners, experiencing IPV.

Material and Methods: We conducted in-depth interviews with 30 purposively sampled men residing in Mwanza. The sampling took into account the diversity of their demographics. Subsequently 16 of the men participated in photo voice, and were re-interviewed after taking pictures about their lives. Participants captioned their photos and ranked them according to what was important to them. We analyzed the interview transcripts and photos inductively.

Results: The analysis identified five main categories of activities which men do when away from their homes: (i) income-generating activities, (ii) recreational and social activities, (iii) worshipping or religious activities, (iv) meeting parents and other relatives, (v) and establishing or maintaining extra marital relationships. With the exception of the last activities there was evidence that they could lead to a reduction or increase of intimate partner violence, depending on the main pathways. Through four main pathways: (i) time spent with family, (ii) use of economic resources, (iii) the application of social and religious normative beliefs, and (iv) proven or suspected infidelity, these

activities and social interactions either led to different forms of intimate partner violence or improved relationships.

Conclusion: Insights from men's lives outside of their homes and socioeconomic interactions should inform the design of interventions to engage men. Learning from the pathways connecting the activities and social interactions of the men should be core to such interventions.

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Stigma Reduction Among Women with HIV in Pakistan: Intervention Study

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Background: As a result of stigma and its impact on HIV treatment adherence, Pakistani women experience disproportionately high rates of HIV-related morbidity and death. Objective: To determine how the peer support workshop, in comparison to a time and attention control group, affected HIV-related stigma among Pakistani women living with HIV.

Material and Methods: HIV-positive Pakistani women were randomly assigned to the perceived social support workshop on breast cancer awareness control group. Interventions took place in HIV clinics at Islamabad, Lahore and Karachi. At baseline, after the workshop, and four follow-up visits over a year, participants self-reported HIV-related stigma and social support.

Results: Over the course of 12 months, 239 individuals (n=115; n for breast cancer education, n=97) were evaluated. Mean stigma ratings decreased after time in both groups. According to our model, there was no statistically significant difference in stigma points over time when participants were assigned to peer support workshops. Following increases in perceived social support, post-hoc analysis revealed that HIV-related stigma in this community had diminished.

Conclusion: Finding indicate that peer support workshops did not significantly reduce HIV-related stigma in our sample, our results suggest that social support may be crucial for doing so.

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Leveraging on Support Group Meetings and Home Visits to Address Non-disclosure as the Major Cause of Non-suppression Among Women Living With HIV

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Background: AIDS information center (AIC) ensures Antiretroviral (ART) service delivery through provision of multi month drug refills and community drug initiatives for stable clients to avoid ART interruptions. However despite all efforts, increasing non-suppression rates among women living with HIV are still registered despite their good appointment keeping and retention rates. Between January – March 2021, 45 of the 726 women bled for viral load (VL) were non-suppressed. The 45 clients received intensive adherence counselling sessions. These revealed that stigma and discrimination were not the major causes of non-adherence as thought by health workers but rather non-disclosure. This barrier resulted in clients taking medication at the wrong time or missing medication hence non-adherence. To address this, family support group meetings (SGM) and home visits were conducted for the non-suppressed clients.

Material and Methods: Between January-March 2021 AIC arranged SGM and home visits for non-suppressed women. 35 women were invited for SGM and 10 consented for home visits. These engagements involved health workers making discussions about the advantages of disclosure, taking medications at the right time periods, taking the right medicines and ways how these clients can disclose to their immediate families. Continuous adherence counselling was done up to 3 months where repeat VL were done.

Results: All 35 women attended the SGM where 25(71%) were identified to have not disclosed to their partners or families, 6 used to skip medication and 4 were not taking medication at the right intervals. 6 of the 10 that had consented for Home visits disclosed that they had not disclosed to people they live with making it difficult for them to take medication at the right time. By the end of the sessions, 24(20 from SGM, 4 from Home visits) promised to disclose to their immediate families and the 7 were in preparations of how to disclose to their families. Repeat viral loads at three months indicated 96% suppression rates from the 45 women where 2 later proved to have not yet disclosed to their husbands.

Conclusion: Support group meetings and Home visits have proved to be a good avenue for addressing ways to overcome non-disclosure.

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Scaling up the Use of Community Health Workers (CHWs) In Community Cervical Cancer Screening and Treatment for Women Living With HIV, a Case of TASO Gulu CoE

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Background: Cervical cancer is the leading cancer and one of the major causes of mortality among Ugandan women, contributing 40% of all cancer cases recorded in the cancer registry. In 2010, Ministry of Health launched a strategic plan for cervical cancer prevention and control. However, barriers still exist around access of cervical cancer services for women in community antiretroviral therapy (ART) differentiated service delivery (DSD) models. By December 2022, TASO Gulu had only screened 13% of the eligible women on ART against an annual target of 1731. This was attributed to focusing on facility-based screening while neglecting other client points of care at community.

TASO enlisted community Health workers (CHW) to improve cervical cancer screening for women living with HIV at select community points.

Material and Methods: Mentored Client ART Support Agents (CASAs) on basics of cancer screening. Eligible women in ART community models were mobilized through CHWs prior to their ART refill dates. The CHWs together with the health workers provided health education on cancer screening while also addressing myths and misconceptions. Further individual counselling was provided for clients that showed interest, and these were prepared for cancer screening upon consent. Erected a Yurt tent that provided an appropriate environment for services provision. Clients with pre-cancerous lesions were referred to the Health Facility for treatment and followed up by the CHWs.

Results: 86 CASAs mentored and mobilized eligible women in 86 CDDPs. By the end of September 2022, 101% of the annual target of 1731 women were screened. 1533 were screened from the community providing a contribution of 88%, of which 03 were identified with precancerous lesions and 03 were treated.

Conclusion: Involvement of CHWs aids in acceptability and uptake of cancer screening services. Creation of an appropriate cancer screening environment in the community promotes quality service provision which subsequently improves demand. Prior involvement of CHWs and partnerships with key stakeholders is important in demand creation, focused mobilization and provision of holistic cancer screen services. CHWs and key partnerships provide an opportunity for cost effective provision of cancer screening and treatment services in the community.

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Incidence of HIV Acquisition Among Women Using Family Planning Methods in South Nigeria: A Prospective Cohort Study

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Background: To reduce the rates of HIV acquisition globally, a reduction in the unmet need for family planning is necessitated. However, among women of reproductive age (WRA), new HIV acquisition still persist, highlighting a gap in preventive measures. This study aims to assess the incidence of HIV among women using family planning in South Nigeria.

Materials and Methods: We conducted a prospective cohort study among 1,378 women of reproductive age in South Nigeria who were HIV negative and using various family planning methods. Over 18 months (June 2021 to December 2022), data on socio-demographics, family planning use and risk factors was collected (0 month, 3 months, 6 months, 12 months and 18 months). At 18 months, HIV screening was conducted following the National algorithm. The data was analyzed using SPSS.

Results: Of the 1,378 respondents, median age was 26 (IQR: 19 - 35) The incidence of new HIV acquisition recorded was 4.5 per 100 person-years. New acquisitions were higher among women with multiple sex partners, unmarried and women who had STIs at month 0. 49% of women acquiring HIV were among those using oral contraceptives, 23% in those using IUCDs and 9% among those using injectables, with no new acquisition recorded among condom users. 76% of respondents believed that family planning protected against HIV while, overall STIs rose from 6% at start of the study to 19% at conclusion.

Conclusion: Our study demonstrated the incidence of new HIV acquisition among women of reproductive age, necessitating rigorous awareness campaigns on the importance of use of barrier methods even while using other contraceptive methods, and ensuring the use of pre-exposure prophylaxis among this sub- population.

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