

Press Conference abstracts - HIV Prevention for Key Populations – Wednesday, 24 October 2018

OA10.04LB

HIV Incidence among Men Who Have Sex with Men and Transgender Women in Sub-Saharan Africa: Findings from the Multi-country HPTN 075 Cohort Study

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Background: Sub-Saharan African men who have sex with men (MSM) and transgender women (TGW) are disproportionately affected by HIV infection. Several studies have shown an elevated HIV prevalence in these groups, but little is known about HIV incidence in this population. We assessed HIV incidence over 12-months in a prospective cohort of MSM and TGW in sub-Saharan Africa.

Methods: Participants enrolled at four sites in Kenya, Malawi, and South Africa were followed for one year with five study visits. All were assigned male sex at birth. Demographic, psychosocial and behavioral data were collected using a structured questionnaire. HIV testing was conducted every 3 months. Correlates of seroconversion were examined using univariate and multivariate Cox Proportional Hazard models with 95% confidence intervals (CI).

Results: Of 400 participants, 329 were HIV-uninfected at enrollment. Mean age was 23.8 years (standard deviation: 5.17) and educational level varied (34.9% low, 42.6% middle, 22.5% high). Overall, 17.6% identified as female or transgender; sexually, 60.2% identified as gay, and the rest as bisexual/other. Participant retention was 93% at 12 months. Over 301.8 person years (PY), 21 participants seroconverted [incidence rate: 6.96 per 100-PY (95% CI: 4.31, 10.64)]. Incidence rates differed substantially by site: Malawi: 1.34 (95% CI: 0.03, 7.49); Kenya: 3.75 (95% CI: 0.77, 10.95); Soweto: 8.97 (95% CI: 3.61, 18.48); Cape Town: 14.44 (95% CI: 6.92, 26.55). Seroconversion was independently associated with testing positive for a rectal STI at enrollment (hazard ratio: 2.68, 95% CI: 1.06, 6.80, p=.038).

Conclusions: MSM and TGW in sub-Saharan Africa are at alarming risk for HIV acquisition, substantially higher than the risk among other groups in the region, such as young women. The exceptionally high HIV incidence indicates an urgent need for increased access to HIV prevention interventions that take into account individual, social, and structural factors affecting sexual health in this vulnerable population.

OA10.05

Young transwomen in Brazil have high HIV risk and low prevention use

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Background: Youth, especially those from key populations, are disproportionately affected by HIV. To inform HIV prevention efforts, this study was conducted to determine differences in risk and HIV prevention between young and older transwomen in Brazil.

Methods: Data are from “Transcender” - a study of transwomen in Rio de Janeiro, Brazil, conducted from August 2015 to January 2016. Participants completed an interviewer-administered survey and received HIV testing. We examined differences in HIV infection, diagnosis, and awareness and use of prevention between young (aged 18-24 years) and older transwomen (25 and above).

Results: Of 345 transwomen enrolled, 95 (27.5%) were 18-24. Fewer young than older transwomen identified as “travesti” (29.5% vs. 41.2%, $p=0.02$). HIV prevalence was already substantially high among young transwomen (24.2%), although lower than older transwomen (47.2%, $p<0.001$). However, more HIV+ young transwomen were unaware of their HIV status (69.6% vs. 20.3%, $p<0.001$). Youth reported more condomless anal sex (72.6% vs. 60.0%, $p=0.03$) and illicit drug use (65.3% vs. 51.2%, $p=0.02$) compared to older transwomen. Fewer young than older transwomen used any health care (40.0% vs. 64.0%, $p<0.001$) or trans-specific medical care (7.0% vs. 18.0%, $p=0.02$) in the last year. Fewer young than older transwomen had ever tested for HIV (62.5% vs. 82.1%, $p<.001$), were aware of PEP (37.5% vs. 52.6%, $p=0.02$), or PrEP (26.1% vs. 42.3%, $p=0.01$).

Conclusions: Already by age 24, one in four transwomen in Brazil were infected with HIV, while overall prevalence approached 50%. To avert an enormous burden of infection, there is urgent need for interventions to increase condom use, HIV testing, PEP, and PrEP access and use among young transwomen. Providing health services for gender transition, general health care and addressing high substance use may be avenues to reach young transwomen for HIV prevention.

OA19.05

Early Antiretroviral Therapy and Daily Pre-Exposure Prophylaxis for HIV Prevention among Female Sex Workers in Cotonou, Benin: A Demonstration Study

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Background: We conducted a demonstration project to assess the feasibility and usefulness of HIV early antiretroviral therapy (E-ART) and pre-exposure prophylaxis (PrEP) among female sex workers (FSWs) in Cotonou, Benin. We present key indicators such as uptake, retention, adherence, condom migration and HIV incidence.

Methods: We recruited FSWs from 09/2014 to 12/2015 and followed them until 12/2016. FSWs were provided with daily TDF/FTC (Truvada®) for PrEP or received a first-line ART regimen as per Benin guidelines. At each visit, a questionnaire was administered while blood and genital samples were collected. TDF concentrations were measured in plasma samples regularly during follow-up, with a 0.31 ng/mL detection threshold. We used generalized estimating equations to assess trends in adherence, viral load and sexual behaviour.

Results: Among FSWs in the catchment area, HIV testing coverage was 95% (422/442). HIV prevalence was 26%. Among eligible FSWs, 95% were recruited (105/110) for E-ART and 88% (256/290) for PrEP. Overall retention at the end of the study was 48% for PrEP and 60% for E-ART ($p=0.046$). The proportion of PrEP participants with undetectable TDF levels increased from 28% at day 14 to 72% at the final visit ($p<0.0001$). There were 2 new cases of HIV infection among PrEP participants (HIV incidence: 0.8/100 person-years), but these 2 FSWs had discontinued PrEP for >6 months when found HIV-positive. At their last study visit, viral suppression (< 1000 copies/mL) was achieved among 87% of the FSWs on E-ART. Condom use with all clients in the last 2 weeks remained >90% at all visits.

Conclusions: Despite high uptake, retention was difficult in this population of highly mobile FSWs, underlining the importance of broad geographical coverage for such interventions to be successful in West Africa. Adherence to PrEP was particularly low, similar to what was observed in randomized trials among high-risk women. E-ART was a more successful intervention and is now offered to all key populations in Benin.

OA10.06

An integrated intervention to increase ART and MAT reduces mortality among PWID: Results from the HPTN 074 randomized trial

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Background: People who inject drugs (PWID) experience high mortality due to HIV and drug-related causes. Access to antiretroviral therapy (ART) and medication assisted treatment (MAT) interventions remains limited. We report the effect of an integrated HIV treatment-as-prevention intervention on mortality.

Methods: HPTN 074 is a randomized trial conducted in Indonesia, Ukraine, and Vietnam. HIV-infected index PWID and their HIV uninfected injection partners were randomly assigned to standard of care (SOC) or a systems navigation and psychosocial counseling intervention providing expedited referral to local HIV treatment and MAT services. Mortality by study arm was compared using Cox proportional hazards models.

Results: 502 indexes and 806 partners were enrolled and followed for 12-24 months. Overall, 13% (66/502) of indexes and 3% (19/806) of partners died during the follow-up (mortality rates 10.4/100 person-years (PY) (CI 8.1-13.3) and 2.1/100 PY (CI 1.3-3.3), respectively). Mortality rates were significantly reduced among indexes in the intervention arm: 5.6/100 PY (CI 2.6-10.6) vs SOC mortality rate 12.1/100 PY (CI 9.1-15.6); Hazard Ratio (HR) 0.47 (CI 0.22-0.90). The reduction among partners in the intervention group was even more pronounced: 0.5/100 PY (CI 0.01-2.6) vs 2.6/100 PY (CI 1.5-4.1) in SOC; HR 0.17 (CI 0.01-0.84). Among indexes, 26% of deaths were HIV-related. An additional 24% of deaths with unknown cause occurred among persons with CD4 < 200. Only 3% of deaths were due to overdose. The leading cause of death among the HIV-uninfected partners was medical (e.g. lung/liver) (47.4%) followed by unknown cause (21.1%) and overdose (15.8%).

Conclusions: The HPTN 074 trial provides evidence that an integrated intervention targeting HIV-infected PWID can substantially reduce all-cause mortality among PWID and their injection partners. The reduction among indexes can be attributed to enhanced ART and MAT uptake; the mechanisms for reduction among partners will be a subject of additional analyses.

Press conference abstracts – HIV Prevention for Women and Girls – Wednesday, 24 October

OA23.02 Sensitive Next-Generation Sequencing of HIV-1 from Seroconverters in the MTN-020/ASPIRE Dapivirine Vaginal Ring Study

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Background: A concern about dapivirine (DPV) for HIV prevention is resistant virus selection with breakthrough infection, including low frequency resistant variants missed by standard genotype that could promote spread of NNRTI resistance or reduce effectiveness of NNRTI-based 1st-line ART. We evaluated seroconverters in MTN-020/ASPIRE using sensitive next-generation sequencing (NGS) for drug resistance associated with DPV ring use.

Methods: ASPIRE was a safety and effectiveness study of the DPV intravaginal ring for HIV prevention conducted at 15 sites in South Africa, Zimbabwe, Malawi and Uganda. Plasma for NGS was collected at the 1st positive rapid HIV-1 test prior to ring discontinuation. Of 71 DPV arm seroconverters, 63 had detectable plasma DPV and HIV-1 RNA >350 c/ml. Plasma from these 63 was tested, along with matched controls from the placebo (PLB) arm, using NGS with unique molecular identifiers targeting HIV-1 RT aa 81-149 and 152-212. Drug resistance mutations (DRM) were defined by 2017 IAS-USA and reported if their frequency was $\geq 1\%$.

Results: 58 DPV and 57 PLB arm seroconverters were successfully tested by NGS. Overall, 13/115 (11%) had NNRTI DRM detected including V90I, K101E, K103N/S, V106M, V108I, E138A/G and V179D/T. Only 1 sample (PLB ring) had a low frequency DRM detected (9% E138A) that was missed by standard genotyping. The frequency of NNRTI DRM did not differ significantly by arm: 8/58 (14%) DPV arm vs. 5/57 (9%) PLB arm; $p=0.58$ (Chi-Square). Mutations selected by DPV in vitro including L100I, E138K, V179F or Y181C/I were not detected, even at low frequency.

Conclusions: NGS of HIV-1 in plasma samples at seroconversion in MTN-020/ASPIRE showed no significant difference in NNRTI DRM frequency between the DPV and PLB arms. Low frequency NNRTI DRM missed by standard genotype were rare in either arm. These findings indicate that NNRTI-resistant HIV was not preferentially transmitted or selected by the DPV ring and that the preventive benefit of the DPV ring outweighs drug resistance risk.

OA19.03 Early Persistence of HIV Pre-exposure Prophylaxis (PrEP) in African Adolescent Girls and Young Women (AGYW) from Kenya and South Africa

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Background: Adherence to pre-exposure prophylaxis (PrEP) is a key determinant of its efficacy for HIV prevention. Rates of PrEP continuation (or, persistence) in “real-world” clinical settings are not yet well-described, particularly among adolescent girls and young women (AGYW) in Africa; understanding AGYW patterns of use is critical to inform the scale-up of PrEP programs for this key population.

Methods: POWER is an open label PrEP implementation study among sexually active HIV negative AGYW (ages 16-25) providing PrEP with various delivery models including adolescent friendly clinics (Johannesburg, South Africa), mobile vans (Cape Town, South Africa), and family planning clinics (Kisumu, Kenya). Follow-up visits are scheduled 1 month after initiation and then quarterly. We report early experiences of PrEP uptake and persistence, measured by pharmacy records. Persistence was measured as continuous PrEP use at each visit using Kaplan-Meier survival analysis.

Results: Between June 2017 and March 2018 a total of 540 AGYW were enrolled, of whom 485 (90%) initiated PrEP. Most women (81%) were unmarried with 17% reporting >1 sex partner in past 3 months. Only 4% were in a known serodiscordant relationship while two-thirds (67%) reported not knowing their partner's status. Persistence was 51% at 1 month after initiation and 25% at month 3. Among those who continued PrEP at 1 month, half (49%) continued PrEP at 3 months.

Conclusions: PrEP uptake was high in this population of African AGYW participating in a PrEP implementation project. About half of those starting PrEP discontinued within 1 month and another half by 3 months. From programmatic data, it is unclear how well PrEP persistence aligns with the need or desire for PrEP; enhanced counseling on effective PrEP use may be needed. In addition, this young population may initiate on PrEP for exploratory purposes and see it as something new to be tried. Further research into reasons for PrEP discontinuation and resumption is needed for AGYW populations.

OA10.01 Male Partners of Adolescent Girls and Young Women (AGYW) in Durban, South Africa: How High is Their HIV Risk and What Groups are Most at Risk?

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Background: AGYW (ages 15-24) are at high risk of HIV in South Africa. Context-specific data on characteristics, HIV risk and healthseeking behaviors of male partners of AGYW are needed to develop more effective HIV programs.

Methods: We surveyed 962 men ages 20-40 recruited at community 'hot spot' venues (n=649) and HIV service sites (n=313) in 2 informal settlements in Durban, May-September 2017. We present descriptive and regression analyses of men's characteristics and their partnership and service-use experiences.

Results: Men's mean age was 28, 15% were married/cohabiting, and 61% employed. In the last year, 71% reported 2+ sexual partners; 24% had 5+. Overall, 75% had AGYW partner(s); 54% had both AGYW partners and partners age 25+. Men's last 3 partners were 3.4 years younger on average; 8% had partners 10+ years younger. With their last partner, 32% reported consistent condom use; 14% with each of their last 3 non-marital partners. In the last year, 64% reported HIV testing. Among HIV+ men (n=84), 87% were on treatment, and 24% knew they were virally suppressed. In multivariate analyses, men with more sexual partners in the last year were more likely to have advanced education ($p < 0.05$), be employed ($p = 0.01$), and be small business owners/entrepreneurs ($p < 0.01$). Taxi drivers had more age disparate partners ($p < 0.001$), more partners ages 15-19 in the last year ($p < 0.05$), and were less likely to have tested for HIV ($p < 0.05$). Formally employed men were about half as likely to be virally suppressed as informally or unemployed men ($p < 0.05$).

Conclusions: Men in informal settlements in Durban are at very high risk of both acquiring HIV and transmitting to AGYW due to high numbers of partners, overlapping partnerships of AGYW and older women, inconsistent condom use, suboptimal testing, and low viral load suppression. Engaging men in primary HIV prevention and targeted health services is critical, and reaching men at workplaces, colleges, taxi ranks and self-owned businesses may yield the greatest results.

P14.58LB Results From PEPFAR's DREAMS Partnership: Implications for Prevention Programming for Adolescent Girls and Young Women

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Background: In 2014, the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) partnered with the Bill & Melinda Gates Foundation, Girl Effect, Gilead Sciences, Johnson & Johnson, and ViiV Healthcare to create the DREAMS Partnership. DREAMS was created to address staggering rates of HIV in adolescent girls and young women (AGYW) 15-24 in 10 high HIV burden countries.

Methods: Modeling of new HIV diagnoses among 15-24 year old AGYW in DREAMS districts was used to look at changes over time from 2015 to 2017. This geo-statistical modeling used program data from 90,000 antenatal clinics tracked on a quarterly bases, including new diagnoses among 15-24 year old females and pregnancy rates. Districts were divided into two groups that showed: 1) declines in new diagnoses of 25% or greater (HIGH group); 2) declines of less than 25% (LOW group). Univariate comparisons were conducted to investigate factors that may explain differences in this outcome between the HIGH and LOW groups (i.e., months implementing, rural vs urban, and coverage).

Results: Nearly 2/3 of DREAMS districts were in the HIGH group (26% - 67% declines in new diagnoses), while 1/3 of districts were in the LOW group (6% - 24% declines). 79% of rural areas were in the HIGH group, compared to only 50% of the non-rural (mixed and urban) areas ($\chi^2 = 5.26$, $p < 0.05$). 81% of full coverage districts were in the HIGH group, compared to only 36% of partially covered districts ($\chi^2 = 10.16$, $p < 0.005$). Length of program duration did not distinguish between the HIGH (mean 13.8 months) and LOW (12.4 months) groups ($t=1.31$, n.s.).

Conclusions: Our results show that comprehensive prevention interventions work for AGYW, most of the time and in most places. Implementing in rural areas and with full geographic coverage may contribute to greater declines in new HIV diagnoses among AGYW. These results indicate the need for creativity in responding to the needs of AGYW in urban and periurban areas and the importance of geographic accessibility to DREAMS interventions.