Abstracts

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111 Associations between Urine Tenofovir Levels, Pharmacy Measures, and Self-Report for HIV Pre-Exposure Prophylaxis Adherence Monitoring

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Background: Oral daily pre-exposure prophylaxis (PrEP) prevents HIV acquisition and can be monitored through dried blood spot (DBS) drug concentration analysis. Clinical settings are often without access to DBS monitoring; however tenofovir (TFV) levels in urine are gaining evidence. To contribute to this evidence-base, we evaluated the association between urine TFV concentrations with medication possession ratio (MPR) and patient self-report (SR).

Methods: We examined urine TFV levels, 7-day SR, and 3-month MPR, using pharmacy refill data, in 84 patients who were enrolled in the Washington University in St. Louis PrEP cohort from May-August 2016. Urine TFV concentrations of >1,000ng/mL were categorized as having been dosed in the past 48-hours. Pharmacy MPR ≥0.57 was categorized as dosing ≥4 times/week on average over the past 12 weeks. SR of having taken ≥4 doses in the past week was used.

Results: Patient median age was 27 years (IQR 24-33); 92% were male, 33% Black, 90% MSM; and median time to urine TFV testing was 10 months (IQR 4-13). Majority (88%) had urine TFV >1,000ng/mL, 73 (94%) met the MPR cut-off and 74 (88%) met the SR cut-off. Of those with urine TFV >1,000ng/mL, cut-off values for MPR were reached by 68 (99%) and 71 (96%) for SR. For those below the cut-off for urine TFV, 4 (44%) also were below the cut-off for MPR, and 7 (70%) for SR. Misclassification was uncommon (20% of those below the MPR cut-off and 7% above it were misclassified by urine; whereas 30% of those below the SR cut-off and 4% above it).

Conclusions: There is a growing need to accurately and easily monitor PrEP adherence in the clinic setting. Our results suggest that urine TFV concentrations mapped well onto other measures. Combined with evidence supporting urine TFV validity, this approach may offer additional approaches for PrEP adherence monitoring.

115 Adherence and Risk for Incident Sexually Transmitted Infection among Methamphetamine Using Men who have Sex with Men on HIV Pre-Exposure Prophylaxis

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Background: Methamphetamine (METH) use is related to increased sexual risk behavior among men who have sex with men (MSM). METH-using MSM may therefore be good candidates for HIV pre-exposure prophylaxis (PrEP). The effectiveness of PrEP, however, strongly depends on maintaining adherence, and METH users have been shown to have medication adherence difficulties in the context of living with HIV. As such, we hypothesized that among MSM enrolled in a randomized controlled PrEP trial, METH users would have lower levels of PrEP adherence.

Methods: We examined baseline and ongoing METH use over 48 weeks for association with dried blood spot (DBS) intracellular tenofovir-diphosphate (TFV-DP) levels in 394 study participants (391 MSM and 3 transgender women). METH use was assessed (for the past 3 months) at all study visits using a SCID screening questionnaire for "No use," "Some use" (1-4 times), and "Heavy use" (≥5 times). The adherence composite outcomes were defined as displayed in the table. We also assessed whether baseline METH use impacted study completion and incident sexually transmitted infections (STIs) while on study.

Results: METH use did not significantly impact PrEP adherence (Table). "Some" METH use at baseline was associated a.) with significantly lower likelihood of study completion (OR0.48, p=0.048; "Some" METH 70% study completion versus each 83% in "No" or "Heavy" METH use), and b.) significantly higher likelihood of developing incident STI while on study (OR 2.44, p=0.011; 58% incident STI with "Some" METH use versus 36% and 39% incident STI in "No" and "Heavy" METH use, respectively)

Conclusions: Self-reported METH uses did not relate to lower PrEP adherence. Interestingly, "Some" METH use, which may relate to binge use or potentially use only during sexual encouters, was associated with lower likelihood of study completion and higher likelihood of incident STI when compared to "Heavy" or "No" use.

Primary and Secondary Adherence Composite among Categories of METH Use

METH use	Primary Adherence Composite (i.e. DBS TFV-DP levels > 719 fmol/punch at the week 12 and 48 visits; cutoff is associated with taking ≥ 4 doses of TDF in the past week); YES (%)	p-value	Secondary Adherence composite (i.e. DBS TFV-DP levels > 1246 fmol/punch at the week 12 and 48 visits; cutoff is associated with taking 7 doses of TDF in past week); YES (%)	p-value
Baseline METH use		0.53		0.22
No (n=331)	23/3317 (72%)		96/331 (29%)	
Some (n=40)	28/40 (70%)		9/40 (23%)	
Heavy (n=23)	14/23 (61%)		10/23 (43%)	
Ongoing METH use (i.e. METH use reported at >50% of visits)		0.66		0.10
No (n=342)	240/342 (70%)		97/342 (28%)	
Some (n=32)	25/32 (78%)		8/32 (25%)	
Heavy (n=20)	14/20 (70%)		10/20 (50%)	

117 Relationship between Mental Health and Retention in HIV Primary Care: A Systematic Review and Meta-Analysis

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Background: Mental health disorders are common among persons living with HIV and may be linked to poor retention in HIV primary care. The purpose of this review was to synthesize the quantitative evidence examining the association between mental health diagnosis/symptoms and retention in HIV care, as well as determine whether mental health service utilization is associated with improved retention in HIV care.

Methods: A comprehensive search of the CDC's HIV/AIDS Prevention Research Synthesis Database (e.g. MEDLINE, EMBASE, PsycINFO) and manual searches were conducted to identify relevant studies published between January 2002 and March 2016. Studies were included in this review if they were conducted in the US and assessed the association between mental health diagnosis/symptoms or mental health service utilization and retention in HIV care. Effect estimates from individual studies were pooled using random-effects meta-analysis. A moderator analysis was conducted to identify potential sources of heterogeneity. Study quality was assessed using the NHLBI Quality assessment tool for observational studies.

Results: Forty studies, including 55,800 participants, met the inclusion criteria: 35 examined mental health diagnosis/symptoms, and 12 examined mental health service utilization. Overall, there was a small, significant association between having a mental health diagnosis/symptoms and lower rates of retention in HIV primary care (OR=0.95, 95% CI=0.91, 0.99). Health insurance status (β=0.004, Z=3.25, p=0.001) significantly modified the association between mental health diagnosis/symptoms and retention in HIV care. In addition, mental health service utilization was significantly associated with higher rates of retention in HIV care (OR=1.95, 95% CI=1.50, 2.52).

Conclusions: Results suggest that mental health diagnosis/symptoms are a barrier to retention in HIV care and emphasize the importance of providing mental health treatment for HIV patients who need it.

127 Role of HIV Testing Site Type in Timely Linkage to HIV Care, Florida 2014–2015

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Background: Delayed linkage to HIV care and subsequent treatment impacts disease progression and survival. The objective of this study was to determine the role of HIV testing site type in delayed linkage to HIV care among people aged ≥13 years without AIDS at time of HIV diagnosis.

Methods: De-identified data for people diagnosed with HIV during 2014–2015 were obtained from the Florida Enhanced HIV/AIDS Surveillance System. Delayed linkage to care was defined as no evidence of a physician visit, receipt of an antiretroviral prescription, or laboratory test (viral load or cluster of differentiation 4 [CD4] count) within 3 months of HIV diagnosis. Multilevel logistic regression was performed to calculate adjusted odds ratios (AOR) for non-linkage to care by HIV testing site type adjusting for birth sex, race/ethnicity, age at diagnosis, United States nativity, HIV transmission category, and the neighborhood variables of socioeconomic status, percentage black, and rural/urban status.

Results: Of the 6,900 people diagnosed with HIV, 1,594 (23.1%) had delayed linkage to care. This percentage ranged from 14.1% among 1,308 people tested at HIV/infectious disease outpatient clinics to 59.9% among 399 tested at blood banks/plasma centers. Relative to being tested at an HIV/infectious disease outpatient clinic, the AOR for delayed linkage to care of testing at blood banks/plasma centers was 6.38 (95% confidence interval [CI] 4.89-8.33), followed by HIV case management site (3.23; 95% CI 2.47-4.22), HIV counseling and testing site (2.25; 95% CI 1.83-2.77) and tuberculosis/sexually transmitted disease/family planning site (2.29; 95% CI 1.61-3.25).

Conclusions: Despite controlling for sociodemographic and other presumed relevant factors, testing at blood banks/plasma centers, HIV case management, HIV counseling and testing or tuberculosis/sexually transmitted disease/family planning sites was associated with delayed linkage to care. Procedures at these sites need to be systematically evaluated to identify ways to improve linkage.

131 The Impact of Internalized HIV Stigma on Retention in HIV Care

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Background: Internalized HIV stigma may be an important construct related to poor retention in HIV care given evidence for its negative role in several areas of the HIV care continuum. Stigma has been shown to reduce access to HIV care and medication adherence. Little is known however, about the association of internalized HIV stigma with retention in care. This study therefore, examined the relationship of internalized HIV stigma to retention in HIV care and also tested for protective, moderating effects.

Methods: Data from 188 men and women living with HIV/AIDS in Miami, FL, USA were collected via medical chart abstraction and interview. The number of missed visits over a 14-month time period was used as the measure of retention in HIV care. Demographic characteristics, HIV risk behaviors, HIV care related factors (ex. level of engagement with provider, time to travel to the clinic), as well as psychosocial constructs (ex. social support, depression) were administered as well as a validated internalized HIV stigma scale to explore the association of internalized HIV stigma with missed visits. Variables significant with missed visits at $p < 0.10$ in a Spearman correlation analysis were included in a Poisson regression analysis.

Results: Eighty-six percent of patients in our sample reported missing one or more scheduled medical appointments in the 14- month observation period. Eighty-four percent of patients reported experiencing some level of HIV internalized stigma, with 35% of patients scoring higher than the mean. A significant moderation effect was found ($p=0.003$) between internalized stigma and engagement with provider, such that as internalized HIV stigma scores increased, lower provider engagement scores were associated with increased missed visits incidence rate.

Conclusions: Our findings indicate that internalized HIV stigma may not impact retention in care in isolation but instead depends on the quality of the relationship with one's provider. In addition to interventions to focus on reducing the internalized HIV stigma, interventions to improve the patient-provider relationship may also be effective to improve retention in HIV care.

142 Contribution of Engagement in HIV Care on Disparities in Viral Load Suppression among Latinos, Florida, 2015

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Background: The study purpose was to identify disparities in human immunodeficiency virus (HIV) viral load suppression among Latinos engaged and not engaged in HIV care.

Methods: We used records from Hispanics/Latinos aged 13 and older who met the Centers for Disease Control and Prevention HIV case definition and were reported to the Florida Department of Health HIV/acquired immunodeficiency syndrome (AIDS) surveillance system. Viral load suppression during 2015 was defined as a viral load of <200 copies/mL. Engagement in care during 2015 was defined as evidence of at least 1 viral load or CD4 laboratory test, a physician visit, or antiretroviral therapy prescription fill. Multi-level (random effects) models were used to estimate adjusted odds ratios (aOR) for non-viral load suppression by engagement in care status adjusting for individual and neighborhood factors.

Results: Of 12,166 Latinos with HIV, 73.2% were engaged in care, and 64.0% were virally suppressed. Of 8,901 engaged in care, 87.5% were virally suppressed. Latinos born in Mexico (aOR 2.54, 95% confidence interval [CI] 2.14-3.01) and Central America (aOR 1.69, 95% CI 1.46-1.95) had decreased odds of being engaged in care when compared with United States (US)-born Latinos. Among all Latinos, those born in Mexico (aOR 1.82, 95% CI 1.55-2.14) and Central America (aOR 1.29, 95% CI 1.12-1.48) were at increased odds of non-viral suppression compared with US-born Latinos. But among Latinos engaged in care, those born in Mexico (aOR 0.65, 95% CI 0.47-0.89) and Central America (aOR 0.69, 95% CI 0.55-0.88) were at decreased odds of non-viral suppression.

Conclusions: Disparities in viral load suppression among Latinos may be greatly reduced by focusing resources and effort to engage high-risk Latino subgroups in HIV care at least once per year. Once engaged in care, Mexicans and Central Americans have a high likelihood of viral suppression, beyond that of US-born Latinos.

145 Does an Adherence-Enhancing Program Increase Retention in Care in the Swiss HIV Cohort? - Updated Results

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Background: In order to reach the UNAIDS 90-90-90 targets, scalable interventions are needed to improve HIV treatment adherence and retention in care. This study tested a theory-based behavioral intervention to increase HIV treatment engagement and retention in Lausanne.

Methods: We retrospectively compared two centers participating in the Swiss HIV cohort Study (SHCS) between 2004-2012. All patients attending either the Lausanne (intervention group (IG)) or Geneva (control group (CG)) centre and on ART for > 6 months were included. The intervention was offered to patients deemed in need and included three aspects: electronically monitored medication adherence using MEMS™, motivational interviewing, feedback to patient and report to treating HCP. The CG received only the standard of care. Lost to follow-up (LTFU) was defined as intervals of >6 and >12 months without any registered laboratory results. Logistic regression models including inverse-probability of treatment weights (IPTW) were used to adjust for differences in the patient populations at the two centers.

Results: The IG included 451 patients, CG 311. In the IG, 180 (40%) took part in the intervention for a median of 109 weeks (IQR: 39-189). LTFU was significantly less likely in the IG compared to the CG (56.9% vs. 74.6% and 12.5% vs. 22.6% at 6 and 12 months, respectively, both p<0.001). These associations remained significant in IPTW models with a 33% reduction in odds of LTFU at 6 months (odds ratio 0.67, 95% confidence interval 0.53-0.86). The time until the first treatment gap was significantly longer in the IG (p<0.001).

Conclusions: This study showed the effectiveness of a theory-based adherence enhancing intervention in Lausanne to limit LTFU significantly at 6 and 12 months. Further research using a randomized control trial will be sought to confirm the results.

151 Text Message Response Predicts Tenofovir Levels in MSM Taking PrEP

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Background: PrEP effectiveness is strongly linked to adherence. We compared response to a daily texting adherence prompt (individualized Texting for Adherence Building, iTAB) with a biologic marker, tenofovir diphosphate (TFV-DP) in dried blood spots.

Methods: CCTG 595 is a 48-week study of 398 HIV-uninfected MSM to evaluate daily TDF/FTC adherence. Analysis was performed on subjects randomized to iTAB at week48. TFV-DP concentrations were compared to the proportion of positive iTAB responses over 34 days (~2 half-lives) prior to the week 48 visit. TFV-DP levels were categorized by doses/week based on drug levels in fmol/punch: 719 fmol/p).

Results: Mean TFV-DP concentration was 1258±527 fmol/p among iTAB subjects (n=152) at week 48. Positive iTAB responses indicated 84%±20% of doses were taken in the 34 days prior to week 48. Subjects with TFV-DP>719 fmol/p had a higher proportion of positive iTAB responses compared to those with TFV-DP<719 fmol/p (87% v. 68%, p<0.001). TFV-DP concentrations by dosing categories were significantly correlated with proportion of positive iTAB responses with 56% for <2 doses, 68% for 2-3 doses, 83% for 4-6 doses and 89% for 7 doses (ICC=0.36, p<0.001). ROC analyses suggested that the optimal cut-score of proportion of positive iTAB responses to predict protective TFV-DP levels was 75% (specificity 52%, sensitivity 85%, PPV 91%, NPV 38%).

Conclusions: Overall adherence to PrEP was high among iTAB users. Self-reported dosing by daily text messaging is associated with TFV-DP levels but there is high variance, which may be due to iTAB fidelity and/or biologic variation of TFV-DP levels. In settings where drug level testing is not used, text message adherence reporting could be used to prompt and assess adherence.

154 Changing Trends in ART Prescription, Durability, and Modification

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Background: The antiretroviral therapy (ART) landscape for treatment-naïve people living with HIV (PLWH) changes frequently as new agents and combinations are approved annually. This dynamic field requires constant study to understand ART outcomes in routine settings.

Methods: This retrospective follow-up study of the CNICS (CFAR Network of Integrated Clinical Systems) cohort integrates data from 8 Center for AIDS Research (CFAR). PLWH initiating ART between Jan 2007 and Dec 2014 were included. Durability was defined as time from ART initiation until discontinuation/modification and was evaluated using Kaplan-Meier survival curves. Cox Proportional Hazards models analyzed associations between durability and various socio-demographic and clinical characteristics.

Results: Among 5,373 PLWH (mean age 37.9 years, 85% males, 64% MSM, 25% uninsured), the initial regimen was modified in 2,285 (43%) persons. Efavirenz/emtricitabine/tenofovir (n=2173, 40%) was the most commonly prescribed initial ART regimen; elvitegravir/cobicistat/emtricitabine/tenofovir became more common after 2012. Median durability for all regimens was 49 months. Durability was 61, 44, and 32 months, for NNRTI, II, and PI-based regimens, respectively. In multivariable analyses, black race (aHR=1.1; 95% CI: 1.0-1.2); female sex (aHR=1.4; 95% CI: 1.2 – 1.6), IV drug use (aHR=1.6; 95% CI: 1.3 – 1.9), baseline CD4 cell count [3] (aHR=1.2; 95% CI: 1.1 – 1.3) were significantly associated with regimen modification. As compared to II-based ART, those receiving II/PI (aHR=2.7; 95% CI: 2.0 – 3.7) and PI (aHR=1.9; 95% CI: 1.6 – 2.2) were more likely to be modified.

Conclusions: NNRTI and II-based ART were most durable and least likely to be modified in a contemporary cohort of PLWH initiating ART. Changes in prescribing patterns such as increasing use of combination ART regimens after 2009 likely influenced the reduced durability and increased regimen modifications observed in more recent years. A greater understanding of contemporary ART outcomes in minority populations is needed to ensure health equity.

158 Association between Discrimination in Healthcare Settings and HIV Medication Adherence: Mediating Psychosocial Mechanisms

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Background: Experiencing HIV-related stigma and discrimination in a healthcare setting may impact quality of care for people living with HIV (PLWH), negatively affect their healthcare utilization behaviors, and have detrimental effects on their health outcomes. There is insufficient research on the impact of discrimination in healthcare settings on antiretroviral therapy (ART) adherence and even less is known about psychosocial mechanisms that may mediate this relationship.

Methods: Cross-sectional analyses were conducted in a sample of 1356 women living with HIV enrolled in the Women's Interagency HIV Study (WIHS), a multi-center cohort study. Indirect effects analysis with bootstrapping was used to examine the mediating roles of internalized stigma (assessed with a validated 7-item scale) and depression symptoms (assessed with the 20-item Center for Epidemiological Studies Depression scale) in the association between perceived discrimination in healthcare settings (one item) and self-reported ART adherence (dichotomized at 95% or greater).

Results: Reported discrimination in healthcare settings was negatively associated with optimal ART adherence (adjusted odds ratio AOR=0.81, p=.02, 95% confidence interval CI [0.68,0.97]). Furthermore, internalization of stigma and depression symptoms mediated the discrimination-adherence association. Serial mediation analyses revealed a significant indirect effect of perceived discrimination in healthcare settings on ART adherence, first through internalized HIV stigma and then through depression symptoms (B=-0.08, SE = 0.02, 95% CI [-0.12,-0.04]).

Conclusions: Perceiving discrimination in healthcare settings contributes to internalization of HIV-related stigma, which in turn leads to depression symptoms, with downstream adverse effects on ART adherence. These findings can guide the design of interventions to reduce discrimination in healthcare settings, as well as interventions targeting psychosocial mechanisms that impact the ability of PLWH to adhere to ART. Healthcare settings should address discriminatory and stigmatizing attitudes by providing training and awareness programs on reducing stigma and creating a welcoming empathetic care environment.

161 Associations between Research Staff-Participant Interactions and HIV PrEP Adherence in HPTN 067

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Background: Adherence to HIV pre-exposure prophylaxis (PrEP) may be influenced by social factors including participants' and partner/family support, stigma tied to perceived HIV infection, and study staff-participant relationships. Understanding the association between these factors and PrEP adherence can support efforts to optimize PrEP adherence. We characterize the relationship between social influence variables and PrEP adherence among daily-dosing regimen participants, in HPTN 067, an open-label trial of oral tenofovir (TFV) disoproxil fumarate (TDF) 300 mg/emtricitabine (FTC) 200 mg).

Methods: Participants were healthy HIV-uninfected women in Cape Town, South Africa (n=55) and men who have sex with men and transgender, in Bangkok, Thailand (n=53) and New York, US (n=47). Using participant self-reported data collected at weeks 18 and 30, we developed scales reflecting negative social responses to trial participation (range: 0-5) and negative patient-study staff relationship (range 0-7). Adherence was assessed by plasma TFV concentration at weeks 18 and 30. GEE linear regression assessed the association between log-transformed plasma TFV concentrations and social factors; covariates included site, age, creatinine clearance, weight, education, substance abuse, HIV-prevention attitudes, study-related adverse events, and time-since-last-dose. Participants who seroconverted, or experienced product holds prior to blood draws, were excluded from this analysis.

Results: Data on 304 plasma samples from 155 participants were analyzed. The mean scores for each scale were: social influence: 1.32 (SD: 1.25) and patient-staff interactions: 0.99 (SD: 1.35). After controlling for covariates, participants reporting an increasing number of negative study-staff-participant interactions displayed decreasing log plasma concentrations of TFV (b = -0.27; 95% CI (-0.51,0.02); p = 0.03). The relationship between the social influence scale and TFV drug plasma levels was non-significant (b = -0.09, 95% CI (-0.34, 0.15); p = 0.45).

Conclusions: Results suggest that interventions to reduce negative staff-participant interactions should be explored to reduce PrEP non-adherence. These findings require confirmation in future studies.

163 Short Message Service (SMS) Reminders Improve Patient On-Time Pill Pick-Up of their Antiretroviral Medicines in Namibia

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Background: The short message service (SMS)-based antiretroviral therapy (ART) pharmacy appointment and adherence reminder system provides automated SMS notifications to patients on ART, reminding them of appointment dates assigned using the electronic dispensing tool (EDT) as well as reminders for adherence to ART. Any patient on ART in the public sector may subscribe to this service implemented by the Ministry of Health and Social Services (MoHSS) with technical assistance from the USAID-Systems for Improved Access to Pharmaceuticals and Services (SIAPS) project.

Methodology: Ten ART sites with poor adherence and retention rates (<75%) and poor on time pill pickup rates (<80%) [HIVDR EWI] were selected for the SMS reminder system through cluster randomisation based on adherence scores. The EDT already in use for ART patient management at the sites was linked to an SMS system that enabled messages to be delivered to ART patients enrolled at the selected ART sites. Patients were enrolled based on informed consent to receive the coded messages. The SMS reminders prompt patients to come for their antiretroviral (ARV) pill pickups on time; remind them when they are late and encourage them to adhere to prescribed pill-taking schedules. About 40% (8,147/20,377) of patients from seven ART sites had enrolled for the SMS reminder service by September 2016 and by end of December 2016, about 8,452 reminders were sent to patients.

Results: Patient on time pill pickup improved from 73% at the inception of the SMS reminder system to 89.4% after a 3-month period of enrolment in December 2016. The proportion of patients picking up their ARVs on time was associated with the density of SMS reminders. Major reason for not enrolling into the service was lack of a phone (29%).

Conclusion: Short Message Service (SMS) reminders improved patients' on-time pill pick-up of their ARVs at the selected ART sites in Namibia. SMS should be rolled out to all 51 main sites in Namibia and be integrated into the routine functioning of the ART program. MoHSS should form partnerships with mobile network providers to optimise the scale up of the reminder service.

166 Monitoring Delays in Adopting WHO HIV Treatment Guidelines in Low- and Middle-Income Countries

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Background: Many countries use the World Health Organization (WHO) HIV treatment guidelines to revise their national guidelines. Our study examines the national policy response to the HIV epidemic in low- and middle-income countries and quantifies the time in the adoption of the October 2009, June 2013, and September 2015 WHO guidelines.

Methods: Through monthly Internet searches, direct requests to experts and program managers and unsolicited submissions, as of December 2016, the IAPAC national HIV policy website (www.hivpolicywatch.org) included 250+ published national ART policies from 123 countries from all five regions. Using the site database, we abstracted date of publication and antiretroviral therapy (ART) eligibility criteria from 210 published guidelines from 91 countries (92% of 2015 global HIV burden). We excluded nine countries that have reported moving to WHO 2009 or 2013 or 2015 guidelines but their latest guidelines are not available (an old version recommending ART according to WHO 2006 guidelines was available). Numbers of months taken to adopt the WHO 2009, 2013, and/or 2015 guidelines were calculated for the remaining 82 countries (91% of 2015 global HIV burden) to determine the average time lag in WHO guidelines adoption.

Results: Of 82 countries, 24 (47% burden) have published guidelines recommending the new WHO 2015 'treatment for all' recommendation, 33 (37% burden) are recommending ART at WHO 2013 CD4 criteria (≤ 500 cells/mm^3), and 25 (7% burden) at WHO 2009 CD4 criteria (≤350 cells/mm^3). The average time lag to WHO 2009 guidelines adoption in the countries was 12 months (n=68 countries). The countries that have adopted WHO 2013 guidelines took an average of 9 months (n=55 countries), a number that will increase to 16 months assuming the remaining countries move to CD4 ≤500 cells/mm^3 by March 2017. On average, the 24 countries recommending 'treatment for all' adopted this recommendation 2 months after the release of WHO 2015 guidelines in October 2015. Although the time to adoption of the 2015 guidelines appears accelerated, if the trajectories for the adoption of WHO 2009 and 2013 guidelines are followed, it may take many years for the new WHO 2015 guidelines to become national policies for most countries.

Conclusions: There is an urgent need to shorten the time lag in adoption and implementation of the new WHO guidelines recommending 'treatment for all' to achieve the 90-90-90 targets by 2020.

169 Global Status Report of HIV Care Continua and the 90-90-90 Targets

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Background: Consistent methods and routine reporting in the public domain are necessary for tracking the global and national progress towards the Joint United Nations Programme on HIV/AIDS (UNAIDS) 90-90-90 targets.

Methods: For 2010-2016, we searched PubMed, UNAIDS reports, World Health Organization (WHO)/UNAIDS reports, national surveillance and program reports, United States President's Emergency Plan for AIDS Relief (PEPFAR) Country Operational Plans, and conference presentations and/or abstracts for the latest available national HIV care continuum in the public domain. Continua included the number and proportion of people living with HIV (PLHIV) diagnosed, on ART and virally suppressed of the estimated number of PLHIV. We ranked the described methods for indicators to derive high, medium and low quality continuum.

Results: For 2010-2016, we identified national care continua with viral suppression estimates from 63 countries with 23.6 million (64%) PLHIV. Of the 63, six (2% of 2015 global HIV burden) were high quality, using standard surveillance methods to derive an overall denominator and program data from national cohorts for estimating steps in the continuum. Only nine countries in sub-Saharan Africa had care continua with viral suppression estimates. Of the 63 countries, the average proportion of PLHIV from all countries *on ART* was 48%, and *Virally suppressed* was 40%. Ten countries (Sweden, United Kingdom, Netherlands, Cambodia, Japan, Switzerland, Denmark, Austria, Rwanda and Namibia) were within 12% and 10% of achieving the 90-90-90 targets for *on ART* and *Viral suppression*, respectively. The limitations include variations in methods used for national continua and lack of availability of complete continua in the public domain.

Conclusions: Relatively few national continua, especially from sub-Saharan Africa, are available in the public domain and there is wide variation in methods for determining progress towards the 90-90-90 targets. A standardized monitoring and evaluation approach could improve the use of scarce resources to achieve 90-90-90 through improved transparency, accountability and efficiency.

173 Positive Links: A Mobile Health Intervention for Retention in HIV Care and Clinical Outcomes with 12 Months' Follow-Up

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Background: Mobile health interventions may help People Living with HIV (PLWH) improve engagement in care. We designed and piloted Positive Links, a clinic-affiliated smartphone app for PLWH, and assessed longitudinal impact on retention in care and clinical outcomes.

Methods: The program was based at an academic Ryan White Clinic serving a non-urban population in Central Virginia. The Positive Links app features included: educational resources; daily queries of stress, mood and medication adherence; weekly quizzes; appointment reminders; and a virtual support group. Outcomes were analyzed using McNemar's tests for HRSA-1 measures, Bowker's tests for visit constancy, and nonparametric Wilcoxon signed ranks tests for CD4 counts and viral loads. Changes in outcomes at baseline, 6 and 12 months, were analyzed using generalized estimating equations (GEE) methods to account for correlations within subjects over time.

Results: Of 77 participants, 63% were male; 49% black non-Hispanic; and 72% below the federal poverty level. Participants demonstrated sustained usage of the app over 12 months. Participants' retention in care indicated by HRSA-1 increased from 48% at baseline to 91% at 6 months and 80% at 12 months ($p<0.001$). Visit constancy increased from 26% of participants with the highest visit constancy at baseline to 40% at 6 months and 57% at 12 months ($p<0.001$). Participants' mean CD4 counts increased from baseline to 6 months and 12 months ($p=0.001$). Participants' mean viral loads decreased from baseline to 6 months ($p<0.001$).

Conclusions: The Positive Links program demonstrates that long-term benefits can be achieved through a clinic-deployed mobile health intervention for vulnerable patients. Next steps include clinical integration and dissemination.

174 Use of a mHealth Intervention to Improve HIV Treatment and Engagement in HIV Care among Recently Incarcerated Persons in Washington, DC

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Background: Recently incarcerated HIV-infected individuals have suboptimal antiretroviral treatment (ART) adherence and HIV care engagement in the community. CARE+ Corrections is a mHealth motivational interview with text messaging support to improve HIV treatment. We conducted a study of CARE+ Corrections among HIV-infected persons recently released from the criminal justice system in Washington, DC.

Methods: Currently or recently (previous 6 months) incarcerated HIV-infected persons ≥18 years were recruited from jail and the community, and randomized to CARE+ Corrections (intervention) or an educational overdose prevention video (control). Biobehavioral assessments were completed at baseline, 3 and 6 months. Multivariable random effects modeling was used to identify significant predictors of suppressed viral load ($\leq$200 copies/mL) and engagement in care during the follow-up period.

Results: Of 112 participants, 51% and 49% were randomized to the intervention and control arms respectively; 2 control participants did not complete the baseline visit and were excluded. Mean age was 41.5 (IQR: 30-39); 58% were male, 24% female, 18% transgender women; 85% were Black. Median time in a correctional facility was 7 years (IQR: 2-15). The groups were similar at baseline except a higher proportion of controls had a healthcare provider (89% vs 72%, $p=0.03$). Although not statistically significant, CARE+ Corrections participants had increased odds of viral suppression (AOR: 2.04; 95% CI: 0.62, 6.70) and being engaged in HIV care during the follow-up period (AOR: 1.18; 95% CI: 0.25, 5.53). Those who reported high baseline ART adherence were more likely to have viral suppression at follow-up (AOR: 10.8; 95% CI: 1.83, 63.3).

Conclusion: Viral suppression and HIV care engagement were improved among those who received the CARE+ Corrections intervention, although the study was not powered to determine efficacy compared to the control arm. Further research is needed to optimize this intervention and improve HIV outcomes among this vulnerable population.

179 Association between Internalized HIV Stigma and Visit Adherence: Downstream Effects on Antiretroviral Therapy Adherence

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Background: Prior research suggests that internalized HIV-related stigma acts as a barrier to antiretroviral therapy (ART) adherence, but the field lacks sufficient evidence regarding the effect of internalized HIV stigma on retention in care, and potential downstream clinical consequences.

Methods: In a sample of 196 HIV clinic patients in Birmingham, Alabama, we assessed internalized HIV-related stigma and adherence self-efficacy using validated multi-item scales, and assessed ART adherence using a validated single item measure. HIV visit adherence (attended out of total scheduled visits) was calculated using data extracted from clinic administrative records. Using covariate-adjusted regression analysis, we investigated the association between internalized stigma and visit adherence. We tested the mediating role of visit adherence in the association between internalized stigma and ART adherence. Similarly, a serial mediation analysis was conducted to test the indirect effect of internalized stigma on ART adherence first through adherence self-efficacy and then through visit adherence.

Results: Higher internalized stigma was associated with lower visit adherence (B=-0.05, p=0.01). Mediation analysis yielded an indirect effect of higher internalized stigma on sub-optimal ART adherence, mediated by lower visit adherence (B= -0.18, CI [-0.40, -0.02]). Serial mediation analysis suggested that the negative effect of higher internalized stigma on ART adherence was mediated first through lower adherence self-efficacy and then through lower visit adherence (B=-0.02, CI [-0.09, -0.003]).

Conclusions: Study results highlight the importance of internalized HIV stigma to multiple and sequential HIV care continuum outcomes among people living with HIV. The relationship between internalized HIV stigma and ART adherence was mediated by both adherence self-efficacy and visit adherence. These findings suggest multiple intervention targets, including addressing internalized stigma directly, and also the potential to address the negative downstream effects of internalized stigma on ART adherence by promoting adherence self-efficacy and consistent engagement in HIV care visits.

182 Preferences for and Concerns about Using Long-Acting Injectable Pre-Exposure Prophylaxis among Gay and Bisexual Men

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Background: Oral pre-exposure prophylaxis (PrEP) is highly effective at reducing HIV transmission risk and CDC-recommended for many gay, bisexual, and other men who have sex with men (GBM). Long-acting injectable PrEP (LAI-PrEP) is currently being tested as another method of PrEP dosing. We sought to investigate awareness of and preference for using LAI-PrEP among GBM currently taking oral PrEP, and identify their concerns.

Methods: A sample of GBM in NYC who are currently taking PrEP (n=104) were asked about their awareness of and preference for using LAI-PrEP. We examined associations of length of time on oral PrEP and concerns specific to LAI-PrEP on preference for LAI-PrEP using binary logistic regressions, adjusting for age, race/ethnicity, education, and income.

Results: Half (51.9%) were aware of LAI-PrEP. About one-third (30.8%) said they would prefer LAI-PrEP, and the remaining men preferred oral PrEP (26.9%), whichever most effective (34.6%), or had no preference (7.7%). Compared to men who more recently initiated PrEP, those taking PrEP longer had higher odds of LAI-PrEP awareness (AOR=10.53; 3.52-31.50, 95% CI). Men with more concern about incomplete protection using LAI-PrEP (AOR=0.44; 0.26-0.74, 95% CI) and more concern that LAI-PrEP protection would wear off (AOR=0.54; 0.33-0.89, 95% CI) had lower odds of preferring LAI-PrEP. Preferences were not associated with LAI-PrEP concerns about long-term health effects, potential side effects, returning for medical check-ups and injections every 3 months, or dislike of needles (p>0.10).

Conclusions: Some GBM currently on oral PrEP might transition to LAI-PrEP once available. GBM still have concerns about the level of protection and drug half-life of LAI-PrEP, but other concerns typically associated with oral PrEP uptake were not applicable to LAI-PrEP preferences among these current oral PrEP users. Findings about HIV protection and longevity of protection from ongoing clinical trials will likely influence whether oral PrEP users consider LAI-PrEP.

185 Geographic Variability in Time from HIV Diagnosis to Viral Suppression in Alabama

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Background: Time from HIV diagnosis to viral suppression (VS) is a novel surveillance metric spanning the pillars of the HIV continuum. This metric captures collective community HIV prevention and treatment activities provided by public health, community based organizations, and clinics.

Methods: Using Alabama HIV surveillance data, we evaluated percentage of persons with newly-reported HIV achieving VS (<200 c/mL) within 12 months after diagnosis and mean time from diagnosis to first reported VS among persons ≥13-years-old during 2012 and 2013 . Kaplan Meier (KM) survival methods evaluated mean time from diagnosis to VS overall, stratified by demographic variables and public health area (PHA). Our objective was to evaluate geographic variability in mean time from diagnosis to VS by PHA.

Results: 1301 HIV cases were diagnosed in Alabama during 2012 (n=669) and 2013 (n=632). In total, 729 (56%) persons achieved VS within 12 months of diagnosis, 53% in 2012 and 60% in 2013. The KM mean time from diagnosis to VS was 15 months with improvement observed from 2012 (16 months) to 2013 (11 months). Geographic variability was observed across PHAs, ranging from 41-83% of newly-diagnosed persons achieving VS within 12 months. Variability in time from diagnosis to VS was observed; mean time ranged from 8-20 months across PHAs. The three jurisdictions accounting for most newly-reported cases demonstrated lengthier gaps from diagnosis to VS, range 14-18 months; three jurisdictions with fewest newly-reported cases demonstrated shortest mean interval from diagnosis to VS, range 9-14 months. Other lower incidence PHAs showed variability in time from diagnosis to VS, range 11-20 months.

Conclusions: Temporal improvement in persons achieving VS within 12 months of HIV diagnosis in Alabama from 2012 to 2013 is encouraging. However, certain subgroups experience disproportionate delays in achieving VS following diagnosis. Geographic variability in time from diagnosis to VS was observed across jurisdictions, warranting further evaluation.

198 Durable Viral Suppression among HIV Care Coordination Participants and Non-Participants

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Background: Durable viral suppression (DVS) is the ultimate measure of adherence to HIV treatment and is crucial to efforts to curb HIV morbidity/mortality and transmission. The New York City (NYC) HIV Care Coordination Program (CCP) launched in December 2009 targets care and treatment engagement among those newly diagnosed or with a history of poor care continuum outcomes. We compared DVS in CCP and non-CCP HIV patients.

Methods: We merged programmatic data on all adults enrolled in the CCP for ≥1 day by March 31, 2013 with NYC surveillance registry data on all adults diagnosed with HIV as of March 31, 2013, and restricted to those with ≥2 viral load (VL) results between December 2009 and March 2016. Using propensity score matching within four baseline clinical-status groups (newly diagnosed or previously diagnosed and never, sometimes or always suppressed in the year prior to follow-up), we created a non-CCP comparison population from the surveillance registry. DVS was defined as regular VL monitoring and *all* VLs ≤200 in months 13-36 of follow-up.

Results: Our study population included 6,207 CCP and 6,207 matched non-CCP patients. While 89.9% of the combined cohort (91.3% in the CCP) had ≥1 VL≤200 during the follow-up period, only 36.8% achieved DVS. DVS relative risks (RRs) suggest a CCP advantage over 'usual care' among those never suppressed in the prior year (21.3% vs. 18.4%; RR 1.16, 1.04-1.29).

Conclusions: In this intent-to-treat analysis, the CCP showed an effect on DVS among those previously unsuppressed, who constituted the largest baseline clinical-status group (41% of our cohort). This finding is consistent with earlier analyses showing greater CCP impact among those starting with lower engagement. Given that <40% in our cohort achieved DVS, regardless of program enrollment, our findings underscore a need for more focused interventions to sustain adherence over time, in a context of high treatment access/uptake.

199 Continuum of Care in Patients with Unsuppressed Viral Load: Data from Rural Southern Africa – Are We Doing Enough for Children?

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Background: For HIV-positive individuals taking antiretroviral therapy (ART), the World Health Organization (WHO) recommends routine viral load (VL) monitoring, which commenced in the rural Butha-Buthe district in Lesotho in November 2015. We report on the challenges in ensuring the continuum of care in those with unsuppressed VL.

Methods: Requests for VL testing at the district laboratory come from 10 health centers and 2 hospitals providing ART to approximately 8000 individuals. Processed laboratory results are imported into a VL platform for monitoring and reporting. We included data through January 2017. VL results are defined as: <20 (suppressed), 20-999 (low-level viremia), ≥1000 (unsuppressed) copies/mL. As per WHO guidelines, patients with an unsuppressed VL receive adherence counseling and follow-up VL within 3-6 months. Virological failure is defined as two consecutive unsuppressed VL.

Results: 6,678 individuals, of which 357 were children (age6 months. Of the 247 with follow-up VL, done a median of 5 months (range 0-11) later, 86 (34.8%) had suppressed VL, 38 (15.4%) had low-level viremia, and 123 (49.8%) had virological failure. Children had a significantly higher failure rate than adults (65.8% vs. 46.9%, p=0.03).

Conclusions: In this population, the care cascade of patients with unsuppressed VL was very poor with only 29% receiving a follow-up VL within 6 months. The care cascade was particularly weak in children who were significantly more likely to have an unsuppressed VL and subsequent virological failure than adults. This evidence shows the importance of VL monitoring and emphasizes the need to ensure individuals, especially children, receive timely follow-up.

200 Social Norms Messaging to Improve Antiretroviral Adherence among Youth in Uganda

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Background: SMS messaging to improve medication adherence has a mixed record of success and has largely focused on adult populations. We report findings from one of the first studies to target youth, and the use of social norms messaging, an approach that to date has not been tested in this population. In one group, we send weekly messages informing participants of their Wisepill-measured adherence to counter over-optimism about their ability to stick to their pill regimen. In the second group, we also send information about group level adherence, which we hypothesize, will create a social norm to which participants in this group will strive to adhere to or even surpass.

Methods: Patients at two HIV clinics in Kampala, Uganda aged 15-24 years (80% female and 20% male) were randomly assigned to one of two intervention groups or a control group. In the first intervention group, participants received a weekly motivational message with information about their adherence level in that week. In the second group, participants in addition received information about the performance of their peers in the intervention. The main outcome is electronically measured mean dose-taking adherence. This trial is registered with ClinicalTrials.gov, NCT02514356.

Results: 147 clients were recruited and attrition over the nine study months was relatively low (17%). While we do not find an overall effect of the intervention, we find important treatment heterogeneity: those with low pre-intervention adherence experience about a 10% increase in mean adherence. Those with already high adherence before the intervention, on the other hand, see their adherence decrease by about 14%. We do not find differential impacts by gender.

Conclusions: The findings in this study suggest that SMS messaging to address over-optimism and creating a social norm is feasible and acceptable for a group of youth in HIV care in Uganda. The impact heterogeneity suggests that participants with lower adherence than the peer norm likely benefit most from such an intervention, and that different messaging may have to be used for those with higher initial adherence. The preliminary results and potential heterogeneity should be confirmed in a larger follow-up study.

201 Same-Day Home-Based ART Start in Lesotho: Lessons from the Field

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Background: The World Health Organization recommends HIV-positive patients to start antiretroviral therapy (ART) as soon as possible after diagnosis. However, first studies of same-day ART start showed high attrition to care raising concerns about potential development of resistance.

Methods: As part of a home-based HIV testing campaign conducted in rural Lesotho, HIV-positive ART-naïve individuals ≥ 18 years were recruited to a randomized controlled trial (CASCADE). The intervention arm consisted of same-day home-based ART start where individuals were given a 1-month supply of ART and an appointment at a health facility. We present acceptability, feasibility, and 6-month linkage to care.

Results: 137 ART-naïve individuals were proposed same-day home-based ART start: 66% women, median age was 41 years (interquartile range (IQR) 31-53), 63% were married/living with a partner of which 17% were known to be HIV-positive, and median travel time to the clinic was 1 hour (IQR 0.5-1.5). Median CD4 cell count was 350 cells/µl (IQR 246-498). All except one patient agreed to start ART that day (n=133) or in the next few days (n=2) and 134 were given tenofovir disoproxil/lamivudine/efavirenz. Ninety-eight (70%) individuals presented at the clinic after a median of 15 days (IQR 14-27) with 14 (14%) after >1 month. No side effects were reported. For patients who did not link within 3 months, 73% (29/40) were successfully traced and 19 reported ART usage (4 never started, 5 irregular, 10 daily intake).

Conclusions: Acceptability of home-based ART start was almost 100% and linkage to care was high at 70%. However, 34% of individuals who started ART did not attend the clinic in time to ensure a continual supply of ART suggesting either a late start, inconsistent ART use or drug holidays. Same-day ART start programs should consider adherence reminders, simplified access to drug refill and include early patient tracing.

214 Knowledge, ARV Adherence, and Attitudes of HIV-Positive Adolescents at Komfo Anokye Teaching Hospital, Kumasi, Ghana

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Background: As the availability of antiretroviral therapy (ART) grows throughout sub-Saharan Africa, youth perinatally infected with HIV are reaching adolescence in growing numbers. The questions guiding this research were (1) What is the knowledge level of HIV and its transmission among this population? (2) Which factors pose the greatest barriers to ART adherence? and (3) What challenges arise in navigating sexual relationships?

Methods: Participants were recruited from the Adolescent HIV Clinic at Komfo Anokye Teaching Hospital (KATH) in Kumasi, Ghana. Inclusion criteria included: (1) receiving ART from the adolescent clinic (2) aged 12-19 years (3) have knowledge of their HIV diagnosis and (4) are capable of answering questions in English or Twi (the local language). Thirty minute semi-structured interviews were conducted in a discreet location at KATH.

Results: Fifty-three participants were interviewed: 26 males, 27 females, ages 12-19 (average age= 15.6). Participants answered an average of 77% of the knowledge questions correctly. Twenty-seven participants (51%) were able to correctly identify five modes of transmission- unprotected sex, oral sex, needle sharing, blood contact, and vertical transmission. Yet, a significant portion of participants incorrectly identified transmission through kissing (53%), insect bites (43%), and witchcraft (34%) as "true". Moreover, only 38% of participants reported that they would disclose their status to a partner before having sex, and 25% denied condom use. The most common barriers to adherence included access to food (51%), medication shortages (36%), and transportation (36%).

Conclusions: The adolescent HIV population at KATH has a reasonably high understanding of HIV transmission, suggesting that education-based interventions have been successful. Despite this, over 60% of participants report that they would not disclose their HIV status to a sexual partner, and 25% deny that they would use condoms. This represents an urgent public health issue as these adolescents transition into becoming sexually active adults.

220 Effects of a Real-Time Reminder Intervention on Retention in HIV Treatment among Pregnant and Postpartum Women in a Low-Resource Setting: The Uganda WiseMama Study

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Background: HIV-positive pregnant and postpartum women (PPPW) are known to face barriers to retention in antiretroviral therapy (ART). The Uganda 'WiseMama' Study implemented a randomized controlled trial to assess the impact of a real-time reminder intervention on ART retention, adherence, and clinical outcomes in this population. Here we report on ART retention.

Methods: We enrolled pregnant women in antenatal care (ANC) and initiating ART at hospitals in Mityana and Entebbe, Uganda. Participants used a real-time monitoring device for their HIV medications for one month, and then were randomized to intervention (text message reminders triggered by late dose-taking combined with data-supported monthly counseling) or comparison (standard care) arm. Using intention-to-treat analysis, we compared ART retention between the two arms at postpartum month three, using three measures: a) 'full retention' (proportion that attended all scheduled monthly ART visits and delivered at the HIV/ANC care hospital); b) "visit retention" (proportion of scheduled visits attended); and c) "postpartum retention" (proportion retained in care at three months postpartum).

Results: We randomized 133 pregnant women between July 2015 and February 2016. Mean age was 25.1 years; median gestational age was 22 weeks. Full retention was low and similar in intervention and comparison arms: 49% vs. 53%, respectively (p=NS), and higher in Mityana (53%/61% in intervention/comparison arms) than Entebbe (46%/45%). Visit retention also showed no difference, with intervention/comparison participants attending 83%/87% of visits; proportions were again higher in Mityana (86%/92%) compared to Entebbe (79%/81%). Visit retention declined between pre- and post-delivery periods from 92%/95% pre-delivery to 75%/78% post-delivery ($p< 0.001$); this pattern was consistent across sites. Postpartum retention was 81% in both arms: 88%/ 91% in intervention/comparison arms in Mityana compared to 74%/71% in Entebbe.

Conclusions: Real-time feedback did not improve ART retention among PPPW in Uganda. This population experiences suboptimal retention and needs urgent support.

225 HIV Seroconversion after Exposure to nPEP vs PrEP at a San Francisco STD Clinic

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Background: We compared the real-world effectiveness of non-occupational post-exposure prophylaxis (nPEP) and pre-exposure prophylaxis (PrEP) among men who have sex with men (MSM) at an STD clinic.

Methods: MSM who were HIV negative at their initial clinic visit during 9/1/2012 - 6/30/2015 were divided into 3 mutually exclusive groups: (1) Ever reported PrEP use, (2) Prescribed ≥ 1 course of nPEP without evidence of PrEP use, and (3) Never reported PrEP use nor prescribed nPEP. We compared demographics, risk behaviors, and HIV seroconversion.

Results: Of 6,288 MSM, 514 reported PrEP use and 848 used nPEP only. Comparing groups 1, 2 and 3 respectively, there was no significant age difference (33.8 v 33.0 vs. 35.4 years; p0.05, African-American 7.0% v. 5.3% vs. 8.4%; p<0.05). PrEP users were more likely to identify as gay (91.4% v. 82.8% vs. 68.1%; p<0.001), to have other non-HIV STIs prior to (52.3% v. 29.7% vs. 32.6%; p<0.001) and during (55.4% v. 26.5% vs. 17.2%; p<0.001) the analysis period, and to report more sex partners in the last 3 months [mean number of male partners 9.2 v. 6.8 vs. 4.6 (p<0.001); mean number of condomless receptive anal sex partners 2.2 v. 1.5 vs. 0.9 (p<0.001)]. One quarter (25.9%) of PrEP users also used nPEP. Of nPEP users, 23 (2.7%) seroconverted, compared with 6 (1.2%) of PrEP users and 119 (2.4%) of those without evidence of nPEP or PrEP (p>0.05).

Conclusions: MSM using PrEP had higher sexual risk compared to those using nPEP alone, yet were less likely to seroconvert. MSM at STD clinics should be offered PrEP, and those using nPEP should be linked to PrEP after nPEP completion.

227 Who Opts for Daily versus On-Demand Pre-Exposure Prophylaxis?

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Background: The efficacy of Pre-Exposure Prophylaxis (PrEP) for HIV taken either daily or on-demand (before and after sexual interactions) has been established in clinical trials. Real-world data describing factors associated with decisions to take daily versus on-demand regimens is limited.

Methods: We compare the demographic and risk profiles of patients who were prescribed daily or on-demand PrEP at Clinique médicale l'Actuel, the largest provider of PrEP in Canada since 2011. Data was restricted from March 1, 2014-February 1, 2017 to reflect the period when on-demand PrEP was offered at l'Actuel. Logistic regression models were used to calculate Odds Ratios (OR) with 95% Confidence Intervals (CIs) for prescription of on-demand versus daily PrEP in a multivariate model adjusted for age, education, revenue, indication of PrEP prescription and number of sexual partners in the last year.

Results: Among 1073 MSM prescribed PrEP, 838 received daily (77.5%) and 243 received on-demand (22.5%) regimens. The prescription of on-demand PrEP was associated with older age (aOR: 1.02, 95%CI: 1.002-1.037), fewer sexual partners (aOR: 0.98, 95%CI: 0.97-0.99) and a lower probability of reporting seropositive partner(s) at baseline: (aOR: 0.40, 95%CI: 0.18-0.87). No association between on-demand PrEP was observed for education, revenue or self-reported risks such as condomless anal sex with multiple partners.

Conclusions: Younger patients were more likely to receive daily PrEP, which may be explained by behaviour profiles in line with daily use, such as spontaneous sex with multiple partners, whereas older patients may tend to engage in planned sex, making on-demand PrEP an appropriate option. As Health Canada has only approved once-daily PrEP, Clinique l'Actuel is a pioneer in prescribing on-demand PrEP and taking a patient-centered approach towards considering risk profiles and lifestyle factors when choosing PrEP regimens. Further research is needed to understand the best situations in which to prescribe on-demand PrEP.

243 Effectiveness of a Peer Navigation Intervention to Maintain Viral Suppression among HIV+ Men and Transgender Women Released from a Large Municipal Jail: Results of a Randomized Controlled Trial

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Background: An estimated one in seven PLWH pass through correctional facilities annually. While incarcerated, PLWH receive ART and achieve viral suppression (VS) more consistently than after release, yet no published interventions have sustained VS post-release. To address this gap, we conducted a randomized controlled trial of a peer navigation (PN) intervention.

Methods: From December 2012 through June 2016, we enrolled PLWH being released from Los Angeles County (LAC) jail. Eligible participants were: 1. Age 18+ years; 2. HIV+ men or transgender women; and 3. English speaking. At baseline, we interviewed, measured viral load (VL), and randomized PLWH 1:1 to the PN intervention or a usual care (UC) control involving transitional case management. We trained lay PNs to assess barriers and facilitators and counsel PLWH on goal setting and problem solving, beginning in jail. Post release, PNs continued counseling while they accompanied PLWH to two HIV care visits and helped "walk PLWH through" other HIV care continuum steps. The primary outcome was VS at 12 months. We used repeated measures, logistic, random intercept regression to model VS outcomes over time; predictors were baseline VL, intervention arm, time, and intervention-by-time interaction term.

Results: Intervention (n=180) and control (n=176) participants were mostly black (42%), Latino (31%), and hard substance users (78%). Adjusted probabilities of VS remained stable in the PN group, from 0.488 at baseline to 0.485 at 12 months; in the UC group, it declined from 0.52 at baseline to 0.30 (P 0.002) at 12 months.

Conclusions: Although VS did not increase significantly from baseline to follow-up, PN was successful at preventing declines in VS typically seen after release from incarceration. While PN is likely to help PLWH maintain VS after release from other jail settings, future research should examine ways to strengthen the intervention to increase VS levels post incarceration.

244 WhatsApp as a Tool to Support Recently Diagnosed Gay Men with HIV in Peru: A Randomized Controlled Trial

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Background: Timely linkage to medical care is crucial to decrease transmission of HIV. Although HIV treatment is available free of charge in Peru, only 40% of PLWHA are receiving treatment. This study assessed the efficacy of WhatsApp-based intervention delivered by trained tutors to increase linkage in HIV care among recently diagnosed gay men at Vía Libre HIV clinic in Lima, Peru.

Method: Between June-December 2015, adult men recently diagnosed with HIV were randomly assigned by concealed allocation to the intervention or the control group. Participants completed a self-administered survey on a tablet. Tutors were trained to deliver the intervention by sending validated messages addressing barriers to care through WhatsApp. The control group received the standard of care. The main outcome was having a second medical appointment for ART evaluation within 60 days.

Results: Participants were randomly assigned to intervention (N=40) or control groups (N=40). Mean age was 29.8; 70% reported some post high school education; 73% self-identified as homosexual. Participants in the intervention arm were more likely to be linked to care within 60 days, though not significantly (83% vs. 64%, RR: 1.34, 95% CI: 1.00-1.79). The main implementation challenges were: a) lack of trained counselors; b) organizing focus groups with positive gay men to validate the messages; and c) low initial enrolment rate due to fear of loss of confidentiality. Strategies used to overcome these were: a) training of counselors on HIV knowledge and on communication strategies for delivering mobile health interventions; b) validation of messages with individuals interviews to ensure privacy; and c) showing examples of text messages to participants during the enrolment process to show the use of neutral language.

Conclusion: Expanding the intervention would allow a more precise assessment of its impact. We are now inviting all recently diagnosed people to interact with a counselor through their mobile phones.

247 Time to Undetectable Viral Load after Highly Active Antiretroviral Therapy Initiation among Adults and Adolescents with HIV: Real World Evidence

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Background: Important differences have been registered in the care of PLWH in Mexico. We wanted to estimate the time to attain undetectable viral load after HAART initiation in real-world context.

Methods: A retrospective patient's record analysis was conducted using the database SALVAR of the Ministry of Health. We analyzed PLWH whom initiated HAART between 2010-2016. Patients with undetectable viral loads before the first 2 weeks of treatment were excluded, as well as duplicate records, trans people and children under 10 years at HAART initiation. We performed Kaplan-Meier estimates from HAART initiation to undetectable viral load.

Results: A total of 72,463 patients initiated HAART between 2010-2016, 20.3% women, with a median age of 32 years at initiation of HAART. A total of 51,187 year at risk were observed. The median time from HAART initiation to attaining an undetectable VL between 2010-2016 was 28 weeks, 33.6 week in 2010 and 25.7 in 2016 ($p<0.05$).

Conclusions: We observed a significant improve in the proportion of PLWH at 24-week post-HAART initiation between 2010-2016, and a decrease in median time to undetectable viral load after HAART initiation among adults and adolescents with HIV.

252 Adherence Trajectories among African-Americans Living with HIV

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Background: African Americans have lower antiretroviral therapy (ART) adherence than Whites. To understand potential reasons for disparities, we explored adherence trajectories among African-Americans living with HIV.

Methods: We combined two longitudinal studies of HIV-positive African Americans, resulting in 321 participants. Participants were recruited through community-based organizations and clinics. All participants were aged 18-years or above, self-identified as African American/Black, and were prescribed ART. Surveys were administered at baseline. Electronically monitored adherence data were collected at 1.5-2 months, 4-4.5 months, and 6-months post-baseline. Linear trajectory analysis was used to determine multiple longitudinal adherence trajectories. Individuals were assigned to the trajectory for which the analysis estimated the greatest probability of membership. A series of multinomial logistic regressions were used to examine associations between baseline characteristics and trajectory membership.

Results: Data revealed three adherence trajectories: (i) high/stable [n = 95; mean (SD) adherence levels = 92.6% (9.9), 92.4% (10.4), and 89.9% (13.7) for follow-up 1, follow-up 2, and follow-up 3, respectively]; (ii) medium/stable [n = 165; mean adherence levels = 63.5% (24.8), 60.2% (24.7), and 58.4% (23.9)]; and (iii) low/decreasing [n = 65; mean adherence levels = 23.2% (23.8), 26.8% (26.4), and 16.3% (20.5)]. The validity of the trajectories was demonstrated by their associations with disease outcomes: participants with undetectable viral load and greater CD4 counts were more likely to be in the high/stable or medium/stable groups than the low/decreasing group ($p<.05$).

Conclusions: Results suggest three distinct adherence trajectories with different predictors, and two trajectories emerged among those with lower adherence. Interventions to improve adherence need to take into account the dynamic nature of adherence over time.

255 Patient Perceptions of Socio-Environmental Barriers to HIV Care in the US South through a Geospatial Lens: A Qualitative Analysis

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Background: Late entry into HIV care is a critical problem. The 2015 National HIV/AIDS Strategy called for linkage to care within 90 days of diagnosis. Spatially targeting interventions to neighborhoods where HIV patients poorly link to care may maximize resource allocation. We aimed to characterize socio-environmental barriers to HIV care perceived by HIV-infected persons residing in community "hot spots" of delayed linkage.

Methods: Of HIV cases diagnosed in 2012 reported to Georgia Department of Public Health, patients with poor/delayed linkage to care were defined by absent CD4 or HIV viral load by 90 days. We used spatial cluster analysis to identify areas of poor linkage (SatScan 9.4.2). During 2014-2016, we recruited newly diagnosed HIV patients in cluster areas in Fulton and Dekalb counties and conducted semi-structured in-person interviews at least 90 days after diagnosis. Interviews were transcribed and coded for analysis (NVivo 9.0). Codes and themes were developed deductively (informed by the social-ecological model) and inductively.

Results: We identified seven significant clusters of poor HIV linkage in study counties and enrolled 40 newly-diagnosed HIV positive patients for in-person interviews. Six could not be interviewed: two died; three declined continued participation; one could not be found. Of 34 participants interviewed, 89% were black, 71% men, and 34% with illicit drug use. Three consistent socio-environmental HIV linkage barriers emerged: (1) local hospital/clinic processes; (2) transportation; and (3) community stigma.

Conclusions: Our study describes barriers to HIV care beyond those reported by clinic patients, as some participants diagnosed in the community did not ultimately link to HIV care by the time of our interview, and many were interviewed near their home rather than in a healthcare setting. By interviewing HIV-positive residents of areas with known poor linkage to HIV care about recent environmental barriers, we capture specific intervenable barriers in the US South.

262 Intersecting Stigmas Impact Retention in Care and Medication Adherence among Drug-Involved PLWH

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Background: Among people living with HIV (PLWH), drug-involved individuals are the population least likely to reach virologic suppression and to be retained in HIV-care. It is widely known that HIV-related stigma adversely affects clinical outcomes of HIV disease through treatment avoidance and delay, suboptimal antiretroviral (ART) medication adherence, and increased risk behaviors. An emerging body of literature has revealed that drug-involved PLWH may experience multiple stigmas, but little is known about the impact that intersecting stigmas may have on ART medication adherence and retention in HIV-care. There is an urgent need to understand substance use (SU)-stigma, and its intersection with HIV-stigma, to improve HIV-related outcomes in this vulnerable population.

Methods: This study presents qualitative findings from six focus groups (three male groups and three female groups) with PLWH who report substance use and were recruited from an outpatient, university-affiliated, HIV clinic in the Southeastern United States. Each group was audio-recorded and transcribed verbatim. Data were analyzed using an inductive 2-cycle coding approach, utilizing NVivo software.

Results: Results suggest that HIV-related stigma directly impacts ART medication adherence and retention in care in this population through stigma avoidance strategies (hiding medications and clinic avoidance). Participants reported that SU-stigma (but not HIV-stigma) is commonly encountered within the HIV specialty care environment and impacts medication adherence by limiting effective patient-provider communication. Participants reported that SU-stigma from their HIV care provider impacted their willingness to discuss drug use as a barrier to ART adherence, as well as their provider's willingness to identify medication regimens suitable to their current lifestyle.

Conclusions: These findings suggest that SU stigma in the HIV primary care setting may be an important barrier to adherence and engagement in care, and should be considered as a relevant intervention target when developing interventions to improve HIV outcomes for this vulnerable population.

269 "We Need This!": PrEP Awareness and Acceptability Among Women Involved in the Criminal Justice System

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Background: Although pre-exposure prophylaxis (PrEP) is a key tool in HIV prevention efforts, little is known about PrEP as a prevention strategy for women at high risk of HIV acquisition in the United States, especially those in the criminal justice (CJ) system.

Methods: We conducted semi-structured, one-on-one interviews with women (18-64 years) on probation in San Francisco who endorsed at least one recent risk factor for HIV-acquisition that would make them potentially eligible for PrEP (e.g., condomless vaginal/anal sex, sex with an HIV-positive partner). Purposive sampling was used to create a sample where roughly half of the participants reported recent injection drug use (IDU). Interviews topics included awareness of and attitudes towards PrEP, PreP adherence, potential referral and linkage programs, and perceptions of barriers and facilitators to PrEP use. Inductive thematic analysis was used to identify common themes.

Results: To date, one-third (n=10) of the sample has been recruited and interviewed. Average age was 40 years and 60% identified as Black. With the exception of women with IDU history, women were generally unaware of PrEP. Regardless of IDU status, attitudes towards PrEP were overwhelmingly enthusiastic. Medication side effects, concerns about daily adherence, and, for women not currently engaged in the healthcare system, not having a regular healthcare provider were identified as barriers to PrEP uptake. Facilitators were having insurance or an existing relationship with a trusted healthcare provider, and PrEP being an HIV-prevention method that women can control without partner negotiation.

Conclusions: Despite low awareness of PrEP, women involved with the CJ system expressed positive attitudes towards PrEP. HIV prevention efforts targeting women at high-risk of HIV acquisition should include education to increase PrEP knowledge and awareness of access points, and incorporate navigation services tailored to the unique needs of high-risk women unengaged in the healthcare system.

270 HIV Prevention Continuum among MSM in New York City (NYC), Spring 2016

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Background: Pre-exposure prophylaxis (PrEP) uptake is increasing among men who have sex with men (MSM), yet gaps remain. The health department has launched programs to boost both use and prescribing. To monitor stepwise factors, we constructed an HIV Prevention Continuum (HPC) and, among PrEP non-users, we explored interest and reasons for non-use.

Methods: Data were derived from a Spring 2016 survey. Recruitment occurred through venues and websites/apps. Eligible respondents were sexually-active NYC MSM, aged 18-40. Those included in the HPC were PrEP-eligible by guidelines: HIV-negative with any of the following (previous 6 months): condomless anal sex; stimulant or injection drug use; transactional sex; PEP use; HIV-positive sexual partner; or STI diagnosis in the past year. The HPC included 4 steps beyond PrEP eligibility, over the previous 6 months: (1) provider visit, (2) sexual history taken by provider, (3) discussed PrEP with provider, (4) used PrEP. Each step uses PrEP-eligible respondents as the denominator. Differences by race/ethnicity (black /Hispanic/white/other) for each step were examined using age-adjusted regression models. Among non-users, interest was dichotomized and reasons for non-use were from a multi-select question.

Results: Data from 677 PrEP-eligible MSM generated the HPC. Overall, 83%, 69%, 53% and 30% reported a provider visit, sexual history taken, discussion of PrEP with provider and PrEP use, respectively. Only sexual history differed significantly by race/ethnicity ($p<0.05$), with higher report among black MSM (79%). Among non-users, 62% (n/N=240/386) were interested in PrEP (no difference by race/ethnicity). Top reasons for non-use were insurance/financial issues (33%), concern about side effects (26%), insufficient information (18%) and lower risk perception (14%).

Conclusions: Using a new framework, we observed high engagement in prevention among NYC MSM with major drop-offs in discussing or using PrEP. These drop-offs plus reasons provided for non-use reveal barriers in access and knowledge gaps, underscoring the importance of PrEP outreach and navigation.

272 Behind the HIV Care Continuum: Longitudinal HIV Care Trajectories in North Carolina

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Background: Long-term HIV care engagement is required for optimal clinical and transmission prevention outcomes, but longitudinal care patterns are poorly understood. We used ten years of HIV primary care visit data from the University of North Carolina (UNC) HIV Clinical Cohort to: 1) identify a set of distinct HIV care trajectories followed from the time of HIV care entry, and 2) assess demographic predictors of each trajectory.

Methods: We conducted a retrospective cohort study of all persons newly entering HIV care at UNC between October 10, 2004 and October 10, 2012 (N=1319), following them longitudinally through death or October 10, 2014. The outcome of interest was HIV primary care visit attendance (yes/no) in each six-month interval after entry. We used group-based trajectory modeling to identify a set of longitudinal HIV care patterns and examine associations between each pattern and race/ethnicity, age, and transmission risk group.

Results: We identified five distinct HIV care trajectories: ~35% of patients had consistently high care attendance over time (>82% probability of attendance in each interval); ~20% exhibited a rapid decline within 18 months to a sustained, low probability (<5%) of attendance; ~17% showed a very slow decline in attendance; ~17% had an intermediate rate of decline; and ~11% showed initially weak attendance with a steady increase starting ~2 years after entry. Older age at entry was protective against all sub-optimal trajectories (with the "consistently high" pattern as referent), and MSM status was protective against the "rapidly declining" pattern.

Conclusions: Most new entrants to HIV care exhibited sub-optimal HIV care trajectories, but the longitudinal pathways varied widely. The insights provided by this analytical approach can inform the design of HIV epidemic models and the targeting and timing of interventions, with the ultimate goal of improving HIV care continuum outcomes for maximal clinical and transmission prevention benefits.

275 SMS Support Increases PrEP Retention and Adherence among Young MSM and Transgender Women in Chicago

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Background: Young men who have sex with men (YMSM) and transwomen (TW) are among the highest at-risk for HIV in the US. While PrEP has demonstrated efficacy, adherence has been low among YMSM and TW. We developed a youth-tailored, SMS-based PrEP support intervention (Prepmate) and evaluated its acceptability and impact among YMSM and TW in Chicago.

Methods: HIV-uninfected YMSM/TW aged 18-29 initiating PrEP within Chicago's safety-net system were offered enrollment in the Enhancing PrEP in Community (EPIC) Study. Participants were offered 36 weeks of PrEP and randomized (2:1) to receive Prepmate (weekly SMS check-ins and daily reminders during PrEP start-up) or control (counseling by health educator). Adherence was measured by tenofovir diphosphate (TFV-DP) levels in dried blood spots at 4, 12, 24, and 36 weeks. The impact of Prepmate on study-visit attendance and adherence was evaluated using GEE logistic models with robust standard errors.

Results: From 4/2015-3/2016, 121 participants (95% MSM, 5% TW) enrolled. Mean age was 24; 37% were Latino, 28% Black, 25% White, 7% Asian/Pacific Islander. Most (76%) had some college education and 78% were insured. At baseline, mean number of anal sex partners was 7, 71% reported condomless anal sex, and 21% had an STI. Participants who received Prepmate were more likely to attend study visits (86% Prepmate vs. 71% control, OR=2.6, 95%CI 1.2-5.5, p=0.01) and more likely to have protective TFV-DP levels consistent with ≥4 doses/week (73% Prepmate vs. 59% control, OR=2.0, 95%CI 1.1-3.9, p=0.04). Prepmate efficacy did not differ significantly by age, race/ethnicity, education, or insurance. Overall, 88% reported Prepmate to be very/somewhat helpful, 83% wanted to continue using it after the study, and 92% would recommend Prepmate to others.

Conclusions: Prepmate had high acceptability and increased PrEP retention and adherence among diverse YMSM/TW. Strategies to integrate SMS-support into PrEP delivery settings for youth should be explored.

276 Effectiveness of a Cell Phone Counseling Intervention on PMTCT Retention, Adherence to Treatment, and Uptake of Early Infant Diagnosis and Pregnancy Related Services in Kisumu, Kenya: A Randomized Controlled Study

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Background: We evaluated the effectiveness of a structured, counsellor-delivered, cell-phone counseling intervention to promote retention in care, adherence to antiretroviral treatment, and uptake of pregnancy relate services and HIV testing of infants at 6 weeks, among HIV-positive pregnant women compared to standard care in Kisumu, Kenya.

Methods: 404 HIV-positive pregnant women, between 14-36 weeks gestation, were recruited into the longitudinal study and randomly assigned to the intervention (n=207) or control arm (n=197). Retention was assessed at delivery, at 6 and 14 weeks postpartum.
The intervention comprised a fixed protocol of counsellor-delivered phone-calls to provide one-to-one need-based support: two calls in the first week after enrolment, weekly calls until delivery, two calls in the week after delivery and weekly calls until 15 weeks postpartum. The control group received routine/standard care.

Results: Retention was higher in the intervention arm at delivery (I: 95.17% vs. C: 77.66%); at 6 weeks postpartum (I: 93.9% vs. C: 72.9%) and at 14 weeks postpartum (I: 83.3% vs. C: 66.8%) compared to the control arm (p90% at delivery, at 6-weeks and 14-weeks postpartum, respectively.

Conclusions: The cell phone counselling intervention was effective in retaining study participants at all three outcome time points. The antenatal and postnatal care attendance rates and HIV testing of infants were also higher among participants in the intervention arm compared to the control arm. The phone counselling offers a practical approach to reach and retain HIV-positive pregnant mothers in care.

277 HIV+ Participants in the Mobile Outreach and Retention (MORE) Program in Washington, DC, with Co-Morbid Mental Health and/or Substance Abuse Diagnoses are Significantly less likely to Achieve Viral Suppression despite Comprehensive Support Services

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Background: Viral suppression of HIV improves health outcomes for the individual and decreases HIV transmission within the community. A clearer understanding of the factors associated with individual viral suppression is crucial to the development of successful HIV treatment programs. MORE is a novel community health program designed to ameliorate barriers to the achievement of viral suppression in high risk HIV+ patients at Whitman-Walker Health, Washington, DC. The MORE team is composed of health care providers (HCP), care navigators (CN) and community health workers (CHW) who offer support services and medical visits inside and outside the clinic.

Methods: 202 HIV+ patients with no medical visit in the last 6 months and/or a viral load >200 copies/ml were enrolled between December 2015 and November 2016 after an EMR review. Level of MORE intervention was self-selected by patient and defined as: Low ≤3 months with CHW/CN support; Medium=declined home visit but received increased CN/CHW support; Full=home visits with HCP and increased CN/CHW support. Demographic characteristics, medical history and lab values were collected from EMR and cross-tab analyses were conducted for unsuppressed participants with 2 or more viral load values (n=72) comparing achievement of viral suppression with potential contributing factors.

Results: Of 72 unsuppressed participants, 50/72 (69.4%) had not achieved viral suppression (<20 copies/ml) and 38/50 (76.0%) of these individuals had co-morbid mental health/substance abuse diagnoses as compared to 12/50 (24%) without (p=0.01). This relationship was consistent across all MORE groups although the Full MORE group had a higher percentage of participants with mental health/substance abuse diagnoses.

Conclusions: Participants with mental health and/or substance abuse diagnoses were significantly less likely to achieve viral suppression, despite receiving increased support services through MORE. This finding highlights the need to explore strategies to encourage better medication adherence among HIV+ patients with mental health/substance abuse issues and improve access to behavioral health services.

278 Cash versus Food Assistance to Improve Adherence to Antiretroviral Therapy among HIV-Infected Adults in Tanzania: A Randomized Trial

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Background: We evaluated the effectiveness of short-term cash and food assistance to improve adherence to antiretroviral therapy (ART) and retention in care among people living with HIV (PLHIV) in Tanzania.

Methods: At three clinics, 805 participants were randomized to three groups in a 3:3:1 ratio, stratified by site: nutrition assessment and counseling (NAC) plus cash transfers (~$11/month, n=347), NAC plus food baskets (n=345), and NAC-only (comparison group, n=113, *clinicaltrials.gov* NCT01957917). Eligible PLHIV were: ≥18 years, initiated ART ≤90 days prior, and food insecure. Cash or food was provided for ≤6 consecutive months, conditional on visit attendance. The primary outcome was medication possession ratio (MPR) ≥95% at 6 months. Secondary outcomes were appointment attendance and loss to follow-up (LTFU) at 6 and 12 months.

Results: The primary intent-to-treat analysis included 800 participants. Achievement of MPR≥95% at 6 months was higher in the NAC+cash group compared to NAC-only (85.0% vs. 63.4%), a 21.6 percentage point difference (95% confidence interval (CI): 9.8, 33.4, p<0.01). MPR≥95% was also significantly higher in the NAC+food group versus NAC-only (difference=15.8, 95% CI: 3.8, 27.9, p<0.01). When directly compared, MPR≥95% was similar in the NAC+cash and NAC+food groups (difference=5.7, 95% CI: -1.2, 12.7, p=0.15). Compared to NAC-only, appointment attendance and LTFU were significantly higher in both the NAC+cash and NAC+food groups at 6 months. At 12 months, the effect of NAC+cash, but not NAC+food, on MPR≥95% and retention was sustained.

Conclusions: Short-term conditional cash and food assistance improves ART possession and appointment attendance and reduces LTFU among food-insecure ART initiates in Tanzania.

281 Alternative Facts: Adherence to an Electronic Monitoring Device (Wisepill) does not always Reflect Adherence to Medication

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Background: Antiretroviral therapy (ART) non-adherence is a critical public health challenge. Electronic monitoring devices (EMDs), e.g., Wisepill, can provide objective, real-time measurement of adherence if people use them as directed. To understand the extent to which low adherence measured by EMD output may be due to low device use rather than low rates of medication ingestion, we examined the first 12 months of Wisepill use among virally suppressed ART-initiators.

Methods: Using group-based trajectory modeling, we examined Wisepill use, and demographic and psychosocial predictors of use, among virally suppressed participants in Masivukeni, a behavioral intervention to improve adherence among ART-initiators in Cape Town, South Africa city health clinics. Participants were defined as Wisepill adherent for a given month if the number of device openings divided by prescribed doses was ≥80% and virally suppressed if their HIV RNA viral load was

Results: The proportion of participants who, despite being virally suppressed, were Wisepill adherent was low, decreasing from 75% to 36% over the course of the study. Participants followed one of three Wisepill-adherence trajectories: 28% had a consistently high probability of being adherent, 30% had a steadily decreasing probability of being adherent, and 41% had a rapidly decreasing probability of being adherent, which dropped close to 0% after month 6. Participants who were younger (p=0.009) or who experienced ≥1 recent adverse life event (p = 0.02) were significantly more likely to be in the latter two trajectory groups.

Conclusion: Only a small proportion of study participants opened their Wisepill ≥80% of expected times despite being virally suppressed, suggesting that adherence measured by EMDs may not always reflect medication ingestion. These findings highlight the importance of distinguishing between device versus medication adherence, and the need for biological measures of adherence beyond viral load (e.g., biomarkers of drug ingestion).

282 Determining the Roles that Illicit Drugs, Marijuana, and Heavy Drinking Play in PrEP Medication Adherence among Gay and Bisexual Men: Implications for Treatment

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Background: Drugs and alcohol have been documented to impact medication adherence in HIV-positive gay and bisexual men (GBM), but there is little parallel research investigating their impact on PrEP adherence in HIV-negative GBM.

Method: Between 2015-2016, 104 PrEP-using GBM—by design, half were club drug (i.e., ketamine, MDMA/ecstasy, GHB, cocaine, methamphetamine) users—completed a 30-day time-line follow-back interview assessing medication adherence and substance use. We conducted multilevel logistic regression with random intercept and specified missed PrEP as the day-level outcome. Predictors included both individual-level (i.e., club drug user, age, white race, college education, and relationship status) and day-level (i.e., illicit drug use, marijuana use, and heavy drinking) variables.

Results: Mean age was 32.8 and 63.5% of participants had been taking PrEP for less than one year. Half of participants were men of color. Overall, men were highly adherent (*M*=1.6, SD=3.0 missed doses in past 30 days). College education was the only significant individual-level factor (AOR=0.46, *p*=0.02)—college-educated men had lower odds of a missed PrEP dose on an average day. Day-level predictors indicated that using illicit drugs (AOR=1.88, p=0.04) and marijuana (AOR=1.89, p=0.04) were independently associated with greater odds of a missed PrEP dose, while heavy drinking was not.

Conclusion: Although adherence in the sample was overall high, illicit drug and marijuana use significantly increased the odds of missing a PrEP dose. Intervention strategies co-targeting substance use and PrEP adherence may be warranted.

285 PROACTive Linkage, Retention, Re-Engagement, and Adherence Program in Broward County, Florida

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Background: According to the Centers for Disease Control and Prevention (CDC), in 2015 Broward County had the second highest diagnosis of human immunodeficiency virus (HIV) infection case rate and by year-end 2014, the highest prevalence rate of diagnosed HIV in the United States (US). In 2015, there were 657 reported new HIV infection cases with 87% linked to care but only 68% of the estimated 19,585 individuals living with HIV are currently retained in care in Broward County.

Method: The Florida Department of Health in Broward County (DOH-Broward) has created PROACT (Participate, Observe, Adhere, Communicate and Teamwork), a linkage, retention, re-engagement and adherence program for newly identified and previously diagnosed HIV positive individuals that consists of 7 HIV Disease Intervention Specialists (DIS), 2 Perinatal and Congenital Syphilis DIS, 3 Linkage Coordinators, 1 Perinatal Coordinator, and 1 Modified DOT Nurse. HIV positive individuals are referred to PROACT through DOH-Broward contracted providers, community-based organizations, HIV care providers and the local Ryan White Part A program. Newly and previously diagnosed HIV positive individuals referred to PROACT have a 95% and 96% (respectively) linkage rate within 90 days, which is higher than the county rates.

Results: Establishing PROACT has facilitated the provision of seamless services for newly and previously diagnosed HIV positive individuals. PROACT can improve outcomes across the HIV Continuum of Care, starting with linkage to care. Monitoring outcomes across the continuum is necessary to be able to evaluate program effectiveness.

Conclusion: A comprehensive linkage, retention, re-engagement and adherence program should be established, especially in high HIV morbidity areas, to successfully engage HIV positive individuals into care. Specialized positions within a program such as PROACT facilitate the effective provision of services. The utilization of a tailored data-base is part of the necessary program infrastructure.

296 PrEP in the Real World: Predictors of 6-Month Retention in a Diverse Urban Cohort

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Background: The effectiveness of HIV pre-exposure prophylaxis (PrEP) depends on adherence, which requires retention in PrEP care. Beyond specialized programs, there are limited data on predictors of retention in PrEP care in real world clinical settings. Therefore, we sought to examine factors associated with retention in PrEP care among individuals in a large urban health system.

Methods: Using a clinical database, we identified HIV-negative adults prescribed PrEP from 2011-2015 within a large integrated health system in the Bronx, New York. Baseline characteristics were obtained via manual chart review; longitudinal prescription and clinical follow-up data were collected through August 1, 2016. The primary outcome, 6-month retention in PrEP care, was defined as having either a new PrEP prescription or PrEP clinical encounter at 180 ±60 days after initiating PrEP. We used multivariable logistic regression to identify factors independently associated with our outcome using a model that included covariates significant ($p<0.10$) in bivariate analysis.

Results: Among 107 patients, median age was 28 years (range 19 – 63); 69% were male; 36% Hispanic; 26% Non-Hispanic Black; 37% heterosexual; 54% had an HIV+ sexual partner; and 52% were prescribed PrEP in a primary care setting. 16% had provider documentation of PrEP discontinuation; the most common reason was perceived change in HIV risk. There was one seroconversion and one death. Retention at 6 months was 64%. In the multivariable analysis, Hispanic ethnicity (vs. non-Hispanic, aOR 3.68, 95% CI 1.14–11.8) and receiving PrEP in a primary care setting (vs. non-primary care settings, aOR 3.87, 95% CI 1.11–13.4) were positively associated with 6-month retention.

Conclusions: Our findings suggest retention in PrEP care may be more durable when initiated in a primary care setting. Larger prospective studies are needed to better evaluate the patient and health system factors associated with long-term engagement in PrEP care.

298 Bioavailability of Co-Encapsulated Antiretrovirals with Ingestible Sensor for Measuring Adherence

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Background: Antiretroviral (ARV) adherence measured by self-report, pill counts, and electronic pill bottle provide inferred measures of drug intake with no real-time notification. The Proteus Digital Health Feedback Device (PDHFD) overcomes these limitations using ingestible sensors co-encapsulated with ARVs. We assessed the bioequivalence of co-encapsulated ARVs with an ingestible sensor, which is needed prior to studying the impact of PDHFD with active feedback in study participants.

Methods: The bioavailability of co-encapsulated ARVs with ingestible sensor was assessed for common ARVs including emtricitabine(FTC)/tenofovir(TFV) disoproxil fumarate(TDF), efavirenz (EFV)/FTC/TDF, abacavir(ABC)/lamivudine(3TC), ABC/3TC/dolutegravir(DTG), TFV alafenamide(-TAF)/FTC/rilpivirine(RPV), elvitegravir (EVG)/cobicistat(COBI)/FTC/TAF and FTC/TAF with six patients on each for ≥12 weeks with undetectable viral loads. Peak plasma concentration (Cmax), time to reach max concentration (Tmax), and area under concentration versus time curve within 24 hours (AUC) measured by LC-MS/MS at pre-dose, 1, 2, 4 and 6 hours post dose were compared with historical data.

Results: We have completed analyses for ABC/3TC/DTG, EFV/FTC/TDF, and FTC/TDF. The mean values are shown in the Table along with historical estimates in parentheses. Analyses of other ARVs are underway.

Components	Tmax (hr)	Cmax (ng/mL)	AUC (ng*hr/mL)
Coformulation ABC/3TC/DTG			
ABC	2.31 (NA)	3352.83 (4260±1190)	12107.6 (11950±2510)
3TC	3.15 (3.2±1.3)	1902.67 (2040±540)	15904.90 (8870±1830)
DTG	4.15 (3-5)	3657.17 (3670, 20%CV)	50384.94 (53600, 27%CV)
Coformulation EFV/FTC/TDF			
EFV	3.67 (3-5)	6027.17 (3190±915)	106772 (45500±18051)
FTC	1.67 (1-2)	1467.33 (1800±720)	11025 (10000±3120)
TFV	2 (1±0.4)	299.98 (296±90)	3134 (2287±690)
Coformulation FTC/TDF			
FTC	3.01 (1-2)	1228.85 (1800±720)	9286 (10000±3120)
TFV	3.01 (1±0.4)	193.97 (296±90)	2218 (2287±690)

Conclusions: The pharmacokinetic characteristics of co-encapsulated TDF/FTC/EFV and ABC/3TC/DTG are comparable with historical data. The difference observed for FTC/TDF is small and likely due to different fasted/fed conditions, random variation, or an effect of co-encapsulation. Further investigations of this regimen are underway. These results will inform the use of co-encapsulated ARVs with sensors for future HIV research.

303 Reducing Race and Age Disparities in PrEP: Lessons from the SPARK Demonstration Project

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Background: Data from PrEP trials and demonstration projects indicate poorer PrEP adherence and persistence rates among younger patients (those under 25) and participants of color. However, little research has been conducted investigating the mechanisms behind such disparities, especially mechanisms amenable to intervention. This analysis examined age and race/ethnicity differences in PrEP adherence in a community-based demonstration project to identify potential mechanisms for addressing disparities.

Methods: Participants were 300 MSM/TW patients at a community health center (age 18-63; 51% people of color; 10% under 25) who chose to start PrEP through the SPARK demonstration project. Participants completed quarterly self-report surveys, and adherence was monitored using dried blood spot testing at 3, 6, and 12-month visits.

Results: Overall, 75% of patients persisted on PrEP through 12-month follow-up, with no differences by age or race. Youngest patients (18-24) did not exhibit lower adherence at any time point; at 12-month follow-up, 86.4% of 18-24 year olds had TDF levels ≥700 fmol (median = 1,248). At 6- and 12-months, Black participants demonstrated slightly lower adherence compared to whites; however, median TDF levels were still extremely high (1,181 vs. 1,358, p= .03), and 77% of Black participants had ≥700 fmol at both time points. Adherence was not associated with substance use, mental health, or risk perception. Adherence was associated with adherence self-efficacy (p<.02) and perceived sensitivity to medication (p = .03). In a multivariate model predicting adherence ≥700 fmol at 12-months, adherence self-efficacy was the only significant predictor (p<.001), and race differences were not longer significant.

Conclusions: Age/race disparities in PrEP persistence and adherence can be minimized, and SPARK included several specific program design elements that can be replicated in other settings. Interventions targeting adherence self-efficacy can be integrated into PrEP programs and may be critical for supporting patients.

306 The Shikamana Intervention to Promote Adherence among Kenyan Gay, Bisexual, and other Men who have Sex with Men (GBMSM): A Pilot Randomized Trial

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Background: GBMSM living with HIV infection in rights-constrained settings may need assistance adhering to antiretroviral therapy (ART). The *Shikamana* intervention combines motivational interviewing by providers with support from trained HIV-positive peers to promote ART adherence among GBMSM. Our objective was to assess intervention safety, acceptability, feasibility, and initial effect size in a pilot randomized trial.

Methods: HIV-positive Kenyan GBMSM enrolled in the *Shikamana* intervention or standard care (didactic counseling and support groups). In the intervention, providers used a modified "Next Step Counseling" (NSC) approach to engage men in problem-solving. Trained peers with ART experience met regularly in person or by phone/texting with assigned patients. Men attended six monthly study visits after enrolment. Generalized estimating equations were used to evaluate differences across groups, taking into account intra-individual correlation.

Results: Sixty men enrolled, with 27 (45%) assigned to the intervention and 33 (55%) to standard care. Baseline characteristics did not differ across groups. Three intervention participants withdrew from the peer component but continued NSC, while 24 peer-patient pairings (89%) were successful. No study-related adverse events occurred. In participant and staff/peer exit interviews, feedback on acceptability and feasibility was positive. Retention and visit attendance did not differ by group. Compared to standard care, intervention participants rated higher both how well they took their ART (mean 4.80 /6 vs. 4.41/6, p=0.002) and how often they took their ART as prescribed (mean 5.25/6 vs. 4.83/6, p=0.001). Plasma viral load suppression at month 6 was 82.6% in the intervention group and 71.4% in the control group (p=0.35). Analyses of MEMS data and baseline and month 3 viral load testing will be completed by June.

Conclusions: The *Shikamana* intervention appears to be safe, acceptable, and feasible, and may increase ART adherence among Kenyan GBMSM. Additional analyses and a larger trial to evaluate efficacy are needed.

315 Preliminary Validation of Unannounced Telephone Pill Count Adherence Data from Perinatally HIV-Infected Adolescents and Young Adults

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Background: Unannounced telephone pill counts are an objective ART adherence measurement tool, requiring less up front cost than electronic monitoring devices and with potential for assessing adherence behaviors. The procedure has been validated with behaviorally-infected, primarily middle-aged adults, but validity of data from older adolescents and young adults (YA) has not been established. Given the increasing numbers of HIV+ YA – particularly those with perinatal HIV infection (PHIV) outside the U.S. – and their increased risk for sub-optimal adherence, validating relatively low-cost ART adherence measurement tools is important for both assessment and treatment.

Methods: Data come from CASAH-3, a longitudinal cohort study of YA with PHIV with ongoing recruitment. Monthly unannounced telephone pill counts were completed to obtain adherence scores, i.e., proportion of prescribed doses taken (0-100%). Results of viral load (VL) tests conducted after, but within 60 days of the pill count assessment were abstracted from medical charts. A generalized linear model with generalized estimating equation was used to assess the association between adherence scores and VL$\leq$20 vs. >20copies/ml.

Results: Participants were on average 22 years old, 66% female, 56% African American/Black, and 59% Hispanic/Latino. Average pill count adherence was 75%, and 55% had VL$\leq$20 copies/ml. A total of 78 pill count scores from 41 participants could be linked to VL measured within 60 days. Participants with VL$\leq$20 had significantly greater mean adherence scores, 84% vs. 66% (p=.018).

Conclusions: These findings suggest that unannounced telephone pill counts are a valid measure of ART adherence and can predict virologic suppression among YA with PHIV. Additional validation with a larger sample and other objective measures of adherence, such as tenofovir diphosphate levels, is needed. This procedure could be tested with YA with PHIV in resource-limited settings outside of the U.S., where mobile phone use is high, but access to virologic testing is limited.

318 Linkage to Care and Initiating ART after Diagnosis with Acute or Established HIV Infection in 6 US Emergency Departments

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Background: Recent HIV testing algorithms are optimized to detect acute HIV infection (AHI) in addition to established infection. Despite increased HIV testing in emergency departments (EDs), rates of linkage to care and initiation of ART for persons diagnosed with AHI and established infection after ED screening are unknown.

Methods: We gathered retrospective data from 6 EDs across the US that initiated routine HIV screening with an antigen-antibody immunoassay between November 2012 and July 2015. Supplemental testing was performed using an HIV-1&2 antibody differentiation assay when the screening test was positive, and HIV RNA nucleic acid amplification tests (NAAT) when the screen was positive but the differentiation assay was negative. Established infection was defined as positive immunoassay and a positive differentiation test, while AHI was defined as a positive immunoassay, negative differentiation test, and positive NAAT. Dates to linkage to care (the first visit outside the ED with an ART prescribing provider) and initiation of ART (date of prescription) were recorded from medical records.

Results: Of 605 persons newly diagnosed with HIV, 98 had AHI and 507 had established infection. Most persons were male (65.5%) and racial/ethnic minority (Black 64.3% and Hispanic 16.9%). Persons with AHI were younger than those diagnosed with established infection ($c^2(5)=15.09$, p=.02). At 30, 90, and 180 days, persons with AHI had higher rates of linkage to care (55%,71%,74%) and having ART prescribed (42%,64%,67%) than were persons diagnosed with established HIV (linked: 34%,55%,58%; prescribed ART: 21%,48%,52%; all p<.005).

Conclusion: Persons diagnosed with AHI in these 6 urban EDs have better and earlier linkage to care and ART prescription rates compared with persons newly diagnosed with established HIV. Lessons learned from successes in persons with AHI could be applied to persons newly diagnosed with established infection in EDs to improve linkage to care and initiation of ART.

337 Health Department/HIV Clinic Collaboration Improves Re-Engagement in Out-of-Care Persons

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Background: Retention in care remains the greatest challenge of the HIV care continuum. Health department (HD) partnership with HIV clinics is an innovative method to identify HIV-infected persons who are out-of-care (OOC) and critical to re-engagement interventions.

Methods: Monthly, clinics generated a list of patients with a clinic visit and laboratory test in a 12-month qualifying period. OOC status (missing lab and/or visit in the last 6 months) was determined using data from surveillance data. Possible OOC patients were discussed with providers to reconcile status. Eligible OOC patients were randomized to either clinic re-engagement efforts or an active field-services intervention. A list of eligible patients was returned to the clinic; intervention assignees were contacted to receive modified Antiretroviral Treatment Access Services by HD staff. Chi-square tests determined if the groups differed significantly for linkage to care defined as a clinic visit and CD4/Viral Load measured at 30, 60 and 90 days.

Results: A total of 4,768 unique individuals were processed on monthly lists from 3 clinics between 5/1/16-7/31/16. 3.04% were excluded due to death, imprisonment (1.53%), outmigration (12.33%), transferred care (7.86%), and evidence of care (64.51%). Those remaining after initial surveillance match (n=657) were brought to case conference for further eligibility determination. In total, 287 OOC patients were randomized; 144 to the intervention and 143 to the control arm. Intervention subjects were significantly more likely than the controls to link-to-care within 30 days (p=.008), 60 days (p=.001), and 90 days (p=.011) (Table 1).

Conclusions: HD collaborations with clinics to identify OOC HIV-infected persons is feasible. Historically, HD re-engagement efforts using surveillance data only have yielded poor re-linkage rates. However, our results indicate that collaboration can significantly improve the effectiveness of interventions to re-engage these individuals in HIV care. Further evaluation is needed to see if these successes translate into improved retention in care and viral suppression.

Time to Linkage by Assignment Group

Time to Linkage	Intervention Group N=144 (%)	Control Group N=143 (%)	p-value
30 days	47 (32.64)	27 (18.88)	0.008
60 days	69 (47.92)	42 (29.37)	0.001
90 days	77 (53.47)	55 (38.46)	0.011

359 "No Estás Solo" (You are Not Alone): Culturally Tailored Interventions to Support HIV Medication Adherence among Clients of Mexican and Puerto Rican Origin

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Background: As part of HRSA's Special Projects of National Significance (SPNS) Latino Access Initiative, 10 demonstration sites across the US are implementing innovative interventions using a transnational framework and culturally-appropriate strategies to engage, retain and achieve viral suppression among Mexicans and Puerto Ricans living with HIV. Interventions are currently being implemented. As the cross-site Evaluation and Technical Assistance Center for this initiative, we are investigating the barriers and facilitators to care engagement, including antiretroviral (ART) medication adherence.

Methods: We describe changes in self-reported adherence ability and missed doses at 6 months using quantitative survey data collected from 590 clients of different sexual and gender orientations of Mexican and Puerto Rican origin participating in the interventions above. We also use qualitative interview data from clients and intervention providers to describe barriers and facilitators.

Results: Overall, 32% of clients had been prescribed ART at baseline; by the 6-month visit, 49% had been prescribed ART. After 6 months in the study, the number of clients who said they had not missed any doses of their HIV medications increased from 8% to 44%, while those who rated their adherence ability as "excellent" improved from 16% to 39%. Interventions facilitated adherence by leveraging a strengths-based approach combined with health education and literacy in culturally-tailored sessions to instill a sense of hope, provide emotional support, and help motivate people to stay in treatment. Interventionists foster feelings of trust and kindness and have developed rapport and friendship or familiar bonds with their clients. Overall, while clients were close with their families either in the US, Mexico or Puerto Rico, these relationships were sometimes a barrier to care engagement. Some clients feared HIV-status disclosure because of HIV stigma or because they did not to worry their families. Others said they did not want to be seen taking HIV medication, felt they had to hide their medications if living with family or roommates, or, because they had disclosed being gay or transgender, felt they could not also disclose their HIV status.

Conclusions: Culturally-tailored interventions incorporating transnational elements are effective in supporting adherence to HIV medications among Latino populations. Interventions of this kind provide a new and important strategy for supporting care in these particularly hard to reach populations.

375 A Randomized Controlled Trial of a Text Messaging Intervention to Promote Retention in Care and Virologic Suppression in an Urban Safety-Net HIV Clinic: The Connect4Care (C4C) Trial

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Background: Text messaging represents a promising strategy to improve retention in HIV care and antiretroviral adherence (ART), yet little is known about the effectiveness of text messaging interventions with vulnerable urban HIV-infected populations in the United States.

Methods: The Connect4Care (C4C) randomized, controlled trial evaluated the effect of supportive and motivational text messages on virologic suppression and retention in care in a safety-net HIV clinic in San Francisco. Viremic patients who were poorly retained or new to clinic were randomized to an intervention arm of study text messages plus texted primary care appointment reminders for 12 months or a control arm of reminders alone, stratified by new HIV diagnosis. Viral load (VL) was assessed at 6 and 12 months (primary outcome = VL<200 c/mL at 12 months). Virologic suppression rates and intervention:control relative risk (RR) were estimated using generalized estimating equation log-binomial models, adjusted for the stratification factor.

Results: Between August 2013-November 2015, 230 participants were randomized (116 intervention, 114 control), of whom 11% were newly diagnosed, 14% were otherwise new to clinic, and 75% were poorly retained. Median age was 45 years, 83% were male, 52% were black/Latino, and 75% were taking ART. 84% had 12-month VL data. In complete case analysis, 62.6% of intervention and 60.5% of control participants were suppressed, representing negligible change from Month 6 and yielding overall RR =1.03 (95% CI 0.81-1.33, Wald p=0.79). End of trial suppression was higher among newly diagnosed vs. other participants (83% vs 46%, p=<0.001), but intervention effect was similar in this group.

Conclusions: The C4C intervention did not significantly increase virologic suppression, which was higher for newly diagnosed individuals, highlighting the challenge of suppression in patients with a history of poor retention. Model extensions will consider multiple imputation of missing outcomes and mediating effects of retention in care and engagement with study text messages.

380 The Uganda WiseMama Study: A Randomized Controlled Trial Assessing Real-Time Feedback to Improve Adherence to Antiretroviral Therapy among HIV-Positive Pregnant and Postpartum Women

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Background: Adherence to antiretroviral therapy (ART) poses major challenges to HIV-positive pregnant and postpartum women (PPPW). The Uganda 'WiseMama' Study implemented a randomized controlled trial to assess the impact on ART adherence of real-time feedback among PPPW.

Methods: We recruited pregnant women between 12 and 26 weeks of gestation in antenatal care (ANC) and initiating ART at hospitals in Mityana and Entebbe, Uganda. Participants were given a real-time monitoring device for their HIV medications; after one month of monitoring, we randomized participants to intervention (receipt of text message reminders triggered by late dose-taking combined with monthly counseling informed by device-generated adherence data) or comparison (standard care) through three months post-partum. We compared mean adherence and proportion reaching threshold levels (≥95%, ≥80%) levels between the two arms by intent-to-treat analysis.

Results: A total of 133 participants were randomized between July 2015 and February 2016. Participants' mean age was 25.1 years; median gestational age was 22 weeks. The mean time on the intervention was 175 days. Overall mean adherence was low and declined between pre-delivery (68.4%) and post-delivery periods (56.1%) (p=0.0029). Mean adherence was higher among intervention compared to comparison participants (69.2% vs. 67.5%, and 57.8 vs. 54.4%) in pre-delivery and post-delivery periods, respectively, but not significantly. Threshold proportions also declined between periods, from 20.6% to 10.9% (95% threshold, p=0.0371) and 51.9% to 35.3% (80% threshold, p=0.0081). Adherence was generally higher in Mityana than in Entebbe; the between-period decrease in mean adherence remained significant in Mityana (70.1% vs. 57.1% (p=0.02).

Conclusions: Adherence to ART was extremely low in this PPPW population, particularly following delivery. Real-time feedback did not improve their adherence significantly. Relational factors, including non-disclosure of HIV-status to partners, might have weakened intervention effects. This population remains vulnerable and in urgent need of support to ensure effectiveness of HIV treatment.

385 Antiretroviral Adherence over Six Months following Prison Release in a Randomized Trial of the imPACT Intervention to Maintain Suppression of HIV Viremia

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Background: HIV+ inmates receive antiretroviral therapy (ART) in prisons, where prevalence of HIV is disproportionately high compared to the general population. ART adherence following prison release has been observed to be low. The imPACT trial (individuals motivated to Participate in Adherence, Care and Treatment) is the first randomized trial of an intervention aimed to maintain viral suppression in HIV+ individuals released from prison.

Methods: This trial randomized 405 HIV+ inmates awaiting release from prisons in Texas and North Carolina to imPACT (motivational interviewing, text message reminders, and linkage coordination) versus standard care (SC). We examined the effect of the intervention over 21 weeks post-release on ART adherence measured at unannounced monthly telephone pill counts. Continuous adherence was calculated as the proportion of counted pills to expected pills at each telephone count.

Results: Twenty-four participants were withdrawn post-randomization. Of the remaining 381, 302 participants (79%) completed ≥ 1 pill count (median: 3; interquartile range: 2-5). Adherence at week one was 82.2% in the imPACT arm (n=135) and 82.5% in the SC arm (n=130). Over the 6 pill counts, mean adherence ranged from 78.5-84.0% in the imPACT arm and 76.6-84.3% in SC. Average adherence over all pill counts was 80.3% (SD=0.244) and 81.0% (SD=0.246) in the two arms, respectively (ß=-0.7%; 95% CI -0.045, 0.031; p=0.7). 40.9% of all pill counts were missed; of those, 33.9% were missed due to re-incarceration.

Conclusions: Among completed pill counts, ART adherence averaged >80% in both arms through 6 months, a level much higher than that seen with most other chronic diseases, and showed no difference between arms. A substantial number of adherence measures were missing either due to re-incarceration, missed contacts, or attrition. These results suggest that factors independent of the intervention influence ART adherence in this population and should be identified to inform future targeted interventions.

401 Long-Term Viral Suppression in Masivukeni: A Multimedia ART Initiation and Adherence Intervention for Resource-Limited Settings

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Background: Successful ART initiation and long-term adherence with sustained, suppressed viral load (VL) are essential to ending the global HIV epidemic. Masivukeni, a theoretically-derived, laptop-based multimedia behavioral intervention enhances the capabilities of lay counselors in South Africa (SA) to deliver ART adherence counseling and may assist ART initiators in achieving positive health outcomes. Masivukeni is consistent with standard of care counseling (SOC) in SA (3-4 sessions, defaulter follow-up, support partner inclusion).

Methods: We conducted a randomized controlled trial of Masivukeni at two clinics in Cape Town, SA. Patients (N=432) eligible for ART-initiation were randomized 2:1 to Masivukeni or SOC. We collected routine clinic-based VL data at ~4- and up to ~48-months post ART-initiation. We used exact logistic regression to examine the effect of Masivukeni on VL change among those whose first VL was suppressed (<400 copies/mL) and those whose first VL was unsuppressed, controlling for time between VLs.

Results: Of the 432 participants enrolled, 386 had at least two VL results (mean time between first and last VL 21.25 months). Overall, 86% of the sample had suppressed VL at both time points. Among those suppressed at first VL (N=345), 97% were suppressed and 3% unsuppressed at last VL, with no difference between arms. Among those unsuppressed at first VL (N=41), 51% were suppressed and 49% unsuppressed at last VL, with Masivukeni participants more than six times as likely to be suppressed at last VL than SOC participants (OR=6.82, 95% CI: 1.22, 38.16, p=0.03).

Conclusions: Like many adherence intervention studies, most of our participants achieved and maintained viral suppression. However, by helping adherence counselors solidify patient understanding of HIV, its treatment, and the importance of viral suppression through guided interactions and visual aids, Masivukeni shows promise as an efficacious and scalable adherence counseling tool for individuals who fail to suppress initially.

103 The Presence of HIV Associated Neurocognitive Disorders (HAND) is Associated with a Lower Adherence to Combined Antiretroviral Treatment

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Background: HIV-associated neurocognitive disorders (HAND) are defined according to their diagnostic degrees as: asymptomatic neurocognitive impairment (ANI), mild neurocognitive disorder (MND) and HIV-associated dementia (HAD). As high adherence to combined antiretroviral therapy (cART) is required to maintain viral suppression among HIV-infected patients, it is important to investigate the impact of HAND on medication adherence. Our study hypothesis was that patients with HAND had a lower medication adherence than patients who didn't have HAND.

Methods: This was an observational, exploratory, two-centre pilot study of patients who had a state-of-the-art neurocognitive assessment performed between January 2011 and June 2015 while also being followed at their respective adherence clinics. Adherence was measured with electronic monitors (EMS). Patients' socio-demographic characteristics, HIV viral load, and CD4 counts were retrieved from the Swiss HIV Cohort Study (SHCS) database. At each time *t*, implementation was computed as the proportion of patients taking medication as prescribed at that time.

Results: We included 59 patients, with a median (Q1, Q3) age of 53 years (47, 58) and 39 (66%) were male participants. 22 patients (35%) had no neurocognitive deficits), 16 (27%) had HAND and 21 (35%) had non-HIV associated neurocognitive disorders (mostly depression). Implementation over 3 years showed a significant decline (50%) in medication adherence among patients diagnosed with HAND in comparison with patients who had a normal neuropsychological status or a non-HIV related cognitive deficit (implementation stayed 90% during follow-up).

Conclusions: Our findings support the hypothesis that HAND is associated with reduced cART adherence.

104 Word Frequency and Content Analysis of Words Used during 8482 cART Adherence Motivational Interviews

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Background: Motivational interviewing is a person centered approach for enhancing motivation through helping the patient explore and resolve ambivalence to change nonadherent behavior or to maintain adherent behaviour. It has been reported to have a positive effect on adherence to cART. This study aims to identify the terms associated with low or high cART adherence through a content analysis from motivational interview reports conducted at the community pharmacy of the Lausanne university hospital as part of the adherence enhancing programme.

Methods: Using text from 8,428 interviews with 522 patients, we constructed a term-frequency matrix for each patient, retaining single words, two word phrases, and three word phrases that occurred at least ten times overall and were used by at least six of the patients. As we have many more of these parameters than patients, we investigated their association with adherence rate using a regularised regression model which shrinks the coefficients of the terms. We then conducted a close reading of the text for those terms that have the largest estimated effects on adherence. In addition to this data-driven approach, we studied the contexts of words through discussions with a focus group of two pharmacists and one infectious disease physician.

Results: The mean adherence rate for all patients was 86.8%. The analysis resulted in 7608 terms associated with low or high adherence. Terms associated with low adherence included travel, pocket dosing, variable hours for medication intake, treatment complexity and having psychological difficulties such as depression. Terms associated with high adherence included patient mentioning that they can self-manage their treatment, following fixed medication intake timing, not experiencing side effects and living with a significant other.

Conclusion: Discussion of unstable domestic and family factors and not accepting one's HIV+ status, were associated with low adherence. Reported lack of side effects and good patient mood and motivation were associated with high adherence. Healthcare providers should be aware of phrases that are associated with low or good adherence. This knowledge may reinforce the supporting factors and try to resolve the barriers together with the patient.

105 HIV Patients' Beliefs about their Chronic Co-Treatments in Comparison with their Combined Antiretroviral Therapy (cART)

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Introduction

Background: Thanks to the success of combination antiretroviral therapy (cART), HIV infected patients almost reach a normal life expectancy. This has resulted in an aging HIV population suffering from other chronic co-morbidities such as cardiovascular diseases, osteoporosis, and depression. Our hypothesis is that patients' perceptions and attitudes towards their cART which is perceived as crucial to their survival differ from their beliefs about their co-treatments and this may have an impact on their medication adherence.

Methods: We used the Beliefs about Medicine Questionnaire (BMQ f©) to measure the perceptions of patients about their co-treatments and the BMQ-HAART© to measure their beliefs about their cART from a representative sample (n=150) of patients enrolled in the Swiss HIV Cohort Study (SHCS) and followed at the Infectious Disease Service at the University Hospital in Lausanne, Switzerland. The BMQ-Specific comprises two sub-scores: Specific-Necessity and Specific-concerns. The sub-scores were standardized by dividing the score scale by the number of questions in the scale resulting in a range of responses between 1 (low) and 5 (high). Self-reported medication adherence was measured using the SHCS adherence questionnaire (SHCS-AQ). Socio-demographic variables were retrieved by reviewing the SHCS database.

Results: A response rate of 73% (109/150) was achieved. 105 patients were included in the analysis: median age was 56 (IQR: 51, 63) and 74 were male (70%). 87 patients (83%) were adherent to cART and 75 (71%) were adherent to their co- treatments (p=0.0001). The standardized mean (SD) responses of BMQ necessities sub-scores were 3.84 (0.41) and 2.79 (0.94) for cART and co-treatments respectively ($p < 0.0001$). For concerns the standardized mean (SD) responses were 4.34 (0.97) for cART and 4.06 (0.81) for co-treatments ($p<0.01$). Co-treatment and cART concerns increased as the number of co-treatments increased (p 0.03 and $p < 0.0001$ respectively)

Conclusion: Patients had higher concerns and necessities for their cART in comparison with their co-treatments. A higher percentage of patients reported being adherent to cART vs. their co-treatments. Further research using electronically monitored adherence is needed to explore the association between adherence and patients' perceptions.

106 Living with Multi-Level, Intersecting, and Shifting Challenges: Patient Accounts Inform How to Reach HIV Viral Load Suppression among Poor and Racial/Ethnic Minorities

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Background: About one-third of PLH are insufficiently adherent for viral load suppression. PLH who experience multiple and intersecting health disparities (e.g., poverty, race/ethnicity, and sexual orientation) report worse viral load outcomes and less support from adherence interventions. The purpose of this study is to better understand the challenges of PLH without a suppressed viral load affected by health disparities, to better respond to their adherence needs.

Methods: Two peer-led HIV medication adherence intervention studies were conducted with 50 PLH without viral load suppression. Participants experienced multiple health disparities; most were individuals of color with low SES. Peer interventionists documented 7 weekly meetings of participants' adherence experiences with detailed field notes. Notes were chosen as a data collection method by participants (i.e., versus recordings) to promote safe and comfortable peer-to-peer dialogue. Content and narrative analyses explored field notes from approximately 300 intervention sessions to identify key medication adherence challenges.

Results: Three themes emerged from the data: (1) multi-level, (2) intersecting, and (3) shifting adherence barriers. Most participants reported barriers at the individual (depression) relational (violence) and social (homelessness) levels. All participants reported multiple barriers (a range of 2-10 barriers; M=6). PLH experienced barriers in waves, which shifted over time, affecting adherence (i.e., depression in control one week, poor the next due to an unexpected event).

Conclusions: Peer conversations allowed honest documentation of dialogue from vulnerable patients with compounding challenges and health disparities. Gathering insights from this subgroup of PLH can inform flexible solutions that respond to patient priorities. Interventions (medical and behavioral) need to be ongoing and sustainable, addressing multi-level challenges in the context of patient's lives, accounting for instability. Improving adherence among PLH without a suppressed viral load who face multiple health disparities is essential to meeting national adherence goals, protecting the health of PLH, and curbing HIV transmission.

107 Trends in Provider-Advised Antiretroviral Therapy Deferral in the United States, 2009-2014

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Background: Antiretroviral therapy (ART) use and subsequent viral suppression decrease morbidity and HIV transmission. US guidelines recommend universal ART prescription, and most HIV patients now take ART. However, the reasons some patients are still not taking ART have not been fully examined.

Methods: The Medical Monitoring Project (MMP) is a surveillance system designed to produce representative clinical and behavioral data on HIV-positive persons in the United States. We used weighted MMP data from 1926 persons receiving medical care and not taking ART to assess linear regression-based trends from 2009 to 2014 in self-reported history of ART use (ART-naïve versus ART-experienced) and provider-advised ART deferral, and whether the latter trend differed by history of ART use and disease stage.

Results: From 2009 to 2014, the proportion of patients not taking ART declined (12% to 4%, $P<0.01$). Among this group, the proportion who were ART-experienced increased (44% to 52%, $P=0.02$). The proportion not taking ART who reported provider-advised deferral decreased (67% to 40%, $P<0.01$). Provider-advised deferral decreased from: 80% to 59% among the ART-naïve, 50% to 23% among the ART-experienced, 63% to 32% among those with AIDS or nadir CD4 0-499, and 86% to 67% among those with no AIDS and nadir CD4>500 (all $P<0.01$).

Conclusions: HIV patient reports suggest that ART deferral has become less likely to be recommended by US providers. This finding held regardless of patient ART history or disease stage, although provider-advised ART deferral was less common among the ART-experienced and those with lower CD4 counts. By 2014, the majority of patients not taking ART were ART-experienced, and less than one-quarter reported provider recommendation as the reason for not taking ART. More work may be needed to address patients' barriers to ART use apart from provider-advised deferral.

109 Physical and Mental Health in HIV-Positive Chinese Women and their Family Caregivers

Wei-ti Chen (presenting)

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Background: China is experiencing a rapid increase in the HIV infections. Heterosexual sex is currently the most common transmission route. There is very limited research focusing on interventions for HIV-positive women in Chinese culture, particularly in the context of self- and family-management. In this study, we describe the development and preliminary evaluation of a theory-informed self and family-management intervention delivered at Shanghai and Beijing HIV clinics. The intervention was designed to support HIV-infected women to assist self- and family-management and to enhance their QOL. Forty-one HIV-positive women were recruited from two premier Chinese hospitals: Beijing's Ditan Hospital and Shanghai's Public Health Clinic Center (SPHCC) in China.

Methods: At the baseline appointment, participants were randomized to either the control or intervention arm using computer randomized number in recruitment sequence. Study dyad in the intervention arm had three counselling sessions with the nurse interventionist of up to 60-90 minutes each over 4 weeks. The interventionists also completed a content checklist and a progress note after each session. At baseline (pre-randomization), immediate post-intervention (month 1) and follow-up (month 3), the participants (women and her family caregivers) were given an approximately 1-hour *Audio Computer-Assisted Self-Interview* Software (ACASI) assessment survey to complete on their pace.

Results: At baseline, approximately, 50% of the participants in both study arms reported 'moderate' levels of physical QOL. Over time, HIV-positive women in the intervention arm indicated better levels of physical QOL while the control group presented decreased physical QOL. Also, the slopes between women in two arms from month 1 to month 3 were significantly different. Similarly, depressive symptomatology in the caregivers also presented 23% of decreased of depressive.

Conclusions: In this self- and family-management intervention project, for physical strength, these HIV-positive Chinese women function in many chores inside and outside of the house. After the intervention, women who went through the tailored counseling session, they shown better physical QOL compare to the control group. HIV-positive women in the intervention arms had shown increase physical strength at the same time, decrease depressive symptoms. Future intervention work should consider the advantages of involving current caregivers more systematically as part of the self- and family-management.

110 The Effect of an Intravaginal Practices Intervention on Health, Partner, and Hygiene Importance Using Conjoint Analysis: A Pilot Study among Zambian Women

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Background: Intravaginal practices (IVP) are common in Zambia and are usually practiced for hygiene, health, or to please sexual partners. IVP are associated with bacterial vaginosis, HIV acquisition, and likely play a role in HIV transmission. This study evaluates the impact of the WASH intervention (an intervention to decrease IVP) on the decision for engaging in IVP among HIV-infected Zambian women using conjoint analysis (CA).

Methods: Conjoint questionnaires were developed and used to measure and quantify the decision- making process for engagement in IVP. CA was used to evaluate how the WASH intervention impacted the reasons for IVP engagement (hygiene, health and partner pleasure).

Results: Participants were N=84 women (37±8 years old) randomized to WASH (n=46) or a standard of care+ condition (SOC+; n=38), and completed demographic measures and a CA questionnaire at baseline, 6-months, and 12-months to quantify the importance placed on hygiene, partner pleasure, and health. The importance placed on hygiene decreased from baseline to 6-months (63.6 to 50.3) and to 12-months (26.1) (all p <0 .001). At follow up, the importance placed on hygiene was higher in the WASH than in the SOC+ condition (6-month: 56.1 vs 44.6, p=0.029; 12 months: 29.3 vs 22.8, p=0.50). The importance of health increased from baseline to 6-month (15.5 vs. 25.1) and to 12-months (50.5) (all p <0.001); and was lower in the WASH than in the SOC+ condition at 6-months (19.9 vs. 30.3; p=0.003). Importance placed on partner pleasure did not change over time or by condition.

Conclusions: Both conditions promoted an increase in the importance placed on health and a decrease on the importance of hygiene when engaging in IVP. The use of CA provides novel strategies to evaluate reasons for engaging in HIV risk behaviors and should be considered for inclusion in HIV prevention studies.

112 Duration of Never in Care since HIV Diagnosis is Associated with Willingness to Link to Care following Health Department Outreach

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Background: Persons living with HIV (PLWH) require linkage and retention in continuous care to improve clinical outcomes and reduce the risk of onward HIV transmission. In 2013, the NYC health department began using the HIV/AIDS reporting system to identify PLWH presumed to be never in care (NIC) for HIV to facilitate linkage.

Methods: A patient with no CD4 or VL report in HARS or initial CD4 or VL at diagnosis but no follow-up value for ≥6 months was defined as "never in care" (NIC). We attempted to contact persons (n=651) from 1/2013-10/2016 identified as NIC to link them to care and ascertain reasons for NIC.

Results: Of 651 PLWH presumed NIC, 301 (46%) were never located. Of the 350 (54%) traced, 39 (13%) were discovered to be receiving active care in NYC and 115 (33%) were alive in NYC but NIC; others were out of jurisdiction (36%), HIV-negative following additional HIV testing (12%), or deceased (2%). Of the 115 NIC-PLWH, most were male (71%), black/non-Hispanic (58%) or Hispanic (29%), and aged 3 years (38%). Twenty-three (20%) accepted linkage to care (LTC) and 92 (80%) refused. Compared to the 23 persons accepting LTC, the 92 who refused were significantly more likely to have been NIC >3 years since diagnosis (42% vs. 22%; P=0.003). The most common reasons given for being NIC were "not believing HIV diagnosis" (20%), "lacking insurance/stable housing" (19%) and "not trusting health care providers" (11%). Thirty-four (34%) had not informed anyone of their HIV diagnosis.

Conclusion: Most contacted NIC-PLWH refused a renewed offer for LTC. Longer duration of NIC since HIV diagnosis was associated with unwillingness to LTC. Prompt attempts should be made to link persons to HIV care soon after HIV diagnosis.

114 Effect of Baseline Clinical Signs or Symptom Manifestations on Adherence to Antiretroviral Therapy Among HIV-Infected Adult Patients in Nigeria

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Background: Adherence to treatment is a major challenge among HIV-infected patients even with availability of free antiretroviral therapy (ART) in resource limited settings (RLS). Little is known about the link between patients' symptom experience at ART initiation and adherence to ART in RLS. This study was carried out to determine the relationship between signs/symptom experience at ART initiation and medication adherence in Nigeria.

Methods: We conducted a retrospective cohort analysis of 1609 adult HIV-infected patients screened for signs/symptoms at Jos University Teaching Hospital (JUTH) at ART initiation from 2012 to 2013. Adherence rates were measured among all patients and compared with patients with appreciable symptom/signs at ART initiation. We constructed multivariable logistic regression models to measure associations between baseline clinical signs/symptoms, patient demographics, adherence to ART over 90 and 180 days on therapy.

Results: Of the 1609 participants, 1107 (69%) were females; mean age: 38 years, 414 (26%) had symptoms at ART initiation. Patients with symptoms/signs had three times the likelihood of being more adherent over the 90-day period (OR=3.88, 95% CI 2.82 -5.35). Over the 180-day period, patients with symptoms were two times more likely to be adherent (OR=2.26, 95% CI 1.78- 2.86) compared to those without symptoms after adjusting for sociodemographic factors. Headaches (OR=0.43, 95% CI 0.19- 0.99), cough (OR = 0.64, 95% CI 0.40 -1.03) were significantly associated with adherence within 180 days. Participants presenting with skin rash were two times more likely to be adherent within 180 days (OR=2.83, 95% CI 1.56- 5.13) after adjusting for other symptoms.

Conclusions: Presence of signs/symptoms of HIV disease at ART initiation was significantly associated with adherence on ART; those bothering on skin appearance seems to encourage patients' adherence. Identification of factors causing non-adherence is critical for the implementation of effective interventions to promote ART adherence.

116 Internalized HIV-Related Stigma Reports by US States and Puerto Rico, Medical Monitoring Project, 2011-2014

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Background: Internalized HIV-related stigma–the extent to which HIV-positive persons hold negative beliefs about HIV as true about themselves–has been associated with poor health and poor adherence to HIV treatment. To inform local stigma-reduction efforts, we compared the prevalence of two aspects of internalized HIV stigma among 16 US states and one territory.

Methods: The Medical Monitoring Project (MMP) collects annual data from a probability sample of US HIV-positive adults receiving medical care. We used weighted data collected from 6/2011–5/2015 (n=18,759) to assess self-reported internalized stigma based on agreement with two statements, "I am ashamed that I am HIV-positive" and "I hide my HIV status from others." We compared agreement with each statement by state/territory based on the jurisdiction from which patients were sampled.

Results: In all, 33% of patients reported feeling ashamed about being HIV-positive (95% confidence interval [CI]:31–34). Among states/territory, patients sampled from Virginia were most likely to report shame (42%, CI:41–43), followed by Illinois (39%, CI:36–42) and Indiana (39%, CI:35–43). States where patients reported least shame were Florida (29%, CI:24–34), Georgia (29%, CI:25–33), and New York (29%, CI:26–33). Overall, 59% of patients reported hiding their HIV status from others (CI:58–61). Patients from Puerto Rico were most likely to report hiding their status from others (76%, CI:71–81), followed by Illinois (70%, CI:66–73) and Virginia (68%, CI:63–73). Patients sampled in Oregon (51%, CI:49–52), Washington (53%, CI:49–56), and Mississippi (55%, CI:53–56) were least likely to report hiding their HIV status.

Conclusions: Internalized stigma, as measured by shame about being HIV-positive and hiding one's status, was common among HIV patients and varied by state/territory. Reducing stigma is important for improving the health and well-being of HIV patients; these findings can inform local stigma-reduction efforts.

118 A Synthesis of Qualitative Research with Adults Living with HIV on Barriers to ART Adherence

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Background: Managing antiretroviral therapy (ART) adherence is problematic for patients and healthcare providers and theoretical development in this area appears limited. Qualitative research on ART adherence barriers can provide a foundation for a more patient-centered understanding and basis for intervention. This synthesis identifies, based on findings of qualitative studies conducted in developed countries with HIV-infected adults, factors identified as barriers to not taking ART as prescribed and how they are related.

Methods: Searches in Medline, PsychINFO and Embase, conducted in March 2016 to locate publications from 1996, produced 5,284 records. With 2 reviewers, 42 articles were selected for inclusion. The synthesis followed a meta-ethnographic approach. Study results and discussions were coded and analyzed with Atlas.ti (version 8).

Results: Nineteen main interrelated categories of barriers were identified: HIV and ART-related Beliefs/meanings, Affect (e.g., feeling depressed, fear) and Care motivation; Organization of daily life (e.g., routine disruption, conflicting demands); Substance use/abuse; ART side effects; Stigma (e.g., concern about others discovering HIV status); Personal relationships; Rules of ART administration (e.g., complexity, food/water requirements); Limited resources (e.g., homelessness); Trouble accepting HIV infection (e.g., denial); Patient-provider relationship (e.g., mistrust); Co-morbidity (e.g., diabetes, mental illness); Body-monitoring (e.g., 'listening' to the body to determine adherence); Physical/sensory features of ART (e.g., pill size, color, smell, taste); Health insurance issues (e.g., difficulty accessing); Pharmacy issues (e.g., refills unavailable); Lack of knowledge/uncertainties about ART; and Health status (e.g., clinical results).

Conclusions: The modeling of these categories and their relationships contributes a detailed, complex and dynamic understanding of ART adherence barriers applicable to a wide range of HIV patients. It will form the conceptual framework of a new patient-reported outcome measure to signal patient-relevant barriers to adherence and guide HIV clinical care. Through this patient-centered approach, we hope to optimize the HIV care continuum, improving adherence and patient quality of life.

119 Retention in Medical Care among Insured Adolescents with Diagnosed HIV Infection – United States, 2010-2014

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Background: Retention-in-care (RiC) is a critical component of effective HIV treatment; however, adolescents may be at increased risk of inadequate RiC.

Methods: We used the 2010-2014 MarketScan® Medicaid and MarketScan® Commercial Claims insurance databases to evaluate RiC for HIV-diagnosed adolescents. Eligibility required: age ≥13≤24 years in 2010; diagnostic billing code for HIV/AIDS in 2010 and occurring on >1 date; insurance enrollment for ≥10 months out of each 12-months for months 0-24; a qualifying outpatient visit within 6 months of the first HIV/AIDS billing code. Adolescents were followed for 36 months, but were censored if not enrolled ≥10 months of any 12-month period. We determined the unweighted proportion retained-in-care (defined as ≥1 office visit per 6 months, ≥60 days apart, for months 0-24) and in care (≥1 visit per 6 months, ≥60 days apart for months >24-36), for both cohorts. We used univariate logistic regression to assess associations between demographic factors (sex and race) and RiC.

Results: The cohorts included 378 (Medicaid) and 1,028 (commercial) adolescents. The Medicaid cohort was majority female (63%) and black (68%). The commercial cohort was majority male (73%); race/ethnicity information unavailable. Forty-nine percent (Medicaid) and 57% (commercial) were retained in months 0-24. After month 24, 18% (Medicaid) and 32% (commercial) were censored. In the Medicaid cohort, 73% of retained and 45% of adolescents not retained in months 0-24 were in care during months >24-36. In the commercial cohort, 77% and 31% of retained and not retained adolescents respectively, were in care in months >24-36. Regression revealed no significant associations between demographic factors and altered odds of RiC in either cohort.

Conclusions: Notable proportions of HIV-diagnosed adolescents are not adequately engaged in care; public health interventions specifically tailored to this population are needed.

120 Retention in Medical Care among Insured Children with Diagnosed HIV Infection – United States, 2010-2014

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Background: There is little information available about engagement in care for the estimated 2,477 children with diagnosed HIV aged <13 years in the United States.

Methods: We used the 2010-2014 MarketScan® Medicaid and MarketScan® Commercial Claims insurance databases to evaluate RiC for HIV-diagnosed children. Eligibility required: age 1 date; insurance enrollment for ≥10 months out of each 12-months for months 0-24; a qualifying outpatient visit within 6 months of the first HIV/AIDS billing code. Children were followed for 36 months, but were censored if not enrolled ≥10 months of any 12-month period. We determined the unweighted proportions retained in care (defined as ≥1 office visit per 6 months, ≥60 days apart, for months 0-24) and "in care" (≥1 visit per 6 months, ≥60 days apart for months >24-36), for both cohorts. We used univariate logistic regression to assess associations between demographic factors and RiC.

Results: The cohorts included 163 (Medicaid) and 129 (commercial) children. The Medicaid cohort was equal proportions male and female and mostly black (65%). For the commercial cohort, sex and age distributions were similar to the Medicaid cohort; race/ethnicity information was unavailable. Sixty percent (Medicaid) and 69% (commercial) were retained in care in months 0-24. After month 24, 9% (Medicaid) and 29% (commercial) were censored. In the Medicaid cohort, 93% of retained and 59% of children not retained in months 0-24 were in care during months >24-36. In the commercial cohort, 85% and 32% of children initially retained and not retained in care, respectively, were in care in months >24-36. Regression revealed age ≤1 year (OR 0.38 (0.16-0.88) was associated with decreased odds of retention within the commercial cohort; no other significant associations were seen.

Conclusions: Some HIV-diagnosed children in the U.S. are not adequately engaged in medical care. Further assessment of the current status of key medical care metrics for HIV-diagnosed children is indicated to target public health action.

121 Exploring Needs and Expectations for Intervention to Encourage HIV Treatment Initiation in South Africa

Valerie Earnshaw (presenting)[1], Laura Bogart[2], Ingrid Courtney[3], Holly Zanoni[4], David Bangsberg[5], Catherine Orrell[3], Kathy Goggin[6], Ingrid Katz[4]

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Background: The UNAIDS 90-90-90 treatment targets aim to dramatically increase the number of people who receive HIV testing, link to antiretroviral therapy (ART), and achieve viral suppression by 2020. A full understanding of barriers to and facilitators of reaching these goals in high prevalence countries is critical, yet lacking. In particular, barriers and facilitators among people who have tested HIV-positive but who have not initiated ART are not well understood.

Methods: Qualitative semi-structured interviews were conducted with 30 participants in Gugulethu Township, South Africa, including 10 healthcare providers and 20 people living with HIV (PLWH) who did not initiate ART. Interviews explored needs associated with ART initiation and expectations for intervention components to optimize ART initiation. An inductive content analytic approach was used.

Results: PLWH described multi-level barriers to care, including challenges coping with the knowledge that life-long treatment was necessary for survival, even during periods of well-being, and anticipated stigma from others who might discover their sero-status when they accessed treatment. The healthcare system was often seen as difficult to access, with long lines and inconvenient hours and locations. Both healthcare providers and PLWH emphasized the importance of providers treating PLWH with empathy and respect to create a welcoming environment for HIV treatment. Many participants discussed the benefits of social support in mitigating barriers to ART, noting that peers can offer needed encouragement, serve as advocates, and provide helpful counseling. Participants also noted that other PLWH can serve as positive role models (e.g., "I think [training peers] is the best idea because it is good when you are telling the person, 'Look at me, I was very sick, but look at me now. I am very beautiful.'").

Conclusions: Findings suggest that interventions incorporating peer support and navigation may be effective in optimizing ART initiation among PLWH in South Africa.

122 "Getting to 90" by "Actioning the Data": A Health Department-Service Agency Initiative to Improve Viral Suppression Rates among HIV-Positive Housing Consumers in New York City

Ellen Wiewel (presenting)[1], Christopher Beattie[1], Yaoyu Zhong[1], Raquel Silverio[1], Eleonora Jimenez-Levi[1], X. Pamela Farquhar[1], Joanne Hsu[1], Jesse Thomas[2], John Rojas[1]

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Background: More than one-third of New York City's (NYC) persons with HIV (PWH) receive subsidized housing assistance, but many remain virally unsuppressed. The "Getting to 90" initiative was developed to help HIV housing agencies introduce changes that would reduce barriers to viral suppression, by establishing a 90% suppression goal, improving data quality, and delivering technical assistance.

Methods: In 2016, the NYC Department of Health and Mental Hygiene, a grantee for the US Housing and Urban Development's Housing Opportunities for Persons with HIV/AIDS (HOPWA) program, launched "Getting to 90" for HOPWA-funded agencies delivering supportive permanent housing. This year-long initiative analyzes factors associated with non-suppression among HOPWA consumers; provides customized dashboards of suppression rates; and offers quarterly monitoring and technical assistance calls. In addition, the NYC HOPWA data information system, eCOMPAS, was enhanced to streamline and facilitate data entry efforts.

Results: At baseline, 73% of NYC HOPWA consumers had documented viral suppression. Agencies identified both organizational and consumer barriers to suppression, including low staff knowledge, consumer reluctance, and treatment adherence barriers. Most common consumer-specific strategies were individual and group sessions on viral suppression, and medical escorts. Agency-specific strategies involved incorporating viral suppression into team meetings, supervision, and in-house trainings. Currently half-way through the initiative, agencies have participated in a kickoff community forum, a two-day eCOMPAS training, and two quarterly phone interviews, and received two quarterly dashboards tracking their viral suppression performance. Agency-reported viral suppression rates from baseline to six months increased at 11 of 14 agencies and seven percentage points overall, to 80%.

Conclusion: Local health departments can play an important role in providing data and technical assistance to agencies responsible for providing services and increasing suppression among PWH. An intervention "actioning the data" to monitor clinical health outcomes for PWH can motivate HIV housing agencies to address organizational and individual barriers to viral suppression.

123 The Effect of a Government-Subsidized Housing Program on Engagement in Medical Care and Viral Suppression among HIV-Positive Persons, New York City

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Background: Stably housed persons living with HIV (PLWH) are more likely than homeless PLWH to sustain HIV care and treatment. NY/NYIII is a joint New York City (NYC) and State (NYS) supportive housing program for populations at risk of homelessness, including PLWH. We assessed impacts of NY/NYIII placement on HIV medical care engagement and viral suppression.

Methods: Housing and health outcomes were obtained from NYC/NYS administrative and surveillance datasets. Of NYC PLWH eligible for NY/NYIII during 2007-2010, PLWH placed in NY/NYIII housing for ≥7 days were considered the placed group. Sequence analysis identified housing stability patterns for two years post-eligibility. Poisson regression identified differences between placed and unplaced groups in engagement in care (≥1 CD4 or viral load test) and viral suppression (last viral load ≤400) in the second year after eligibility, overall and by housing pattern.

Results: Of 841 PLWH enrolled in NY/NYIII, 73% were male, 90% Black or Hispanic, 86% substance users, 98% mentally ill, and 68% in unstable government-subsidized housing pre-eligibility; median age was 47 years. In sequence analysis, the majority (66%) of the 473-person placed group exhibited a stable housing pattern within 6 months, compared with 11% in the 368-person comparison group ($p < 0.001$). After controlling for demographics and baseline care, placed persons achieving stable housing within 6 months and also all other placed persons were more likely to be engaged in care, compared with unplaced persons not achieving stable housing within 6 months (96% and 94% vs. 83%; adjusted odds ratios=1.12[95% CI: 1.06-1.19] and 1.14[95% CI: 1.08-1.20], respectively). However, placement was not associated with viral suppression.

Conclusions: PLWH at risk of homelessness had greater engagement in care after placement in a supportive housing program, but this did not translate to increased rates of viral suppression. Additional adherence support may be beneficial for this population.

124 STEPS to Care: Incorporating Lessons from Early Adopters into an Online Toolkit to Support Practice Improvements in the HIV Care Continuum

Aisha Wilkes (presenting)[1], Lydia O'Donnell[2], Mary Irvine[3], Deborah McLean Leow[2], Julie Rwan[3], Athi Myint-U[2], Darrel Higa[1], Patricia Bessler[1], Graham Harriman[3]

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Background: Evidence-based programs to support patients along the HIV Care Continuum have been identified, yet the transfer of effective strategies to new agencies remains challenging. Improving client engagement, treatment adherence, and retention, especially for those at greatest risk of suboptimal care outcomes, typically requires the integration of practice improvements at the systems-, provider- and client-serving levels. Critical to effective transfer is an understanding of the different contexts in which HIV/AIDS services are provided, as well as attention to the burdens, established procedures, and resource limitations of administrators and frontline staff. We describe how input from experienced and newly adopting agencies was incorporated into STEPS to Care (StC), an e-toolkit designed to provide easily accessible guidance and tools that support practice improvements for care and treatment engagement.

Method: StC was developed through a process that translated face-to-face training, technical assistance, and print resources supporting the NYC Ryan White HIV Care Coordination Program (CCP) into a streamlined set of online tools for national dissemination. Target areas included Care Team Coordination, Patient Navigation, and HIV Self-Management. Agency input was obtained in phases, first through discussions and observations at NYC agencies delivering the CCP as initially designed and, second, through piloting the StC toolkit with eight agencies. Barriers and facilitators of uptake and implementation were documented through interviews and assessments of agency, provider, and client use.

Result: New users reported positive changes in practices, client receptivity to self-management tools, and improved provider-client interactions. Factors for success include identification of an agency advocate and adequate time for pre-implementation planning. Needs for additional guidance were identified, including support for selecting and tailoring tools while improving workflow, orienting staff, and training front-line providers on using online tools.

Conclusion: The evidence-based, field-tested StC e-toolkit shows promise for HIV care provider integration of practice improvements.

125 Patient-Reported Barriers to Antiretroviral Adherence among Patients in HIV Care

Rob Fredericksen (presenting)[1], Laura Gibbons[1], Todd Edwards[1], Frances Yang[2], Edgar Paez[3], Stephanie Loo[4], Lydia Dant[4], Melonie Walcott[5], Cristina Gutierrez[4], Sharon Brown[1], Emma Fitzsimmons[1], Laurie Smith[1], Anna Church[1], Chris Mathews[3], Michael Mugavero[5], Kenneth Mayer[4], Donald Patrick[1], Paul Crane[1], Heidi Crane[1]

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Background: Barriers to antiretroviral adherence are multidimensional, overlapping, and often interrelated. We sought to identify adherence barriers among patients in HIV care in U.S. clinics that are part of the CFAR Network of Integrated Clinical Systems (CNICS).

Methods: CNICS patients from four geographically diverse U.S. sites completed a touch-screen-based assessment including measures of adherence behaviors and barriers, as well as drug/alcohol use, depression/anxiety, and risk behavior. Patients reporting having missed one or more doses in the past 7 days were administered adherence barrier items. We examined the prevalence of 22 barriers and their association with self-reported adherence.

Results: Of 2062 patients administered the assessment, n=208 had missed at least one dose in the past 7 days. These patients reported a mean of 3.1 barriers. The most common barriers were simply forgetting (48% of the 208 who missed a dose), falling asleep/sleeping through dose time (31%), change in daily routine (30%), not having medications with them (30%), being "busy" (28%), did not/could not refill (25%), feeling hopeless/depressed (16%), and feeling sick/ill (14%). In multivariate logistic regression, barriers independently associated with self-reported poor to fair adherence were not having medications with them (OR (95%CI): 2.43 (1.30, 4.55)) and feeling hopeless/depressed (2.51 [1.14, 5.52]).

Conclusion: Barriers associated with actual self-reported missed doses were multi-dimensional, and included mental health, drug use behavior, disruption of daily routine, health beliefs, and the role of caregivers. These findings suggest the need for investigation and problem-solving within these five dimensions in order to support patient adherence to antiretroviral medication.

126 Methodological Challenges to Addressing Study 'Drop-Out' in the Context of Retention-in-Care Interventions: Considerations for Clinic-Based Behavioral HIV Prevention Trials

Linda Koenig (presenting)[1], Ann O'Leary[1], Cari Courtenay-Quirk[1], Camilla Harshbarger[1], Cynthia Lyles[1], Megan Lewis[2]

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Background: Viral suppression (VS) among persons with HIV is a key strategy for achieving national prevention goals. Although most patients in care achieve VS, many with diagnosed HIV are not in care or attend inconsistently. Thus, interventions to achieve VS must address retention-in-care. The aims of this presentation are to describe methodological challenges associated with evaluating clinic-based interventions when retention-in-care and/or VS are outcomes, and present an example of addressing this challenge through a current pragmatic trial.

Method: Randomized controlled trials (RCTs) are the gold standard for assessing intervention efficacy. Methodological rigor is reflected in design characteristics, including sufficient trial retention and minimal differential attrition across study arms. Investigators usually employ strategies (e.g., reminders, incentives) to assure that participants remain engaged. When participants are patients in care, and retention and VS are outcomes assessed at clinic appointments, activities to enhance study retention can become interventions in themselves, impacting outcome validity. Recognizing this, CDC does not include retention or differential attrition as criteria when evaluating retention-in-care interventions for its "Compendium of Evidence-Based HIV Interventions." However, it is unclear how best to measure and assure sufficient study retention without adding bias.

Results: *Positive Health Check,* a web-enabled clinic-based counseling tool for HIV patients, is being evaluated in a pragmatic RCT. The primary study outcome is viral load, tracked at each clinic visit along with attendance and tool use. To eliminate potential bias, the protocol was designed to not interfere with clinic attendance to accurately measure retention-in-care. For patients who do not otherwise attend a clinic visit during the follow-up period, strategies are used to encourage return to clinic for a final study visit and lab test after the follow-up period ends. In this way, we hope to maintain internal validity while retaining ecologically valid outcomes.

Conclusion: Further discussion of these methodological issues is warranted.

128 A Mixed Methods Study of Non-Occupational Post-Exposure Prophylaxis at an STI Clinic in Singapore: Five-Year Retrospective Analysis and Providers' Perspectives

Alvin Kuo Jing Teo (presenting)

Saw Swee Hock School of Public Health, National University of Singapore

Background: This mixed methods study aims to describe predictors of NO-PEP uptake, follow-up, and adherence at a public STI clinic in Singapore from 2010-2016 and understand providers' perspectives and experiences with NO-PEP implementation.

Methods: This study adopted an explanatory sequential design. Predictors of loss to follow-up and NO-PEP adherence were assessed using Cox proportional hazards regression and modified Poisson regression, respectively. Subsequently, nine in-depth interviews with health care providers were conducted to gain their insights to barriers and facilitators to implementation of NO-PEP. Transcripts were coded and themes were explored using applied thematic analysis.

Results: Of 502 NO-PEP cases reviewed, 54% were followed-up at least once within six months post-exposure and 42% were adherent to NO-PEP. 431 prescription decisions were made in accordance to guideline. In multivariate analysis, MSM/bisexuals, tourists and presence of side effects were significantly associated with loss to follow-up and NO-PEP non-adherence. Additionally, Tenofovir/Emtricitabine (TDF/FTC) based regimen was significantly associated with increased rates of regimen completion. Level of awareness, stigma, and patients' perception of risk and treatment benefits derived qualitatively explained corresponding quantitative results. Types of antiretroviral regimen and side effects corroborated quantitative predictors of adherence and follow-up.

Conclusion: Customized socio-behavioral interventions are needed to address diversity of patients, stigma, and patients' low awareness and perceptions of NO-PEP to improve uptake, follow-up and adherence.

130 Health Literacy Explains Potential HIV Medication Management Disparities

Drenna Waldrop-Valverde (presenting)[1], Raymond Ownby[2], Tian Dai[1], Ying Guo[1], Marcia Holstad[1]

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Background: Our preliminary studies suggested that African Americans living with HIV (AALWH) may be at risk for medication mismanagement due to limited health literacy. The purpose of this study was to assess whether AALWH were more likely than non-AALWH to misunderstand and mismanage their HIV medication regimens because of limited health literacy.

Methods: A total of 657 HIV-infected men and women in the metro-Atlanta area were enrolled. Baseline measures of health literacy (reading comprehension and numeracy), neurocognitive function, knowledge of one's HIV medication regimen and ability to manage a simulated HIV regimen were included in analyses. The simulated regimen measure assessed medication dispensing, calculation of missed doses, and need for refills.

Results: The study sample was 60% AA and 29% women. On average, participants were 48 years old and had completed 13. 1 years of school. Distribution of scores on knowledge of one's HIV medication regimen were highly left skewed indicating that most participants were able to correctly identify and describe their regimen instructions; both AALWH and non-AALWH demonstrated similar regimen understanding. However, AA participants scored lower on the simulated HIV regimen measure, controlling for age, cognitive impairment, education, and regimen complexity. These performance differences were mediated and explained by lower health literacy.

Conclusions: Although no differences by race were noted in knowledge of one's own HIV regimen, potential disparities in managing one's regimen (managing refills, determining missed doses) were influenced by health literacy and were more prevalent among AALWH. Intervention to improve potential mismanagement may be needed among AALWH.

132 Thirty-Day Readmissions among People Living with HIV: Patient and Provider Perspectives

Ank Nijhawan (presenting)[1], Yordanos Tiruneh[2], Robin Higashi[1], Simon Lee[1]

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Background: Thirty-day readmissions among HIV patients are common and costly, especially in safety-net hospital systems. Exploring factors which contribute to readmissions can inform future initiatives aimed at reducing hospitalizations and improving retention in HIV care. We examine and compare patient, physician and case manager perspectives on this quality metric, preventability of readmissions and potential strategies to reduce readmissions.

Methods: Individual semi-structured interviews were conducted with HIV-infected individuals (n=29) who had been readmitted to Parkland Health and Hospital System within 30 days of discharge between October 2015-July 2016. Physicians (n=35) and case managers (n=18) who were involved in either the index admission or readmission were also interviewed. Interviews were recorded, transcribed and thematically analyzed (in progress).

Results: We present preliminary results of thematic analyses from 22 interviews, including: 9 patients, 12 physicians and 1 case manager. Key findings include: (1) 30-day readmissions were considered a generally appropriate metric to apply to HIV patients, though providers advocated for risk adjustment for severity of illness, social and behavioral factors, particularly in a safety-net population; (2) Not all readmissions can be clearly divided into preventable vs. non-preventable events. Both patients and providers highlighted substance/alcohol use, medication nonadherence, and housing instability as important contributors to readmissions. Patients also cited being discharged too soon whereas providers tended to focus on overburdened outpatient medical and social services. (3) Suggested strategies for readmission reduction include integration of electronic medical and social information, expedited access to outpatient specialty care (including mental health and substance use services), and directly observed therapy for high-risk patients.

Conclusions: Patient, medical providers and case managers identified multiple medical and socio-behavioral factors that may contribute to 30-day readmissions among HIV patients. These factors will guide appropriate risk adjustment for expected 30-day readmission rates and will inform future readmission reduction interventions in HIV-infected, safety-net populations.

133 Health Promotion: A Critical Support to ART Adherence in NYC Medical Case Management Programs

Kristecia Estem (presenting), Scarlett Macias, Katherine Penrose, Jennifer Carmona

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Background: The New York City Department of Health and Mental Hygiene (NYCDOHMH) Medical Case Management (MCM) intervention integrates health promotion (HP) into services to increase health literacy among people living with HIV (PLWH). HP is designed to help PLWH remain in care and adherent to antiretroviral treatment (ART). MCM staff follow a curriculum covering HIV biology, care management, risk reduction (RR), and ART adherence. This analysis describes the utilization of HP in MCM.

Methods: We examined the frequency of HP topics covered among MCM clients enrolled 2013-2014. Data were drawn from the Electronic System for HIV/AIDS Reporting and Evaluation (eSHARE), which is used for HIV service provider reporting to NYCDOHMH. We also conducted interviews with MCM staff during 10 site visits about HP topic use, barriers and facilitators, and strategies to effectively deliver HP. Two coders conducted content analysis yielding 14 themes.

Results: Among 2,284 clients, 77% were enrolled for at least 6 months, with an average of 2 HP sessions received per month. The most common topics covered were ART adherence (75%), living with HIV (67%), ART medication handling (65%), and medical appointment management (60%). The least covered topics focused on RR: safe relationships (26%), substance use (31%), and sexual behavior (35%). Interviews confirmed the need for frequent adherence discussions due to factors such as viral load fluctuations, lack of comprehension, and client crises jeopardizing adherence. Noted challenges to conducting HP included age, culture, and language differences between client and staff and difficulty discussing sensitive topics. Staff reported rapport building and motivational interviewing as effective HP delivery strategies.

Conclusions: We have demonstrated that among 77% of clients enrolled for over 6 months in MCM, HP sessions are frequently used. Future evaluation should explore the relationship between HP and clinical outcomes.

136 Leveraging Web-Based Technologies to Improve the Health, Well-being, and Quality of Life of Women Living with HIV: Findings from the Well Project's 2016 User Survey

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Background: The Well Project (TWP) is the premier, global, non-profit online resource on women and HIV, focused on three key areas—information access, community support, and advocacy. Directly reaching more than one million users annually, TWP's online resources include more than 110 regularly updated fact sheets, treatment advocacy programming, English and Spanish blogs, extensive social media offerings, and reports from the Women's Research Initiative on HIV/AIDS.

Method: In 2016, we conducted an online user survey to ascertain how TWP's resources are used by women living with HIV (WLHIV) and with what impact on their health and well-being along and beyond the HIV care continuum. Respondents were recruited through TWP's website, newsletters, virtual flyers, and social media outreach. The survey was administered through Survey Monkey and included closed- and open-ended questions. We report here on findings from the subsample of 136 self-identified WLHIV (of the total 229 sample).

Results: Respondents came from North America (85.3%), Africa (11.7%), Asia (1.5%), Europe (1.5%); average time since HIV diagnosis was 16.3 years. Top reasons for using TWP resources were to address their needs as WLHIV (85.3%); provide support and information as peer educators/advocates (62.5%); educate people (55.9%). The most commonly shared resource was the fact sheets (41.7%). After using TWP's resources, respondents were "somewhat" or "much more" likely to: talk with providers about medication options, concerns, side effects (74.8%); take HIV medication as prescribed (54.4%); seek care for mental health issues (56.3%); feel hopeful about the future (75.7%); experience less HIV self-stigma (65.0%). Respondents also provided suggestions to improve TWP's offerings.

Conclusion: Leveraging technology to provide HIV information and support is an effective way to improve the health, well-being, and empowerment of WLHIV. Periodic user surveys provide important feedback for ensuring that online programs have maximal effectiveness and impact.

137 Innovative Primary Care Model Focused on Maxillofacial Disease Management in the HIV-Positive Patient

Kishore Shetty (presenting)

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Background: This is an innovative pilot program which strategically combines Interprofessional education (IPE) and Interprofessional Practice (IPP) expanding proven models of patient centered care in the diagnosis and management of oral and maxillofacial diseases in the HIV positive patient.

Method: A specialty clinic focussing on primary care of HIV patients in an urban setting implemented a novel approach of team based care comprising of oral medicine specialist, anesthesiologists, general dental practitioners, nurse practitioners and dental students. The first phase of the program involved mutidisciplinary approach for identifying patients with a condition/lesion in the oral and maxillofacial lesion in existing HIV positive participants and newly diagnosed patients. The second phase of the program involved diagnosis of the condition/lesion involving surgical therapy combined with tools followed by therapeutic treatment and/or referral.

Results: The pilot program involved 16 patients over the course of 12 months, with a majority of these patients getting a confirmatory diagnosis and treatment in the clinic for benign inflammatory, auoimmune and/or precancerous lesions. Only one patients with a defined cancerous lesion was refered to a hospital setting for surgical resection and radiation therapy

Conclusion: With graying of the HIV epidemic, a majority of oral and maxillofacial lesions including AIDS defining conditions can be diagnosed and managed in a primary care setting and rarely involves referral to a hospital setting. Secondly the involvement of mid-level medical providers and medical students in a dental clinic setting is a unique initiative for achieving the 2020 goals for HIV care and treatment in a changing health care landscape

138 Patients who Restart Antiretroviral Medication after Interruption Remain at High Risk of Unfavorable Outcomes in Ethiopia

Alula Teklu (presenting)[1], Kesetebirhan Yirdaw[2]

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Background: Achieving optimal adherence to highly active antiretroviral therapy (HAART) is necessary to attain viral suppression and hence optimal clinical outcome. A number of clients interrupting antiretroviral medication restart follow-up but their long-term follow-up outcome have not been determined in Ethiopia.

Objective: In this study we describe treatment interruption among clients, who resumed HAART after interrupting treatment for at least one month, and examine long term trend as well as determine clinical factors that affect it.

Materials and Methods: A retrospective longitudinal observational design was used to analyze difference in treatment interruption among clients who were continuously active and those that restarted treatment at months 6, 12, 18, and 24. Cox proportional hazards regression analysis was used to identify predictors. In addition, time to first treatment interruption, time to restarting after interruption, and time to second interruption were described. All clients registered to receive HAART in ten randomly selected health facilities staring 2005 were used to study clinical outcome up till 60 months or September 2014, whichever came first.

Results: In this study, 44% (9,997/22,647) of clients have interrupted treatment for more than one month at one point during their follow-up. Of these, only 35% ever restarted treatment. At the end of follow-up, the hazard of unfavorable treatment outcome (dead, lost, stop HAART) for clients who restarted treatment at months 6, 12, 18 and 24 was higher by a factor of 1.9, 2.4, 2.6 and 2.4 as compared to those who never discontinued treatment at those times.

Conclusion: The long-term trend of treatment interruption in the study population is at an unacceptable level. And in those with history of treatment interruption, long term favorable clinical outcome was found to be suboptimal. Targeted intervention is required to address follow-up challenges leading to treatment interruption in the first place.

140 Medication Adherence among HIV-Infected Patients Readmitted to a Safety-Net Hospital

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Background: Non-adherence to Antiretroviral Therapy (ART) causes poor treatment outcomes and higher hospitalization rates. We assessed medication adherence among re-hospitalized HIV-infected individuals and explored barriers to adherence from the perspectives of patients, providers, and case managers at the Parkland Health and Hospital System, a safety-net hospital serving socially marginalized communities. The objective was to better understand causes of non-adherence among 30-day readmission patients and explore ways of improving adherence to medication/care plans.

Methods: Data were collected using a validated adherence questionnaire, HIV-VAS, and semi-structured in-person interviews. We assessed self-reported adherence to HIV medications and interviewed 29 HIV-infected individuals readmitted to the hospital within 30 days of discharge. We also interviewed 35 primary and HIV-consult physicians and 18 case managers involved in either admission. All interviews were digitally recorded, transcribed, and coded; survey data were analyzed using descriptive statistics. Preliminary results of thematic analysis are based on 22 interviews, which include 9 patients, 12 physicians, and 1 case manager.

Results: The mean self-reported adherence rate was 60.4%; 6 patients had discontinued HIV medications altogether and another 7 had suboptimal adherence (<80%). Most patients and providers identified non-adherence when explaining poor treatment outcomes and frequent readmission. Identified barriers to adherence included unstable housing/homelessness, mental illness (mainly depression), substance use, and ignorance/forgetfulness. Patients also identified insurance system complexity, arduous paperwork, inconvenient access to medications, side effects, polypharmacy and stigma as adherence barriers. In contrast, providers attributed non-adherence to poor health literacy and insufficient discharge instructions, poor patient–provider communication (PPC), and complex medical regimens/pill burden.

Conclusions: Patients identified structural/system-related barriers while providers cited health literacy and communication-related factors. Both patients and providers mentioned medication-related and behavioral barriers. These findings suggest that interventions designed to improve adherence and reduce hospital readmissions should integrate adequate discharge education and counseling, improved PPC, less-restrictive payment/insurance systems, care integration, and improved access to and coordination with social/behavioral services.

141 Towards a Definition of Engagement in HIV Care: A Systematic Review

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Background: The term "engagement in HIV care" (EC) is used in connection with HIV care continuum interventions, but is often used synonymously with linkage or retention in care (LRC) and a standardized definition remains elusive. To begin developing a standardized definition, we conducted a review and identified HIV care outcomes of prevention interventions that were distinct from LRC.

Methods: We searched the CDC's HIV/AIDS Prevention Research Synthesis Project's database for intervention studies published between 1996 and 2015. Two coders independently identified studies with outcomes that indicated being in HIV care, but were not linkage (i.e., 1st medical visit for newly diagnosed persons) or retention (i.e., multiple visits over a specified timeframe). We abstracted data on 3 elements that may be useful for defining EC: time of diagnosis (newly vs. previously diagnosed), the timeframe in which the outcome occurred, and data collection methods (self-report vs. objective).

Results: Of 39 eligible studies, 28 indicated a patient was in HIV care, but lacked information on time of diagnosis or outcome timeframe. Four studies did not report HIV care separately from other services. The remaining 7 studies reported outcomes indicating at least 1 HIV medical visit within a specified timeframe (e.g., 6 months) and described patients' diagnosis as being previously diagnosed. Most studies (n=33) collected data from medical or agency records.

Conclusion: A small number of studies suggest there may be a relevant HIV care continuum outcome distinct from LRC (i.e., EC). Providing information on time of diagnosis and outcome timeframe are crucial for developing a standardized definition for EC. Reporting on engagement in HIV care separately from other services and using objective measures to document EC are also important. Study limitations include only examining the intervention literature. Correlational and qualitative studies may offer additional perspectives.

143 Using Social Networking Apps with Latino MSM for HIV Testing and Linkage to Prevention and Medical Care Services

Frank Galvan (presenting)[1], Ronald Brooks[2], Honghu Liu[2],
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Background: Men who have sex with men (MSM) of all racial/ethnic groups use social networking applications (apps) to connect with one another. Research has shown that MSM who use these apps to seek sexual partners are more likely to engage in high-risk sexual behaviors, have more sexual partners, and have an STD. Our study sought to provide HIV testing and linkage to HIV medical care and prevention services to Latino MSM unaware of their HIV status by recruiting them through targeted gay-oriented apps.

Methods: Eligible participants were Latino MSM 18 years or older. Recruitment was conducted in Los Angeles County using various modes provided by these apps (e.g., pop-up messages, banner ads, direct messaging).

Results: Between December 18, 2015 to January 31, 2017, 8,730 submissions were made to the project's website by individuals interested in the study, and 4,180 were eligible to participate. 315 individuals tested for HIV through the study. Because there is a delay in confirming with surveillance data whether a positive diagnosis is a new diagnosis, information available at this time is preliminary. Nonetheless, of the first 196 individuals tested through August 31, 2016, 11 individuals were diagnosed as HIV positive, with 5 confirmed as newly diagnosed, 3 identified as previously diagnosed, and an additional 3 not yet confirmed. Among the 196 participants, 79% reported having had anal sex without a condom with another man in the previous 12 months. The study is ongoing, and final confirmation of all new HIV-positive cases is pending. Based on current data, the confirmed rate of new HIV-positive cases is 2.55%. This compares to 1.94% for similar Latino MSM by all County-funded testing programs during the same period.

Conclusions: Our preliminary results suggest that gay-oriented apps provide a unique opportunity to engage high-risk Latino MSM in HIV testing, prevention and care services.

144 Neurobehavioral Alterations, but not Illicit Substance Use, have a Negative Impact on Linkage to HIV Pre-Exposure Prophylaxis

Martin Hoenigl (presenting), Erin Morgan, Donald Franklin, Robert Heaton, Matthew Dawson, Marvin Hanashiro, Eric Ellorin, Elizabeth Pasipanodya, Sheldon Morris, David Moore

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Background: Pre-exposure prophylaxis (PrEP) reduces the acquisition of HIV in clinical trials and demonstration projects. Once participants complete study participation and study-provided free PrEP is discontinued, they are challenged with the need to link to care, acquire PrEP and remain adherent. Frontally-mediated neurobehavioral factors such as elevated impulsivity/disinhibition and sensation-seeking, as well as illicit substance use, may be obstacles to this process, and therefore the objective of this study was to evaluate the impact of these factors on PrEP linkage 6-months after completion of a clinical PrEP trial.

Methods: 112 participants at the University of California San Diego completed an in-person visit 6-months after roll-off from the multicenter CCTG 595 PrEP demonstration trial. Participants completed a neurobehavioral evaluation that included multiple self-report questionnaires of impulsivity/disinhibition (complete questionnaire data available from n=88) and sensation-seeking (n=102). Component scores were standardized and averaged to form composite measures, and the resulting T-scores were adjusted for the performance of a healthy comparison group for ease of interpretability. We also assessed substance use of stimulants, as well as any substance of abuse combined (Table) for the past 3 months using a SCID Substance Use Screening Questionnaire.

Results: Among those who completed a 6-month post study follow-up visit, 72% (81/112) reported current use of PrEP, and 62% (69/112) reported taking PrEP on each of the 3 consecutive days prior to the visit (i.e., adherence). Stimulant or any other substance abuse did not significantly impact on PrEP linkage and adherence (all p>0.5; Chi-squared test). Lower impulsivity/disinhibition was found among those linked to PrEP. Use of stimulants was associated with higher impulsivity/disinhibition and abuse of any substance also with higher sensation-seeking (Table).

Conclusions: Elevated impulsivity/disinhibition, indicative of greater neurobehavioral alterations, was negatively associated with PrEP linkage, and is a potential target for future interventions to help people link to PrEP. In contrast, substance use did not have an impact on PrEP linkage.

T-scores of Frontal System Behaviors in the different subgroups

PrEP Linkage / Substance Use	Impulsivity / Disinhibition T-score (mean, SD; n)	p-value (t-test)	Sensation seeking T-score (mean, SD; n)	p-value (t-test)
Current PrEP Linkage (defined as linked to PrEP care provider plus acquired PrEP)		0.016		0.35
No	62.06(11.67; 22)		59.66 (8.83; 30)	
Yes	55.25 (11.06; 64)		58.10 (7.27; 72)	
PrEP Adherence (i.e., reported taking PrEP 3 consecutive days prior to visit)		0.091		0.78
No	59.79 (11.12; 31)		58.81 (8.53; 41)	
Yes	55.41 (11.58; 55)		58.38 (7.24; 61)	
Stimulant substance use (i.e., poppers, methamphetamine, cocaine, ecstasy, amphetamine, other stimulants)		0.016		0.059
No	53.64 (10.45; 38)		56.93 (7.97; 45)	
Yes	59.64 (11.79; 48)		59.84 (7.38; 57)	
Any substance use (alcohol and marijuana excluded)		0.027		0.032
No	53.33 (10.86; 31)		56.33 (8.43; 36)	
Yes	59.04 (11.50; 55)		59.77 (7.12; 66)	

146 Paediatric Antiretroviral Treatment Uptake, Treatment Adherence, Regimen Switches, and Retention in Care in Namibia

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Background: AIDS is among the top 10 medical causes of death in Namibia. In August 2016, 9, 462 children in Namibia living with HIV were receiving antiretroviral therapy (ART) in the public sector. The assessment aimed at determining ART uptake, adherence to ART, retention and regimen switches among pediatrics.

Methodology: A longitudinal analysis of routinely collected paediatric data from 2010 to 2015 in the electronic dispensing tool (EDT) database in Namibia was conducted. Data on paediatric ART patients from the 50 main public health ART sites in Namibia was extracted into excel, anonymized, cleaned and analyzed using Stata v11 and Microsoft-excel to generate percentages, perform survival analyses, and determine associations between variables.

Results: A total of 5,476 children aged 0-14 years were enrolled for ART from 2010 to 2015. The number of children starting ART decreased over the years. Thirty percent (30%) of these newly enrolled children in 2010-2015 were 1-4 yrs old. Eight percent (8%) of the 5,476 children switched from 1st to 2nd line ART regimens. 61% of the switches were observed among males (log-rank test: p=0.000) and the 10-14 age group. The main reason for switching was virological failure. The rate of switching from 1st to 2nd line ART regimens increased after 12 months of treatment. Younger children 0-4 years (59%) tended to be more LTFU than older children.

Conclusions: Paediatric ART enrolment has been reducing over the years. Most switches from 1st to 2nd line ART regimens were observed among the males and the 10-14 year age group. Clinical factors could attribute to early switching.

Routine analysis and use of EDT data for program operational research is important in identifying ART trends and signals for decision making. Efforts should be put in place to ensure increased pediatric uptake and adherence to first-line regimens.

147 Associations between Beliefs about Medication and ART Adherence in Perinatally HIV-Infected Young Adults

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Background: Young adults (YA) are at risk for sub-optimal adherence to antiretroviral therapy (ART) and are less likely to achieve sustained viral suppression than other age groups. The role beliefs about ART might play in adherence has not been examined in perinatally infected YA (PHIVYA) in the US.

Methods: In the seventh interview of CASAH, a longitudinal study of NYC PHIVYA, participants completed a psychosocial assessment including the Beliefs Medication Questionnaire (BMQ). Using two 5-item sub-scales, the BMQ measures a) beliefs about necessity of ART to maintain health and b) concerns about ART effects. Participants also answered three adherence self-report items (number, regularity, and rating of pill-taking in past month) and completed monthly-unannounced telephone pill-counts after the interview. A Necessity/Concerns differential score was computed using the difference between the BMQ sub-scale scores to examine the relative strengths of necessity beliefs and adverse effects concerns. Using correlations of continuous variables and t-tests, we examined relationships among BMQ scores, self-reported adherence, and pill count adherence.

Results: Participants were 19-29 years old; 60% female; 51% Hispanic/Latino; and 65% African-American/Black. Average pill count (87%) and self-reported adherence (81%) were significantly correlated with each other ($p < .01$) and with ART necessity ($p<.03$), but not concerns. The Necessity/Concerns differential was correlated with self-reported adherence ($p<.01$), but not with pill count. Demographic characteristics were not associated with BMQ variables or adherence except that participants $\geq$25 years old had higher pill count adherence ($p<.05$).

Conclusions: Two dimensions of medication beliefs were significantly associated with adherence, similar to findings in adult populations. Further research is needed to examine the full range of ART beliefs influencing adherence in those taking lifelong ART. The BMQ might be an important tool to facilitate communication between providers and PHIVYA patients and target interventions.

148 Recent Drug-Use and Self-Reported Adherence among HIV-Positive, Stimulant-Using MSM

Sara Lammert (presenting), Keith Horvath

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Background: Stimulant use is prevalent among men who have sex with men (MSM) and poor adherence to antiretroviral therapy (ART) among stimulant-users is well documented. The goal of this study was to assess whether recent drug-use (≥2 months) or no use. Recent drug-use and adherence data from this population can be implemented in adherence interventions currently in development.

Methods: HIV-positive, stimulant-using MSM were recruited through Grindr™ to participate in pilot testing of APP+ mobile-app. Baseline data included demographics, current drug-use of 14 illicit substances, and self-reported 30-day adherence to ART. Kruskal-Wallis was used to determine differences in self-reported 30-day adherence to ART by drug use (≥2 months, no use).

Results: Ninety men were recruited and completed baseline surveys. Participants were majority white (61%) and 37 years old (range: 20–61). All participants reported taking HIV medications and median 30-day adherence to ART was 92% (IQR: 80–95). 97% reported recent drug use in the past two months and more than half of participants had used marijuana (60%), poppers (60%), and methamphetamine (60%) in the previous two months. Men who had used pain killers (p=0.0054), downers (p=0.0046), GHB (p=0.002), ketamine (p=0.0160), heroin (p=0.0161), and speedball (p=0.0040) in the past two months reported lower 30-day adherence than men who had used these drugs longer than 2 months ago or had never used. Greater poly-drug-use in the past 2 months was associated with a decrease in 30-day adherence (p=0.0003) among stimulant-using MSM. Those reporting recent drug-use of 5+ substances (n=14) reported taking only half of their ART in 30 days (49%).

Conclusions: HIV-positive, stimulant-using MSM with recent use of pain killers, downers, ketamine, heroin, and speedball are particularly strong candidates for additional drug use and adherence counseling.

149 High-Risk Sexual Exposures in a Sample of HIV-Positive, Stimulant-Using MSM: Partner PrEP Use, Viral Load, and Implications for Adherence Programs Targeting Substance Users

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Background: Stimulant use is associated with poor viral control and condomless anal sex (CAS). We describe the frequency of high-risk sexual exposures of stimulant-using, HIV+ MSM with their HIV-/unknown sexual partners.

Methods: Self-reported HIV-positive, stimulant-using men who have sex with men (MSM) with problematic antiretroviral therapy (ART) adherence in the US completed the baseline survey of the APP+ mobile app intervention study. Ninety men were recruited from Grindr™ and completed demographic, CAS in the past 2 months, 30-day percentage ART adherence, and most recent viral load (VL) items. High-risk sexual exposures were defined as CAS encounters with HIV-/unknown partners where the HIV-/unknown partner was not on PrEP and/or the HIV-positive partner had a detectable VL (≥50 copies).

Results: Participants were majority white (61%) and 37 years old (range: 20-61). Seventy-one men had anal sex with another man in the past two months, of which 90% (n=64) reported at least one CAS encounter. Of the total number of CAS exposures (n=579), 14% (n=82) were with HIV- partners, 11% (n=66) were with unknown status partners, and 75% (n=431) with HIV+ partners. Participants reported that 53% (n=80) of sexual encounters with HIV-/unknown status partners occurred where the HIV-/unknown partner was not on PrEP. Among these 80 encounters, 47% were with HIV+ participants whose last VL was undetectable, while 53% were with HIV+ men whose last VL was detectable (M(VL)=76,612). Percentage 30-day adherence within undetectable encounters was 90% compared to 70% among detectable encounters. Overall, 7% (41/579) of sexual encounters (representing 5 unique men) were classified as high-risk sexual exposures.

Conclusions: A relatively high percentage (46%) of CAS encounters with HIV-/unknown partners occurred in the context of PrEP use, which is encouraging. However, 41 high-risk sexual exposures among this sample of 90 men is cause for concern and suggests further adherence supports are needed for HIV+, stimulant-using MSM.

150 Addressing Depression in HIV Care though a Collaborative Care Model

Tracey Brichacek (presenting), Ann Avery, Monica Lee, Marielee Santiago

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Background: To optimize the HIV care continuum, it is imperative to integrate behavioral health care into primary HIV care. People living with HIV experience higher rates of mental illness than the general population, increased rates of substance abuse, and are more likely to have experienced trauma within their lifetime. Depression, in particular, has a detrimental effect on physical wellbeing. Patients struggling with depression have higher viral loads, lower retention rates, poor medication adherence, and over utilization of emergency room visits for care. Screening for behavioral health can identify potential issues, but screening is often inconsistent, underutilized and lacks standardized practice to link patients to appropriate resources. A collaborative model has been useful in general primary care.

Method: All patients are screened on an annual basis using the PHQ2/PHQ9 Depression Screen. Patients with Moderate to Severe Depressive symptoms, as indicated by a PHQ9 score of 10 or greater, are identified and engaged by a behavioral health coordinator (BHC). The BHCs follow this cohort closely to re-measure for depressive symptoms, consult with a team psychiatrist and facilitate a stepped care approach that includes self-management, support groups, psychotherapy, medication and psychiatry. BHCs are teamed with physicians to provide consistency and develop rapport.

Results: Since implementation July 2015, 1438 unique patients were screened, at most recent measurement, 357 reported moderate to severe symptoms. Over half that reported symptoms have not returned as planned.

Conclusion: Depressive symptoms are prevalent yet denial, perceived stigma, mistrust of new staff, addiction issues, co-morbid serious mental illness, transportation, current engagement with mental health provider and lack of consistent phone are barriers to engagement in the collaborative model. Over time, patients note increasing comfort with the BHCs and their role.

Implementation of a collaborative model is feasible in HIV care but is more challenging that in general primary care.

152 4-Week Self-Report Adherence Measures Correlate with Tenofovir Levels in MSM on PrEP

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Background: Subjective self-report measures of medication adherence can overestimate adherence and are generally poor at predicting objective adherence. As PrEP effectiveness is strongly linked to adherence, we sought to determine if certain self-report measures could be used to inform objective PrEP adherence.

Methods: CCTG 595 is a 48-week study of 398 HIV-uninfected MSM randomized to daily text messaging prompts (iTAB, individualized Texting for Adherence Building) versus standard of care using daily TDF/FTC. Self-reported medication adherence was measured using validated measures modified for PrEP: 3-day recall, 4-week Ability and Frequency Recall, 4-week Visual Analog Scale (VAS), ACTG Adherence questionnaire and a three-item self-report Wilson questionnaire. Spearman's Correlations were used to evaluate associations among self-reported adherence measures and intracellular tenofovir-diphosphate (TDF-DP) concentrations at weeks 12 and 48. ROC analyses were conducted to assess performance of selected self-report measures that best predict TFV-DP levels.

Results: Correlations between self-reported adherence measures and TFV-DP concentrations at week 48 revealed that the 3 adherence measures with a 4-week recall period (4-week Ability and Frequency Recall and 4-week VAS) were most strongly correlated with TFV-DP concentrations (Range of Rho's: 0.40-0.41; all p-values < 0.001). Stronger correlation coefficients were observed at week 48 compared to week 12 in 4-week Ability and Frequency Recall. Of these 4-week measures, VAS was the strongest predictor of biologic adherence. An ROC curve assessing the best 4-week VAS cut-score of protective TFV-DP concentrations was 94% (specificity 54%, sensitivity 84%, PPV 90%, NPV 42%).

Conclusions: Although modest, significant associations were observed between self-report adherence and continuous measures of TFV-DP with 4-week self-report measures performing best. Moreover, 4-week self-report more strongly correlated at study end, suggesting that individuals were better able to accurately gauge their adherence behavior. In the absence of drug level measurements, 4-week self-report adherence measures may be useful in PrEP clinical monitoring.

153 Differences between Spanish- and English-Speaking Latino Men who have Sex with Men in Awareness, Accessibility, Acceptability and Use of Pre-Exposure Prophylaxis and Post-Exposure Prophylaxis

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Background: The Centers for Disease Control and Prevention (CDC) estimates the lifetime HIV risk is one in four for Latino MSM. Pre-Exposure Prophylaxis (PrEP) and Post-Exposure Prophylaxis (PEP) are available strategies to help prevent new HIV infections. Unfortunately, limited awareness and accessibility may deter uptake of these strategies.

Methods: Latino MSM were recruited through gay-oriented dating applications (apps) to assess the efficacy of using these apps to identify Latino MSM and engage them in HIV testing, prevention and medical services. Participants completed the study survey based on language preference (English/Spanish). We assessed differences between Spanish- and English-speaking participants in awareness, accessibility, acceptability and use of PrEP and PEP.

Results: A total of 249 Latino MSM were included in this analysis (30 Spanish- and 219 English-speaking). A significantly larger proportion of English speakers had heard of PrEP (86% vs. 70%; p=.031) and PEP (50% vs. 30%; p=.042). Large percentages of both English and Spanish speakers indicated a likelihood of using PrEP (71% vs. 80%, respectively; p=0.57) and PEP (96% vs. 97%, respectively; p=0.46). Smaller percentages of both English and Spanish speakers reported knowledge of how to access PrEP (32% vs. 17%, respectively; p=.079) and PEP (25% vs. 10%, respectively; p=.073). Only English speakers reported currently using PrEP (6%) or having ever used PEP (9%).

Conclusions: English speaking Latino MSM were more aware of PrEP and PEP and had used these products compared to their Spanish-speaking counterpart. Both groups indicated a high likelihood of using these prevention products in the future, but there was a trend toward greater knowledge of how to access these products among English speakers. These findings suggest that efforts need to be made to address the disparity that exists between English- and Spanish-speaking Latino MSM in awareness of PrEP and PEP and how to access both.

155 Patients Prefer Contemporary Antiretroviral Therapy (ART) that Improves Clinical Outcomes, Quality of Life

Ellen Eaton (presenting), Michael Mugavero, Sara Knight, Chastity McDavid

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Background: Patient-centered ART is essential to persons living with HIV (PLWH) to achieve optimal adherence and viral suppression. PLWH have previously prioritized ART efficacy and durability, however, past research was conducted prior to the advent of numerous highly efficacious, single tablet regimens. The objective of this study was to evaluate patient preferences and concerns related to contemporary ART regimens.

Methods: Nominal Group Technique (NGT) was used to evaluate preferences for and concerns related to ART regimens. We included English and Spanish-speaking PWLH ≥ 19 years old who initiated ART between 1/1/2006 and study start date. Participants were asked: Q1. "What do you want this medicine to do for you?" and Q2. "What are your concerns about taking this medicine?" Each patient preference and concern was weighted using multivoting with 1 to 5 points (1 point was assigned for least important, 5 points for most important). Results were compared by race and sex.

Results: A total of 28 participants were recruited: 42% Hispanic (n=12), 57% male (n=16), 4% transgender female (n=2), and 79% (n=22) were receiving a single tablet ART. Most heavily weighted responses to Q1 were clinical outcomes like viral control/cure and improved CD4 cell count (162 points) and improved health/well-being (120 points). Pharmacologic features such as dosing were less important (52 points). Most heavily weighted responses to Q2 were adverse clinical outcomes (110 points) and accessibility/affordability of ART (78 points). Hispanic participants were more concerned about accessibility/affordability (3.8 average points/participant) than non-Hispanic (1.9 points/participant) and women expressed more pharmacologic concerns (3points/participant) relative to men (1.5 points/participant).

Conclusions: PLWH still prioritize ART efficacy but are also concerned about quality of life and cost. Patients' interest in ART cost and access has not previously been described and likely reflects the changing political climate, Affordable Care Act uncertainty, and the concerns of many immigrants living with HIV in the U.S.

156 Differences in Viral Load and Disclosure in those with High versus Low Difficult Life Circumstances

Jade McBroom (presenting), Marcia Holstad

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Background: Difficult life circumstances (DLC) are circumstances that hamper normal functioning, of which the consequences are difficult to overcome on their own. DLC in HIV+ women has been widely reported and found to be associated with poor adherence. We aimed to determine 1) if high versus low DLC can affect viral load and 2) if high versus low DLC can affect disclosure of HIV status in HIV positive women.

Methods: KHARMA (Keeping Health and Active with Risk Reduction and Medication Adherence) is a longitudinal clinical trial that addresses the specific issues of adherence to antiretroviral therapy (ART) and risk reduction behaviors as they relate to women with HIV/AIDS. 193 women were included who had adherence data at baseline. Outcomes included viral load (VL) and disclosure to main sex partner. VL was defined as undetectable (<2.6 log) or detectable (> 2.6 log). High DLC was defined as having >DLC (above the median) while low DLC was defined as having ≤ 8 DLC. Associations between categorical outcomes and DLC were analyzed using Chi-Square tests, while differences in continuous outcomes were analyzed using nonparametric tests.

Results: Of 193 participants, 146 were included due to data completeness. Participants were a mean age of 43, 93% were African American, and 28% were married. We found a very weak correlation between DLC and VL (r=0.15, p=<.05).

Conclusions: Findings suggest that the difficult life circumstances may contribute to disclosure and viral load in HIV positive women. Future research is warranted to examine difficult life circumstances among HIV+ women.

157 Addressing a Critical Shortage in the HIV Workforce: Design and Evaluation of an Interdisciplinary HIV Student Symposium

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Background: The growing deficit of providers specializing in HIV/AIDS stymies efforts to improve care for persons living with HIV (PLWH). One solution to address this issue is engaging more students during their professional curriculum. We describe the results of a student HIV training symposium conducted at Nova Southeastern University (NSU) as a means to garner interest in HIV and strengthen commitments to provide clinical care to PLWH.

Methods: A 4.5-hour symposium was conducted in November 2016 and invited students of NSU's Health Professions Division. Topics included HIV pathophysiology, antiretroviral therapy, pediatrics, pre-exposure prophylaxis, sexually transmitted diseases, and oral healthcare. Symposium faculty comprised a multidisciplinary team from medicine, pharmacy, dental, and social work. To assess the influence of the symposium on student perceptions and satisfaction an IRB approved voluntary survey was administered at program conclusion.

Results: Thirty-seven students attended the symposium, 30 surveys were collected, and of these 28 were from pharmacy student attendees. Because of this, only the surveys from pharmacy students were included in this analysis. Pharmacy student respondents represented a young group of professionals (average 29 years old), mostly women (89%), from various races (32% Asian, 21% White, 18% African American). Students were satisfied with the symposium (93% agreed they would recommend it to others) and found the symposium content relevant (96% agreed professionals in their discipline should be familiar with the concepts learned and 96% agreed these concepts should be permanently incorporated into college curricula). Importantly, the symposium successfully impacted student interest in HIV (86% agreed it enhanced interest in entering the HIV workforce and 93% agreed it improved their confidence in treating PLWH).

Conclusion: An HIV-themed symposium within a health professional curriculum positively affected student's perceived understanding of HIV and was effective in garnering career interest in HIV. Further research may determine best methods to prepare trainees for HIV careers and address impending workforce shortages.

159 Longitudinal Associations between Internalized HIV-Related Stigma and Antiretroviral Treatment Adherence among Women Living with HIV: The Mediating Role of Depression

Bulent Turan (presenting)[1], Whitney Rice[1], Ghislane Atkins[1], Mirjam-Colette Kempf[1], Debbie Konkle Parker[2], Oluwakemi Sosanya[3], Montefiore Tracey Wilson[4], Michael Plankey[5], Joel Milam[6], Phyllis Tien[7], Mardge Cohen[8], Elizabeth Golub[9], Adaora Adimora[10], Gina Wingood[11], Carrigan Parish[11], Torsten Neilands[7], Mallory Johnson[7], Sheri Weiser[7], Janet Turan[1]

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Background: Cross-sectional studies suggest an association between internalized HIV-related stigma (when people living with HIV accept and endorse negative connotations by others about having HIV) and sub-optimal adherence to antiretroviral therapy (ART) among people living with HIV. However, there is scarce longitudinal research on the effects of internalized stigma on ART adherence and on mediating mechanisms.

Methods: In 2013, a 7-item internalized HIV-related stigma measure was added to the Women's Interagency HIV Study (WIHS)—a multi-center cohort study. We used logistic regression to examine longitudinal associations between participants' first assessment (T1) of internalized stigma and self-reported ART adherence (optimal vs. sub-optimal) approximately two years later (T3). For most participants, data on 20-item Center for Epidemiological Studies Depression scale was also available approximately 18 months after the baseline (T2) and was used in mediation analyses (testing indirect effects of stigma on ART adherence mediated by depression using bootstrapping). Race, age, time on ART, illicit drug use, income, and education were entered as covariates.

Results: Internalized HIV-related stigma at T1 predicted sub-optimal ART adherence (<95%) at T3, controlling for ART adherence at T1 (AOR=0.69, p=.01, 95%, CI [0.51,0.92]). Mediation analysis revealed a significant indirect effect of internalized HIV stigma at T1 on sub-optimal ART adherence at T3 through depressive symptoms at T2, while controlling for depressive symptoms and ART adherence at T1; B =-0.04, SE=0.02, 95% CI [-0.10,-0.002]). The direct effect of T1 HIV stigma on T3 adherence was no longer significant AOR=0.75, p=.08, 95%, CI [0.54,1.03]).

Conclusions: These results provide longitudinal support for the hypothesis that depressive symptoms mediate the effect of internalized HIV stigma on suboptimal ART adherence, highlighting important factors to target in interventions to improve ART adherence and HIV-related health outcomes for women living with HIV.

160 Evaluating a Multidisciplinary Practice-Based Approach to Improving Viral Supression and Engagement with HIV Care

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Background: Achieving the UNAIDS 90-90-90 targets requires a dynamic approach to address multiple barriers to care. We provide our experiences of a practice-based intervention to improve treatment adherence and retention in HIV care.

Methods: The Ryan White-funded Immunology Center Adherence and Retention (ICARE) Program at The Miriam Hospital in Providence, RI is a multidisciplinary team of clinic staff which identifies patients with gaps in care (>9months) or detectable HIV plasma viral load (PVL >200 copies/mL) through quarterly clinic database reviews and performs targeted outreach. All patients entered into ICARE system during 2016 were reviewed for sociodemographic, clinical, and ICARE utilization characteristics. We conducted univariate and multivariate analysis to predict variables associated with a composite outcome of: viral suppression (PVL <200 copies/mL) and re-engagement with care (1 medical visit) after entry into ICARE database.

Results: 586 individuals entered the ICARE database in 2016; the median age was 47 years (IQR: 38–54), 66.9% men, 59.7% white, 232 (39.6%) men who have sex with men, and 89.9% prescribed antiretroviral therapy (ART). 135 (23.0%) individuals reported baseline unstable housing, 287 (49.0%), a history of substance use, and 232 (39.6%) a history of mental illness. 192 (32.8%) received at ≥ 1 phone contact and 74 (12.6%) patients met ≥ 1 time with an ICARE team member. As of Jan 31, 2017, 239 (40.8%) achieved the composite outcome. On univariate analysis, patients who achieved the outcome were more likely to be white (OR: 1.66, 95% CI: 1.17–2.36), prescribed ART (OR: 2.96, 95% CI: 1.54–5.72), report baseline stable housing (OR: 2.36, 95% CI: 1.54–3.62), or met with an ICARE team member (OR: 1.97, 95% CI: 1.21–3.22). All variables remained significant on multivariate analysis.

Conclusions Our practice-based approach improved viral suppression and engagement in care. Our findings suggest targeting those with unstable housing and promoting in-person contact.

162 Using Social Media and Mobile Technology to Improve HIV Care Continuun Outcomes among HIV-Positive Youth and Young Adults: Program Description

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Background: HIV-positive youth and young adults (ages 13-34) in the United States have disproportionately lower rates of HIV care engagement, retention, medication adherence, and viral suppression (i.e., HIV care continuum outcomes) compared to other age groups.

Method: As part of HRSA›s Special Projects of National Significance (SPNS) Social Media Initiative, 10 demonstration sites across the Country are implementing innovative interventions using social media and mobile technologies to engage, retain and achieve viral suppression among HIV-positive youth and young adults ages 13-34 over 12-18 months of follow-up. Interventions are currently being implemented. As the Evaluation and Technical Assistance Center (ETAC) for this initiative, we deconstructed each of the 10 interventions and assembled a comprehensive intervention typology that categorizes the main social media and technology components and their associated HIV healthcare functions.

Results: Common social media and technology intervention components include the use of: a) text-messaging services (n=10) that use live (n=5), automated (n=3), or both live and automated text-messaging (n=2); b) social/sexual networking apps (e.g., Grindr, Jack'd, Adam4Adam) (n=8); c) other social media platforms (e.g., Facebook, Instagram, twitter, snapchat) (n=7); and d) new and adapted mobile applications (n=7). The main HIV healthcare functions of the interventions include: appointment reminders (n=8), information/education activities (n=7), self-monitoring/tracking by patients (n=6), communication with service providers (n=6), and medication adherence reminders (n=4). All interventions have multiple components and functions.

Conclusion: Social media and mobile technologies are important tools that may help improve HIV health outcomes among youth and young adults. While the outcomes of this initiative are not yet known, the diversity of social media platforms and technologies being utilized holds promise for improving HIV health outcomes.

164 Patient Empowerment: The HIV Chronic Care Model Saves the Day

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Background: The Chronic Care Model (CCM) has been utilized in disease settings such as diabetes, asthma, chronic obstructive pulmonary disease and congestive heart failure. Little evidence exists in the field of HIV. This project established a CCM for patients with HIV disease through conversion of select stable patients to annual visits with biannual laboratory monitoring while improving confidence in managing a chronic disease with ongoing clinic support.

Methods: Patients were enrolled if diagnosed for three years or more, stable antiretroviral regimen, CD4 count $\geq$350 cells/mm^3 and viral load $\leq$200 copies for two or more years, no-show rate 80% of all laboratory visits for past two years. Exclusion criteria include significant mental health or psychosocial issues, lack of transportation or social support, unstable housing, substance abuse or significant comorbid conditions. The clinical pharmacist, "Coach," provides support throughout the year and serves as a link between patient and provider. Patients are encouraged to utilize the patient portal within the electronic medical record to facilitate communication.

Results: Fifty-one patients were initially enrolled while 46 (90%) remain active. This opens 46 acute care or return patient visit appointments yearly. Forty-one patients (89%) have completed either the annual or semiannual enrollment benchmark. Sixteen patients (100%) completing all required components per protocol remained "undetectable" at six- and 12-month benchmarks. Fourteen (93%) of 15 patients who had biannual labs drawn were "undetectable." Patient satisfaction surveys viewed the CCM as a positive experience and would recommend to others.

Conclusion: Ninety-seven percent of patients with historically stable viral loads were able to manage their own healthcare and maintain "undetectable" viral loads.

165 Lessons Learned from Launching PleasePrEPMe.org, a Crowd-Sourced, Location-Based, Searchable Statewide California PrEP Provider Directory to Connect Consumers Interested in PrEP to PrEP-Friendly Providers

Shannon Weber (presenting)

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Background: According to the US Centers of Disease Control and Prevention, one in three primary care doctors and nurses have not heard about pre-exposure prophylaxis (PrEP). While efforts are underway to train providers and develop policies to increase PrEP access, there is consumer demand to find PrEP-friendly providers.

Method: PleasePrEPMe.org, a crowd-sourced, location-based, searchable statewide California PrEP Provider Directory, launched November 2015 connecting potential PrEP users to willing providers. The website was developed in collaboration with regional partners. Queryable by zip code, city or location, the website scans the directory of 280 clinics mapping the nearest within a customizable mile radius. The website offers resources to empower consumers and support providers.

Results: We solicited user input using heuristic reviews and surveys throughout the development process to ensure the website's look, feel and messaging were consumer-oriented. We invested significant skill, time and resources for building the searchable database and website design to meet consumer desire for a simple search process and information structured in a user-friendly format. To date, more than 6,500 visitors have visited PleasePrEPMe.org with more than 17,000 page views. Separately, willingness from providers to join PleasePrEPMe.org depended on varied PrEP awareness. Having readily available capacity building assistance tools for providers not aware and/or comfortable prescribing PrEP was helpful. For counties with rural populations, low HIV incidence and/or low HIV prevalence, partnering with major influencers, like the State Office of AIDS, along with targeted outreach was key in recruitment efforts.

Conclusion: PleasePrEPMe.org fills the demand of consumers seeking a willing PrEP provider and supports providers to become more PrEP-friendly. We will soon launch online-based chat navigation supporting potential PrEP users in accessing sexual health services. As PrEP uptake continues to increase, our lessons learned may be useful to others developing PrEP provider directories.

167 National 90-90-90 and HIV Care Continua for Key Populations

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Background Men who have sex with men (MSM), people who inject drugs (PWID) and female sex workers (FSW) bear disproportionate burdens of HIV but often lack access to HIV services. We review the published national HIV care continua for these key populations (KPs) to track progress towards the 90-90-90 targets.

Methods For 2010-2016, we searched the Internet, PubMed, surveillance reports, Joint United Nations Programme on HIV/AIDS (UNAIDS) country reports, US President's Emergency Plan for AIDS Relief (PEPFAR) country operational plans, and conference abstracts for KPs continua. We collected data on and methods to derive the estimated number of KPs (a) living with HIV, (b) diagnosed, (c) on ART, and (d) with viral suppression. The continua were graded high, medium or low quality based on the methods to derive the indicators.

Results We found 24 care continua (12 for MSM, seven for PWID, and five for FSW) from 12 countries. HIV diagnosis, ART coverage and viral suppression varied between (a) 5-90%, 2-82% and 1-78%, respectively among MSM; (b) 54-97%, 14-78% and 8-74%, respectively among PWID; and (c) 27-63%, 8-16% and 2-14%, respectively among FSW. Among the KPs, progress toward 90-90-90 for FSWs was the lowest. In 2015, the Netherlands achieved 90-90-90 for MSM and UK for MSM and PWID. The rates of HIV diagnosis were high (>85%) in Kazakhstan (PWID) and the United States (MSM and PWID), however, access to ART and viral suppression were relatively low (<40% and <35%, respectively). Continua from Denmark and Netherlands, using data from national cohorts, were ranked as high quality.

Conclusions Limited data show that few countries have achieved 90-90-90 for select KPs. However, considerable efforts are needed to achieve these targets for KPs in high burden countries. Improved monitoring and evaluation with meaningful community engagement will be required to construct more reliable and standardized KPs continua in order to promote accountability and data-driven programs.

170 Rectal Douching Associated with Receptive Anal Intercourse: A Literature Review

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Background: Adherence to systemic daily oral PrEP poses challenges for some individuals at risk of HIV. Topical microbicides self-administered in association with receptive anal intercourse (RAI) could be an alternative. Rectal douches, reportedly used before or after RAI, could be a good vehicle to deliver topical HIV-prophylaxis. To explore potential adherence to an HIV-prevention rectal douche, we conducted a review of existent scientific literature and "how to" videos in YouTube.

Methods: We searched PubMed and Google Scholar to identify articles on rectal douching in the context of RAI that were published after 1999. We also identified rectal douching videos posted on YouTube. Results are summarily presented.

Results: Up to 88% of men who practice RAI *ever* douched, while 43-64% report *recent* douching; 87-97% of men douche before RAI, 41-83% always and 14-37% frequently; and 35-48% douche after RAI. MSM douche a median of one hour before RAI and 30 minutes afterwards. Water, at times mixed with household products (e.g., soap, vinegar), is used primarily, although up to 31% of men use commercial products. Douching is more common among individuals reporting substance use, STIs, or being HIV-infected. Some douches may affect the rectal mucosa; however, one recent study showed that iso-osmolar douches have few adverse effects. Scant literature is available on women's use of rectal douches in association with RAI, but it appears less frequent than among men (32% vs. 70%). Videos advise using 2-3 doses of liquid and retaining it for 10-30 seconds before expelling.

Conclusions: Given that many people who practice RAI use rectal douches frequently, it can be anticipated that douches that offered HIV-prevention could have good acceptability and adherence. Furthermore, through educational and motivational campaigns the current baseline levels of rectal douching could be increased to promote HIV-prevention douches as alternatives to systemic PrEP.

171 Eliminating the Barriers to Care and Retention for Young Black and Latino Men who have Sex with Men: Rethinking the HIV Prevention and Care Continua

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Background: Young men of color who have sex with men (YMSM) experience higher rates of HIV/AIDS than any other US population. Relatedly, enormous disparities exist in their engagement in the HIV care continuum.

Methods: Using a mixed-methods approach, we examined survey data from a cohort of YMSM, interviews with HIV providers, and focus groups with YMSM to consider adaptations to the HIV continua that reflect experiences of YMSM of color.

Results: Survey results found that 55% have regular access to care and many face structural barriers to care: 34% report food insecurity, 27% residential instability, 30% are unemployed/not in school and 27% lack health insurance. Qualitative data suggest YMSM had inconsistent or limited access to healthcare growing-up; this was related to currently having a regular doctor. Irregular access to care growing-up was related to cultural norms, lack of insurance and parental beliefs about health and medicine. Moreover, culturally competent care was difficult to find; YMSM reported experiences with subpar doctors uncomfortable discussing sexual health and/or sexuality. YMSM typically navigate the healthcare system on their own – a process described as confusing for most.

Conclusions: This study suggests the importance of viewing the stages in the HIV prevention and care continua as complementary rather than separate processes – particularly for YMSM. A new model that integrates these paradigms and accompanying confounding factors (e.g., past experiences with healthcare, navigating complex healthcare systems, cultural competent care) is provided. Our current healthcare system is not well-designed to meet the complex needs of YMSM of color. Interventions such as patient navigation focused on transitioning from pediatric to adult care and/or holistic care may turn the tide of HIV among this vulnerable population.

175 Similar HIV Care Indicators among HIV-Infected Transgender Women and Cisgender Males: Data from the "Seek, Test, Treat, and Retain" Harmonization Initiative

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Background: Transgender women (TW), profoundly affected by stigma and discrimination, are disproportionately at risk for acquiring HIV and often marginalized from community health care. Despite their marked vulnerability, few studies have compared HIV risk behaviors and care indicators between TW and cis-gender males (CM).

Methods: We identified HIV-infected TW and CM participants from four studies included in the National Institute on Drug Abuse-sponsored Seek, Test, Treat, and Retain (STTR) data harmonization initiative. Baseline assessments provided information on demographics, substance use, sexual risk behaviors, and HIV care indicators [self-reported antiretroviral treatment (ART); ART adherence (visual analogue scale); HIV viral suppression (≤200 copies/ml)]. TW participants were matched (1:5) to CM on age and study. We used conditional logistic regression to estimate differences in characteristics between TW and CM.

Results: Among 104 TW and 520 CM, mean age was 34.8 (±10.1 years); 56% were Black, 23% Hispanic, 12% White; 43% current/recent homelessness; and 38% lacked health insurance. During the reference period (range 30-180 days), alcohol and illicit substance use was common with 90% using either/both and 66% using multiple substances. A higher proportion of TW versus CM reported >1 sex partner (48.7% vs. 33.3%, p=0.008) and exchange sex (50.0% vs. 19.8%, p=p=0.41), using ART (52.3% vs. 49.0%, p=0.57), ART adherence (76.6% vs. 76.6%, p=0.96), and viral suppression within 30 days of baseline assessment (58.8% vs. 54.9%, p=0.52).

Conclusion: Significantly higher proportions of TW reported multiple sex partners and exchange sex compared to CM. Both groups reported similarly high levels of condomless sex and substance use. There were no differences in HIV care indicators between groups; however, results indicate both groups require interventions to improve STTR cascade outcomes. Risk reduction efforts are needed for both TW and CM.

176 Toward Prevention-Effective Adherence to Antiretroviral Pre-Exposure Prophylaxis (PrEP) for HIV-Uninfected Partners in HIV Serodiscordant Couples: A Qualitative Analysis from Uganda

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Background: "Prevention-effective adherence" to antiretrovirals used as pre-exposure prophylaxis (PrEP) entails daily dosing during periods of HIV risk, and discontinuation of PrEP in the absence of risk. Neither users' understanding of changing "seasons of risk," nor their willingness to adapt PrEP use accordingly is well understood. We describe perceptions of changing risk and PrEP use as reported by HIV-uninfected partners in serodiscordant relationships from the Partners Demonstration Project.

Methods: The Partners Demonstration Project evaluated an integrated strategy of delivering ART and time-limited PrEP (i.e., until the HIV-infected partner had taken ART for ≥6 months) to 1013 East African serodiscordant couples. Daily PrEP use was encouraged. Seventy-five HIV-uninfected PrEP users from the Kampala study site participated in individual in-depth qualitative interviews. Interview topics included experiences with PrEP initiation and discontinuation, perceptions of risk exposure, feelings about and patterns of PrEP use, and PrEP adherence. Transcribed interviews were inductively analyzed to identify themes pertaining to PrEP use and risk, and coded using Atlas.ti.

Results: Interviewees reported variations in risk throughout the two-year follow-up period. HIV risk was thought to have reduced: (1) when living separately from the HIV-infected partner; (2) after ending the sexual relationship; and/or (3) upon confirming the partner's viral suppression. Perceived risk increased when PrEP users were: (1) actively trying to conceive; (2) unable to negotiate condom use; and/or (3) engaging in unprotected sex with someone of unknown HIV status. In some instances, users elected to miss doses or suspend PrEP use when perceived HIV risk decreased. Evidence that motivation to take PrEP when risk increased also emerged. Overall, however, interviewees' ongoing fear of HIV acquisition left them reluctant to alter PrEP use despite changing "seasons of risk."

Conclusion: Education and support to help HIV-uninfected individuals feel protected while varying PrEP use with changing risk will be necessary for prevention-effective adherence.

177 Do HIV Viral Suppression Rates Vary by Frequency and Type of Healthcare Visits in an Integrated Health System?

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Background: At Kaiser Permanente Mid-Atlantic States (KP), an integrated health system providing comprehensive HIV care in District of Columbia, Maryland, and Virginia, there is increasing use of telephone and/or e-mail encounters in place of additional in-person visits for HIV care. It is essential to determine the impact of these alternate encounters on HIV viral suppression ("VS").

Methods: The study population consisted of adult HIV+ patients in KP who had ≥6 months membership and ≥ 1 viral load (VL) measurement per year in years 2014-2016. We compared VS (last HIV RNA in year

Results: A total of 3,114 patients contributed 6,520 patient-years. In the adjusted model, when compared with ≥ 2 visits, 1 in-person visit alone was significantly less likely to achieve VS (OR=0.61; 95% CI: 0.42, 0.89), as was 1 in-person visit plus a telephone encounter (0.62; 0.49, 0.79). We found no significant difference in VS comparing 1 in-person visit plus email only (OR=0.97; 95% CI=0.77, 1.23) or plus email and telephone (OR=0.89; 95% CI=0.74, 1.07), also compared with ≥2 in-person visits. Additionally, encounter type had no significant interaction with time.

Conclusions: If supplemented by e-mail communications (with or without telephone contact), 1 in-person visit per year was not statistically different with respect to VS compared with 2 in-person visits. More research is needed to know if these findings apply to other care systems.

178 Applying the HIV Cascade Approach to Adherence in Hypertension and Diabetes in Eight Countries

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Background: The HIV cascade made us realize that adherence includes adherence to screening and treatment recommendations as well as monitoring patient outcomes. This study shows how the cascade can be applied to other chronic diseases.

Methods: Literature searches were conducted to identify countrywide prevalence of hypertension, persons diagnosed, persons being treated and percent controlled (140 and diastolic >90 or took antihypertensive medications, 3) published since 2010, 4) reported percent of persons diagnosed with hypertension being treated for hypertension and the percent of treated persons who had a blood pressure below 140/90. Data from the International Diabetes Foundation were used to identify prevalence of diabetes, persons diagnosed and persons with controlled diabetes (Hb1AC

Results: The percent of a country's hypertensives who were had BPs below 140/90 were Canada (45.5%), France (45.7%), Germany (30.3%), Ireland (45.9%), Portugal (24.4%), Spain (14.7%), UK (9.3%) and USA (36.1%). The percent of a country's diabetics who had Hb1AC <7.0%) were Canada (40.0%), France (39.6%), Germany (30.7%), Ireland (33.6%), Italy 22.6%), Spain (37.4%), UK (24.8%) and USA (42.4%)

Conclusion: The HIV cascade is useful in examining the full spectrum of adherence in other chronic conditions. Like HIV, failure to screen, failure to treat and treatment failures are important factors in not controlling these conditions.

180 Home-Based PrEP Services for Gay and Bisexual Men: An Opportunity to Address Structural Barriers to PrEP Uptake and Persistence

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Background: Gay, bisexual, and other men who have sex with men (GBM) are disproportionately affected by the HIV epidemic. Despite the promise of pre-exposure prophylaxis (PrEP) in reducing HIV transmission risk, structural barriers for uptake exist. Determining the interest in using home-based PrEP services (i.e., HB-PrEP) among GBM can help guide PrEP-care delivery interventions for at-risk men.

Methods: PrEP-naïve men (*n*=906) enrolled in a US national cohort of GBM were asked about their preference in using HB-PrEP. We defined HB-PrEP to participants as conducting HIV self-testing from home with PrEP prescription mailing after an initial in-person clinic visit. We examined the associations of demographics, engagement in sexual HIV transmission risk, concern about frequent medical check-ups associated with PrEP, health care access, and PrEP intentions with preference for HB-PrEP compared to not using binary logistic regression.

Results: Most (72.3%) GBM were interested in HB-PrEP. Older men had lower odds of preferring HB-PrEP (AOR=0.98; 0.97-0.99, 95% CI). Men with higher intentions to initiate PrEP had higher odds of preferring HB-PrEP (AOR=1.44; 1.21-1.71, 95% CI), as did men who had engaged in sexual HIV transmission risk (AOR=1.72; 1.19-2.50, 95% CI) compared to those who had not. Higher concern about receiving medical checkups every 3 months was associated with preferring HB-PrEP (AOR=1.35; 1.14-1.59, 95% CI), as was not being located within 30 minutes of an LGBT-friendly provider (AOR=1.50; 1.05-2.14, 95% CI). Men in the Midwest had higher odds of preferring HB-PrEP than men in the Northeast (AOR=1.70; 1.02-2.85, 95% CI).

Conclusions: HB-PrEP has potential to increase PrEP uptake among GBM, particularly for men with barriers to clinic-based care and higher intentions to initiate PrEP. HB-PrEP was more appealing for younger men and those engaged in HIV transmission risk, suggesting HB-PrEP could help reach GBM most vulnerable to HIV and most in need of PrEP.

181 A Unique Population: Adherence to PrEP among HIV-Negative Women Attempting Conception with HIV-Positive Male Partners in the US

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Background: The efficacy of PrEP is dependent on adherence. Little is known about adherence in women who are using PrEP to achieve a safe conception in a serodiscordant relationship in the US. We assessed concordance in adherence measured by self-report and blood levels among HIV negative women who used PrEP for safe conception with HIV positive men.

Methods: In this cohort study, HIV negative women in serodiscordant relationships who desired PrEP for conception at one of 4 medical centers in the US (Boston University, Drexel University College of Medicine, John Hopkins University and Northwestern University) were prospectively enrolled. Self-reported (SR) adherence measures were compared to dried blood spot (DBS) for tenofovir-diphosphate concentrations one month after starting emtricitabine/tenofovir disoproxil fumarate. Steady state dosing adjustment was made based on a 17-day half-life. Spearman correlation was used to assess the association between DBS and SR measured as continuous variables.

Results: Baseline data was collected on 25 women of whom 20 (80%) had both DBS and SR results one month after starting PrEP. Median age was 35 years (34.8 +/- 6.7), 64% were Black, 41% had some college education or above, median length of current relationship was 3 years, 44% worked full time. There was no significant difference in demographics in the 5 subjects with incomplete results compared to the 20 with complete results. There were zero transmissions to date among the women. Mean PrEP use per month was 29 days(+/- 1.87); 85% reported < 1 missed dose. One woman (5%) had a DBS corresponding to taking< 2 tablets/wk; one (5%) corresponding to 2-3 tablets/wk, and 18 (90%) corresponding to ≥ 4 tablets/wk on average. The estimated mean DBS drug level at steady state was median= 1125; IQR=662.84. We found a moderate to strong correlation between DBS and SR (r=0.59, P=0.0061).

Conclusion: This study is unique in that it compares objective and subjective adherence to PrEP in HIV negative women in serodiscordant relationships who are using PrEP for safe conception in the US. In contrast to published studies in females on PrEP, this population was adherent and SR was accurate. These results will be useful counseling and treating women who opt to use PrEP for conception. Future studies are needed to determine the clinical relevance of the adherence categories for PrEP outcomes in women as the categories were developed in studies of men who have sex with men.

183 HIV Testing and Linkage to Care: Community Perceptions of Service Delivery in Birmingham, Alabama

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Background: The Alabama HIV Treatment Cascade depicts 18% people living with HIV (PLWH) whose infection is unknown, and nearly one third of those diagnosed (31%) failing linkage to HIV medical care. Birmingham, Alabama (situated in Jefferson County) has the state's highest frequency of new cases and highest prevalence (40%). To better understand the delivery infrastructure for early cascade services in this area, we sought to assess current practices for HIV testing and linkage to care (LTC) among healthcare, community based organization (CBO), and public health entities.

Methods: Leveraging the Jefferson County HIV/AIDS Community Coalition, 18 in-depth interviews (IDIs) were completed with frontline staff (n=6), mid-level program coordinators (n=6), and agency administrators (n=6), with equal representation from all member organizations (3 CBOs, 2 medical clinics, state and county health departments). Trained qualitative interviewers conducted and recorded IDIs, and associated transcripts were coded for themes using NVivo software. Emergent codes were triangulated through an iterative process during team meetings. This study was supported by a Center for AIDS Research Supplement and approved by an institutional review board.

Results: Overall, participants reported consistency in organization-specific HIV screening activities and service delivery. However, participants reported marked differences in LTC procedures. Some participants highlighted the need for improved communication among organization personnel across agencies to better facilitate successful LTC. Standardized training was suggested as a common component for keeping personnel up-to-date on current HIV testing and LTC practices across partner organization programs, as well as on an array of ancillary skills (e.g., PrEP/nPEP referral and work with individuals with co-occurring disorders).

Conclusions: Despite reported commonalities in HIV testing practices, noteworthy differences in LTC procedures exist among local organizations. Efforts to improve service coordination across organizations, implement centralized testing and LTC trainings, and offer targeted skills training, may be important strategies for improving community-level HIV testing and LTC service delivery.

184 Trends in PrEP Awareness and Use and Associations with Use among MSM, NYC 2012-2016

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Background: New York City (NYC) Health Department expanded efforts to increase awareness and uptake of pre-exposure prophylaxis (PrEP). We examined trends in PrEP awareness and use, 2012-2016, and, for 2016, associations between use and sociodemographic/behavioral factors.

Methods: Data were collected via an online and in-person survey conducted regularly, 2012-2016. Participants were recruited at venues and websites/apps popular among MSM, and eligible if sexually active, aged 18-40 and residing in NYC. This analysis excluded HIV-positive participants. Trends in awareness and use (past 6 months) were examined overall, by age (</≥30), race/ethnicity (Black/White/Hispanic/Other), and survey-type (online/in-person). Regression was used to test significance, with trends adjusted for age and race/ethnicity. For associations with use, sociodemographic factors examined were age, race/ethnicity, insurance status (yes/no), birth country (US/other), education (</≥college degree), and income (</≥$60K). Behaviors examined were condom use (last sex), STI diagnosis (past year) and, in the past 6 months: condomless sex partners (</≥3), PEP use, HIV-positive partner, stimulant or injection drug use (IDU), and exchange sex; these determined PrEP-eligibility, per New York State Guidelines. Covariates bivariately associated with use were adjusted for age, race/ethnicity and survey-type; sociodemogahics were additionally adjusted for PrEP-eligibility.

Results: PrEP awareness increased significantly online (35% to 95%; $p<0.0001$; N=3,081) and in-person (28% to 94%; $p<0.001$; N=1,371). Use also increased online (2% to 28%; $p<0.0001$) and in-person (0% to 26%; $p<0.001$). Increases were seen by race/ethnicity and age. In 2016, use was associated with being insured [adjusted OR (aOR)=2.1; 95%CI: 1.0-4.2], education (aOR=2.0; 95%CI: 1.2-3.3) and PrEP-eligibility (aOR=3.3; 95% CI: 1.6-6.7). All behaviors, except IDU and exchange sex, were significantly associated with use.

Conclusion: PrEP awareness and use increased substantially; by 2016, nearly 3 in 10 MSM reported recent use. Use was strongly associated with eligibility. Differences by insurance and education indicate need for coordinated programs to enhance access to this vital prevention strategy.

186 Treating Indigent Sexual Assault Patients with PEP

Joel Zive (presenting)

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Background: Reaching Fast Track 20/20 goals not only need to come from a coordination of all areas of healthcare, but utilizing existing ones in a different way. In 2013, I received a call from the Alachua County Health Department in Gainesville, Florida, with a request. Can I help get indigent patients who are sexually assaulted Friday and Saturday night obtain PEP medications? While the patient assistance programs (PAP) do get these victims medications, if efforts are made to obtain medications on Monday, frequently these individuals will not get treated within the 72-hour window. Getting these patients medications requires a financial balancing act. At approximately $50 USD a tablet each bottle cost $1500. If the patient is given a three-day supply to cover the weekend without the patient returning, then the pharmacy has an expensive partial bottle on the shelf. Obviously, if this happens more than a couple of times, a strong financial disincentive is created.

Method: Working with the sexual assault victim counselors from the health department, we came up with a successful protocol that utilized input from a pharmacist and the counselors, ER prescribers and Sexual Assault Nurse Examiner (SANE) nurses. From a pharmacy perspective we put together paperwork that streamlined obtaining necessary documentation for the PAP program to obtain billing codes and communicated the SANE nurses how we needed the prescriptions written in the ER. The sexual assault counselors explained to the pharmacy the most culturally sensitive way to dispense the medications and the pharmacy collaborated with the counselors on the most expedient way to obtain necessary documentation and to assure timely follow-up.

Results/Conclusion: We started the program in 2015 and have cared for approximately 4 patients monthly. In addition, recognition of the program has increased awareness in the community and invigorated the pharmacy staff in helping this subset of patients.

187 Association of Self-Reported ART Adherence with Viral Load in HIV+ Criminal Justice-Involved Populations

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Background: Adherence to antiretroviral treatment (ART) is essential to reduce viral load (VL) among people living with HIV (PLH), and to reduce morbidity, mortality and transmission to uninfected partners. Adherence is challenging to maintain, especially for criminal justice involved (CJI) populations. Little is known about how closely self-reported adherence is associated with VL among CJI populations, especially in those released to the community.

Methods: We examined PLH in 7 CJI- focused studies participating in the Seek Test Treat Retain (STTR) collaboration and compared results with PLH in ambulatory care settings from the CFAR Network of Integrated Clinical Systems (CNICS). Self-reported ART adherence among both sets of studies was assessed for the prior 30 days and measured using the visual analogue scale (VAS). VL was measured within 30 days of VAS administration. We adjusted mixed-effects models for age, sex and continuous ART adherence (log-transformed) and estimated associations with VL within each sample, then overall and compared associations to those in the CNICS sample.

Results: The STTR sample included 418 PLH (mean age 44) and 9845 PLH in CNICS (mean age 46). A 10% increase in VAS adherence was associated with a difference (95% CI) of -0.29 (-0.41, -0.17) in log VL in STTR participants, and -0.40 (-0.44,-0.36) in CNICS participants. The associations of VAS with VL were robust when using continuous VL measures or with VL categorized as undetectable or detectable and were not significantly modified in analyses stratified by age, CD4 count, or self-reported health status.

Conclusion: Associations of ART adherence with VL among the CJI sample were significant, of similar magnitude to PLH in community care settings, and did not vary by age or health status. VAS is a valid and convenient adherence measure to support treatment for CJI PLH who are vulnerable to falling out of care.

188 Food Insecurity is Associated with Poor HIV Treatment Adherence among Women Living with HIV in the US

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Background: Food insecurity (FI) is associated with poor HIV treatment adherence, which may undermine viral suppression, but no studies have examined FI and HIV treatment adherence among US women.

Methods: We analyzed longitudinal data (n=1689) from the prospective U.S. Women's Interagency HIV Study, using a validated measure of FI. Outcomes were self-reported ART adherence (<75%, 75-94%, or ≥ 95%) and missed HIV-care visits (previous 6 months) (≥1, or 0). We used multinomial and logistic regression models with random effects, adjusting for potential confounders. The ART adherence models simultaneously included FI assessed at the current and previous study visits (6-month lag); the missed visits model included FI at the current visit only.

Results: One-sixth (16.6%) of women reported <95% ART adherence and 36% had FI. In the <75% ART adherence model, current low and very low food security were associated with 2.7 and 3.2 higher adjusted odds of very low adherence (both $p<0.01$) compared to current high food security (no associations with lagged FI). In the 75-94% ART adherence model, current low and very low food security were associated with 1.7 and 2.6 higher adjusted odds of low adherence (both $p<0.01$) compared to current high food security; lagged marginal and very low food security were associated with 1.6 and 1.7 higher adjusted odds of low adherence (all $p<0.05$) compared to lagged high food security. Current marginal, low, and very low food security were associated with 1.5 ($p<0.01$), 1.5 ($p<0.05$), and 2.1 ($p<0.001$) higher odds of missing an HIV-care visit.

Conclusions: Women with FI were more likely to have both low and very low ART adherence and missed clinic visits. Previous FI is associated with low (but not very low) adherence above and beyond current FI. Structural interventions addressing FI may improve ART adherence over time and could be integrated into HIV clinical care.

189 Strategies for Engagement of High Risk Latino MSM in HIV Prevention Services at a Major Urban Medical Center in New York City

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Background: In 2015, Latinos accounted for 36% of new infections in New York City but they remain underrepresented in HIV prevention programs, and pre-exposure prophylaxis (PrEP) uptake is low. We report early experiences with delivering prevention services to this group through a multi-tiered approach that builds on the city and state-funded End the Epidemic initiatives.

Methods: New York Presbyterian Hospital/Columbia University (NYP/CU) is a large academic medical center located in northern Manhattan, a predominantly Hispanic/Latino community. With the support of the city and state funds, a PrEP program was created and linkages with community based organizations like the Latino Commission on AIDS (LCOA) were formed.

Results: NYP/CU HIV Prevention Team consisted of Spanish speaking providers, peer navigators/counselors, and social workers with experience navigating the local and state systems. Between 1/2015 and 1/2017, NYP/CU HIV Prevention Team assessed 436 individuals for PrEP, mean age 29.6 years old and 47% (205) identified as Latino. Among Latinos assessed for PrEP, 48% were either undocumented, using a temporary visa and/or uninsured. This is compared to 38% Blacks and 31% Whites who were uninsured. 62% (61/99) of Latinos started PrEP. 56% (55/99) of Latinos were retained in care at 24 months compared to 40% Black and 65% Whites.

Conclusion: Latino communities are often highly impacted by HIV and face unique structural (insurance, immigration status) barriers to PrEP. A multicomponent framework for PrEP implementation is critical for this group and needs to include focused outreach, access to social work and care coordination services in addition to strong linkages with community based organizations experienced in engaging the populations they serve. As we head into the 5th year of PrEP availability, continuous evaluation and monitoring of affected populations reached by PrEP programing is how we will truly End the Epidemic in the US.

190 Food Insecurity is Associated with Post-Traumatic Stress Disorder, Generalized Anxiety, and Perceived Stress Among Women Living with HIV in the US

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Background: Food insecurity (FI) may increase exposure to stressful life experiences, and undermine psychological coping mechanisms. Poor mental health is known to compromise treatment adherence and HIV outcomes. Few studies have investigated the relationship between FI and post-traumatic stress disorder (PTSD), generalized anxiety disorder (GAD) or perceived stress (PS) among women living with HIV (WLHIV).

Methods: We analyzed cross-sectional data (2015) from the U.S. Women's Interagency HIV Study (n=1,534 (GAD); n=445 (PTSD, PS)). We measured FI using the validated Household Food Security Survey Module. Outcomes were PTSD (DSM-IV PTSD Checklist – Civilian (PCL-C); score 17-85), anxiety (GAD-7 Scale; score 0-21), and perceived stress (Perceived Stress Scale (PSS-10); score 10-50); higher scores indicate worse outcomes. Screening positive for PTSD and GAD (dichotomous) was based on published algorithms. Analyses utilized multiple linear or logistic regressions for continuous or dichotomous outcomes, adjusting for potential confounders.

Results: Among participants, 18% screened positive for PTSD, 16% screened positive for GAD, and 33.5% had FI. In adjusted models, compared to high food security: low and very low food security were associated with 5.4 (SE=1.9) and 8.0 (SE=2.5) points higher PCL-C score (both $p<0.001$).

Conclusions: FI is associated with PTSD, anxiety and perceived stress among WLHIV, exhibiting dose-response relationships. Longitudinal research should investigate directionality, and identify mechanisms through which FI may potentiate trauma and anxiety disorders and undermine the health and quality-of-life of WLHIV.

194 "HIV: a Visitor that is Not Invited" – Reasons for Missed Appointments and Non-Adherence among HIV-Infected African Migrants

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Background: Studies have shown that 15% of Danish HIV-infected individuals have adherence difficulties and among ethnic minorities non-adherence have been reported to be six times more prevalent. Limited health literacy is a known barrier for adherence and it is important to identify subgroups at risk for non-adherence to tailor treatments for their specific needs. A pilot study among HIV-infected African migrants showed that 39% did not attend their appointments during a six-month period. The aim of this study was to explore reasons for missed appointments and non-adherence among HIV-infected African migrants.

Methods: Semi-structured interviews were carried out with HIV-infected African migrants at the Department of Infectious Diseases at Aarhus University Hospital from May to November 2016 and took place outside the hospital. Digital audio-recordings of the interviews were transcribed and analyzed using thematic analysis.

Results: Thirteen HIV-infected African migrants were interviewed. The majority reported similar reasons for not attending their scheduled appointments and non-adherence. Many reported complex life-situations. The main themes occurring were: 1*) Lack of acceptance of HIV status* (cultural beliefs and religion, knowledge of HIV), 2) *HIV-related stigma* (self-stigma and external stigma in own culture, decisions of disclosure), 3) *Competing chronic diseases* (difficulties in navigating in and understanding the complexity of the healthcare system), 4) *Loneliness* (lack of social relationships, managing health issues alone compared with the traditions in their cultural background where the family is a social resource and support).

Conclusion: Our study demonstrates important barriers for adherence on both individual, social and system level. The cultural background, and the specific life situation needs to be considered, when development of targeted interventions, to increase attendance, adherence and health literacy. We have identified a group of patients in need of support when appointments are missed, when non-adherence is challenge and when there are difficult navigation issues in the Danish healthcare system.

195 Cumulative Days of Depression and All-Cause Mortality in Women Living with HIV

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Background: While research has linked depression to mortality among HIV-infected adults, most work has focused on a binary (present/absent) characterization of depression. However, depression is episodic, and most interventions aim to shorten depressive episodes rather than prevent them altogether. Measuring depression burden over time may provide a better indication of the potential survival benefit of depression interventions.

Methods: HIV-positive participants from the Women's Interagency HIV Study (WIHS) were followed from their first visit in/after 1998 until death, five years of follow-up, two consecutive missed visits, or WIHS administrative censoring. Depression was assessed at semi-annual visits using the Center for Epidemiologic Studies of Depression (CES-D) scale. An area under the curve approach was used to translate longitudinal CES-D scores into a time-updated measure of percent days depressed (PDD). We estimated the prospective effect of PDD on all-cause mortality using a marginal structural pooled logistic regression model with inverse probability of continuous exposure and censoring weights to address time-varying confounding and informative.

Results: Overall, 824 women contributed 3,384 woman-years and experienced a mean (standard deviation) of 37% (1.1%) of days depressed. Ninety-four participants died during follow-up (2.7 deaths/100 woman-years). PDD demonstrated a dose-response relationship with mortality: those in the highest PDD decile experienced 4.2 (Hazard ratio=4.2 95% CI: 1.8-9.8) times the mortality rate of those in the lowest decile. A 25% increase in PDD, corresponding to an additional three months per year spent depressed, increased mortality by 40% (HR=1.4 95% CI=1.2-1.6).

Conclusion: Our findings extend earlier work by demonstrating a dose-response relationship between increased percent of time spent depressed and an increased all-cause mortality rate. While complete elimination of depression is often unrealistic, these results suggest that interventions to shorten the course of depressive episodes among HIV-positive women could produce a meaningful improvement in survival.

197 Savings Groups have a Stronger Positive Effect on Adolescent Girls and Young Women in Namibia

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Background: Economic strengthening (ES) activities are important for People Living with HIV (PLHIV) and affected households to cope with effects of HIV. The Village Savings and Loan (VSL) program is an ES intervention designed to mitigate the impact of HIV/AIDS by addressing poverty, food security, and income generation through community micro-credit models.

Methods: Program data was collected for a sample of VSL participants randomly selected in eight Namibia districts. Data was analyzed for 202 beneficiaries at baseline and end of the VSL cycle (July 2015 to December 2016). 93% (188) were female (14 29 years) and 67% (125) of the adults and 71% (10) of the young women were PLHIVs and on antiretroviral therapy (ART).

Results: The positive effects of savings groups on women was uniformly positive for all ages with respect to income sufficiency and perception of transport cost as a barrier to health care, but for number of meals/day the effect was greater for young women. The percentage of young women (13-29 y/o) eating only one meal per day fell by 57%, and by 18% for older women (30-84 y/o). Both groups reported expanded dietary diversity. The average number of months with insufficient income dropped from 5.5 to 4.3. The cost of transport as a barrier to keep clinic appointments fell from 60% to 53% among young women and from 50% to 42% among adults.

Conclusion: Participation in VSL had a positive impact for all adults with respect to nutrition, income and perceived barriers to healthcare. The results show that there was a more positive effect on young women with regard to their meal intake.

202 Geographic Accessibility to HIV Comprehensive, Coordinated Care (CCC) in the US

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Background: Structural barriers, like inadequate proximity to services, may impede access to care and contribute to health disparities. We examined geographic accessibility to CCC in the US to understand its role as a potential barrier to HIV care.

Methods: We integrated publicly available data to estimate travel time to CCC—provision of HIV-related core medical (e.g., outpatient medical care) and support (e.g., case management) services—in the contiguous US. Data included county-level HIV surveillance data (2013, AIDSvu.org), addresses of HIV service facilities (Health Resources and Services Administration), and Ryan White program grantees (Tracking Accountability in Government Grants System). Urbanicity data (super-urban, urban, peri-urban, rural) came from the 2015 Area Health Resources File. We estimated travel time between each population-weighted county centroid and the closest geocoded CCC location using ArcGIS v10.3.1 with road networks from StreetMap Premium. Optimal travel time was defined as <30 minutes, a common primary care accessibility threshold.

Results: We identified 674 CCC service locations across 3,116 US counties, with median travel time to care exceeding 30 minutes in >85% of counties. Among counties in the top HIV prevalence quintile (≥263 cases per 100,000 county population), median travel time is 44 minutes (interquartile range [IQR] 63 minutes), with median travel time in the South (50 minutes [IQR 60 minutes]) between two and five times longer compared to other regions. While median travel time to care from peri-urban and rural counties in the top HIV prevalence quintile is highest in the Midwest (81 and 102 minutes, respectively), the South claims many more top-HIV prevalence peri-urban and rural counties than other regions, driving higher travel time to CCC in the South.

Conclusions: Increasing geographic access to CCC is a priority, particularly for Southern peri-urban and rural populations. Promoting alternative care delivery models (e.g., telemedicine) and HIV workforce expansion remains critical.

203 A Rising Tide: Using a Public Health Overlay to Drive Regional Improvement along the Continuum

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Background: In order to more fully impact the entire continuum of care, NYLinks developed a plan that involved numerous health care facilities and community based organizations along with consumers, county representatives and state stakeholders to work on individual improvement projects but to also come together regionally to address broader public health issues of care concurrently. Each participant was encouraged to more generously identify people; in care, in need of care, and out of care, with an eye toward working to achieve both organizational gains as well as regional gains in the areas of linkage to care, retention in care, and viral load suppression.

Method: The goal of NYLinks is to find ways to improve linkage, retention, and viral load suppression for HIV+ individuals throughout New York State. One of the tools used to do this was the formation of regional provider groups who would utilize QI, peer sharing, and data analysis on both an organizational and regional level. Providers within these groups fell along a continuum in terms of their ability to create and implement improvement interventions with some being adept and others just at the beginning. Providers involved in NYLinks receive technical assistance in data acquisition and analysis, Quality Improvement methodologies, Intervention development, and collaboration. They are also provided with a venue for networking and sharing their work among peers. The goal of this is for each individual provider to investigate their own system of care and develop interventions, based on data, that will drive improvement. Often these interventions require cross collaborative relationships or involve cross platform engagements. To date, this model has generated a number of organizational and regional interventions that have proven impactful in improving linkage to care, retention in care and viral load suppression (vls); whether it is a county wide linkage model called Crisis Captain, an individual organization utilizing LEAN principles to improve vls among new patients, the development and use of organizational and regional cascades to drive improvement, or a peer based model of more effectively reaching transgender teens, the work that takes place in these groups has proven to increase collaboration, idea transference, and commitment to a shared ideal. The work has also shown marked improvement in regional data related to the impact areas as confirmed by NYS surveillance.

Results: The addition of a Public Health Overlay to regional processes of individual, organizational improvement creates a broader environment into which improvement can take place. Geographic definitions for such regions should be loose rather than rigid. Groups should be inclusive rather than exclusive. It does take a bit of time for things to come together and this should be built into any process.

Conclusion: The use of a regionalized process of improvement is highly effective in increasing both the reach and the scope of improvement activities, leading not only to individual improvement but to broader geographic improvement as well.

204 "Estemos en Contacto": Improving Retention in HIV Care in Lima, Peru

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Background: Retention remains a central challenge in HIV care. Theory-based, context-specific educational materials that promote visit adherence via patient-provider communication may contribute to improved retention.

Method: We translated and adapted educational materials from the CDC's evidence-based Retention in Care Trial for implementation at a referral hospital in Lima, Peru. Educational messages were specifically tailored to address three previously identified barriers to retention in care in this population: limited knowledge about the importance of visit adherence, lack of navigation resources, and a negative perception of the HIV program. Materials were then adapted to address each barrier following the Theory of Planned Behavior. Resulting materials were presented for feedback with providers and patients, prioritizing acceptability, responsiveness, and understanding.

Results: Regarding format, providers (n=5) perceived original templates to be dull and not engaging. Messages that emphasized the negative consequences of missing appointments, such as mortality, were perceived as demoralizing. Instructional steps to scheduling appointments were considered useful. Suggestions for improving format were to display photographs or pictures, minimize text, and use brighter colors. In response, a design team including a researcher, a graphic designer, and a photographer developed three posters and one brochure featuring adapted messages accompanied by photographs of local HIV providers. Materials were then reviewed for beta testing with patients (n=46) and providers (n=11). Revised materials were perceived as respectful, friendly, and clearly communicated the importance of retention in care. Patients gave positive feedback regarding including local providers in the material. The materials were submitted for IRB approval.

Conclusion: Ensuring the acceptability of educational material, particularly those requiring adaptation and translation, is a critical preparatory step for health promotion interventions. Future research will implement these materials as part of a local educational messaging intervention.

205 Adherence to Antiretroviral Therapy among HIV-Infected Children in Ghana who do not know their HIV Status

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Background: Only a fraction of children living with HIV in sub-Saharan Africa know their status. This has potentially critical implications for their health outcomes as non-disclosure has been linked with poorer adherence to antiretroviral therapy (ART). Adherence to antiretroviral ART remains one of the greatest obstacles in pediatric HIV care. The purpose of this study was to examine the rate and predictors of adherence among children in Ghana who have not been informed of their HIV-positive status.

Methods: Baseline data from HIV-infected children aged 7 to 18 years and their caregivers enrolled in the "Sankofa" project were used. The ongoing site-randomized Sankofa pediatric HIV disclosure intervention trial (NCT01701635) is being conducted at two teaching hospitals in Ghana. Antiretroviral medication adherence was measured using: (1) caregiver 3-day recall, (2) child 3-day recall, and, (3) pharmacy records for antiretroviral time-to-refill.

Results: Four hundred and twenty child-caregiver dyads were enrolled from January 2013 to December 2015. Using three-day recall, 14.7% and 11.9% of children and caregivers, respectively, reported ART non-adherence. However, only 47.5% of children had ≥95% adherence using time-to-refill data. Median adherence by ART time-to-refill was 93.0%. In multivariable logistic regression analysis, older age of the child, help from mother, father, or non-family member in taking medication, and closer distance to the hospital were associated with <95% adherence, while higher level of caregiver education was associated with ≥95% adherence.

Conclusion: ART adherence rate was suboptimal, as per World Health Organization guidelines, in this population of children who were unaware of their HIV-positive status in Ghana. Follow-up during the course of the Sankofa study will allow for further evaluation of the predictors and the effects of the Sankofa HIV status disclosure and adherence intervention on treatment adherence, viral load and other health outcomes.

206 Risk Factors for Poor Retention in HIV Care Using Clinic and Statewide Surveillance Data

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Background: This study seeks to incorporate statewide surveillance data in conjunction with clinic-level data to evaluate risk factors for poor retention in HIV care. Specifically, to determine whether patients lost to our HIV clinic (~10% annually) are entirely lost to care or have received care elsewhere as indicated by viral load reporting to surveillance.

Methods: This retrospective cohort study was performed at an urban, academic, Southern US HIV clinic including patients with at least one completed HIV primary care visit during 2015. Retention during 2016 was measured according to the Health Resources and Services Administration (HRSA) indicator: 2 or more visits separated by ≥90 days. For patients without a primary care visit at our clinic in 2016, the Alabama Department of Public Health (ADPH) will provide a status of care (out of care, in care elsewhere, died, and cannot locate) based on statewide HIV laboratory surveillance and/or mortality information.

Results: In 2015 3,107 patients completed at least one visit (76% male, 63% black, 52% MSM, mean age 46 years). Of those, 2,313 (74%) met the HRSA retention measure in 2016. Among the 794 patients (26%) not retained by the HRSA indicator (significantly more common among men, youth, MSM, IDU), 292 (9%) did not have a single visit in 2016 and were submitted to ADPH to determine status of care. A multinominal regression of the clinic and ADPH status of care will be fitted to demographic, clinical, laboratory, and behavioral patient reported outcomes captured during the index visit in 2015.

Conclusions: We anticipate there will be differences in factors significantly associated with patients classified as out of care, poorly retained (patients who have only one completed clinic visit), and retained in care by the HRSA measure during 2016.

208 Points of Intervention in the HIV Care Continuum for Caribbean-Born Immigrants in Florida

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Background: Black Caribbean-born immigrants in the United States have higher HIV prevalence compared to other racial/ethnic groups. The study objective was to assess disparity among Caribbean-born immigrants for key points on the HIV Care Continuum.

Methods: We analyzed cases aged ≥ 13, who met CDC HIV case definition during 2000 – 2014. Multilevel logistic regression with US-born Blacks as a referent group was used to estimate adjusted odds ratios (aOR) for: late diagnosis (defined as not diagnosed with AIDS within 3 months of HIV diagnosis (n=40,270)), non-linkage to care within three months (non-linkage) for those diagnosed between 2014-2015 (n=3,488), non-retention in HIV care (defined as non-engagement in care at least twice, ≥3 months apart within 2015 (n=56,119)) and non-viral suppression (non-VS) in 2015 for those in care diagnosed between 2000 – 2014 (n=30,577).

Results: Compared to U.S. born Blacks, Bahamians and Haitians were more likely to have late HIV diagnosis (aOR 1.76, 95% confidence Interval [CI] 1.40 – 2.22; aOR 1.32, 95% CI 1.24 – 1.42). There were no significant differences for non-linkage between immigrants from any Caribbean country and U.S. Blacks. Compared to US-born Blacks, Bahamians and Haitians were more likely to be non-retained in HIV care and but less likely to be non-VS (non-retention: aOR 3.13, 95% CI 2.40 – 4.08; aOR 1.52, 95% CI 1.39 – 1.66. Non-VS: aOR 0.87, 95% CI 0.79 - 0.96; aOR 0.65, 95% CI 0.51 - 0.82).

Conclusion: Compared to other racial/ethnic groups, Caribbean immigrants are most at risk for delayed diagnosis and non-retention, but less at risk for non-VS once in HIV care. Further research is needed on a larger sample for non-linkage, and, for exploration of contextual risk factors contributing to increased risk for delayed diagnosis and non-retention, and, the protective effect for viral suppression.

209 Intervention Readiness Assessement: The Intervention Before the Intervention

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Background: The common practice is for organizations to implement interventions in order to improve the care they provide to HIV+ individuals. Interventions come in all shapes and sizes, for all populations, and for each point along the continuum. However, little effort is spent on determining whether the organization seeking an intervention is actually intervention ready. NYLinks proposes a simple and direct assessment that can be utilized by organizations to determine whether they have the foundation required for intervention implementation.

Method: NYLinks, part of Governor Andrew Cuomo's New York State Ending the Epidemic Initiative, is charged with improving linkage to care, improving retention in care, and improving viral load suppression for individuals who are HIV+. One of the primary ways this is done is through the collection and dissemination of interventions. Early on, NYLinks discovered that member organizations fell along the full range of capability when it came to implementing interventions. Some organizations had years of experience, others struggled to initiate even simple processes, while the great majority fell somewhere in the middle. As a very large state with a very diverse collection of HIV providers, NYLinks determined that the best way to move towards an improvement modality would be to being with a process that allowed organizations to self-assess their readiness to implement an improvement intervention. To that end, NYLinks staff developed a Linkage and Retention Intervention Self-Assessment Tool. The Assessment Tool looks at a number of variables, including; area an organization is looking to intervene in, availability and access to data, ability to analyze data, Quality Improvement experience, resources available in terms of staff, time and money, and support for change within the organization. The assessment was used by organizations to identify areas that needed improvement prior to their attempting to implement an intervention. These areas could then be worked on in order for the organization to gain a readier state of implementation. The process was very successful in helping organizations identify areas in need of improvement allowing them to, when they were ready, implement an intervention much more successfully.

Results: There is a high degree of frustration within an organization that attempts to implement an intervention only to fail due to structural or resource issues. The assessment, while initially looked at skeptically, became a go-to document across the state.

Conclusion: The use of assessment tools has long been known to be effective in determining readiness. To use the same process when it comes to intervention readiness is just common sense.

210 Peer to Peer Engagement on Gay Dating Apps

Alex Garner (presenting)

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Background: Providing current and accurate HIV treatment and prevention information to gay and bisexual men can be challenging, particularly to hard to reach populations. Most gay men around the world use gay social networking apps, such as Hornet, to make connections with other men. Information about treatment options, adherence, or prevention can be poorly received if it comes for a clinical source. Peer to peer education with in a gay social networking app can be an effective strategy for providing gay men with information and resources about treatment and prevention while also fostering a stromger sense of community and support.

Method: Using the model of peer to peer engagement, the Hornet app, in partnership with Brazil's Ministry of Health and UNAIDS, recrutited actual users of the app to serves as peer educators and engage with other gay men around treament and prevention during the Olympics in Rio de Janiero. The men recruited were volunteers and active users of Hornet. They were not working from an office setting and they were not speaking from a script. The peer volunteers received a training to ensure their knowledge around HIV treatment and prevention was at the optimal level. The gained the most current information about PEP, testing, and treatment so they could convey the information and access details to other users. The men were also counseled on providing information in a way that was affirming and sex-positive. An icon was created and places in the peer educators' profile so as to indicate to other users that they were available as a resources for sexual health information. The peer volunteers enaged in organice conversations about sexual health in a safe and inclusive environment. Messages were sent to all app users in the region to alert them to the presence and availabilty of the peer volunteers. The peer volunteers were a diverse group of varied ages and HIV statuses.

Results: The peer volunteers reported a higly positive response from the hundreds of men they had conversations with within the app. Because the social networking app is based on geolocation, the peer volunteers were only accessible to men within their proximity in Rio. This limitiation could be overcome by creating a permanent and easliy accessible hub within the app. Creation of such a hub would require a build on the part of app owners. The initiative also provided the peer volunteers with a stronger sense of community and more confidence when it comes to engagin with other men around sexual health. The initiative was an investment in skills of these peer volunteers allowing them to go on and be more effective health advocates as they continued to make connections with men on the app in the future.

Conclusions: The peer to peer in app initiative was a success but it was only conducted in one city. Next steps would be to scale up at the state or country level. A pilot coountry level program is currenlty being developed and implemented in New Zealand in partnership with New Zealand AIDS Foundation.

211 Considering the Transnational Framework for HIV-Positive Latino MSM to Improve Linkage and Retention in Care Outcomes

Jeff Bailey (presenting)[1], Jorge Montoya[2], Carlos Aguas-Pinzon[1]

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Background: Transnationalism refers to the varied means by which immigrants maintain connections with their place of origin while continuing to establish themselves in their place of settlement. These connections may be manifested with frequent travel between their place of origin and place of settlement, money transfers to family members in their place of origin, the consumption of media, foods, and goods from their place of origin, and many other activities. The consideration of transnationalism in the provision of counseling and support services for HIV-positive Latino MSM may improve linkage and retention outcomes for this population.

Method: A linkage and retention program funded by Health Services and Resource Administrations (HRSA) Special Projects of National Significance incorporates a transnational framework in providing support and HIV navigation services for HIV-positive Latino MSM of either Mexican or Puerto Rican decent. The use of this framework helps HIV linkage navigators discuss how their connection to their country of origin affects their perceptions and attitudes about their HIV status, and the challenges and decisions they face with regards to their HIV care. For instance, this framework may highlight the need for clients to balance travel to their place of origin against medical appointments, or consuming media from their place of origin as a source of comfort and stress management, and being aware of the way in which their connections to their place of origin influences their attitudes and perceptions about their HIV status.

Results: The application of a transnational framework helps HIV linkage navigators identify and discuss potential barriers to HIV care with clients who maintain close connections with their place of origin and consequently develop strategies to address these barriers.

Conclusion: A transnational framework needs to be explored to provide support, counseling, and educational services for clients who maintain connections with their place of origin while establishing themselves in their place of settlement.

212 Staying PrEPared: Supporting Adherence and Retention among PrEP Users

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Background: Adherence to prescribed regimens is an essential aspect of PrEP efficacy. Concerns about individuals' ability to adhere to PrEP are common among professionals in the HIV prevention field who worry that low adherence and inconsistent dosing could increase the rates of HIV infection and related treatment resistant strains of HIV within the community.

Method: One clinic in Birmingham, AL, designed their PrEP program with adherence support in mind. The interdisciplinary team includes educators, social workers, providers, and other health care professionals, each of whom include messages of adherence promotion in their interactions with clients through planned activities and informal conversation. For example, modeled after Project CONNECT, an evidence-informed linkage to HIV care intervention, PrEP clinic clients attend a PrEP Orientation visit prior to their first visit with a prescribing provider. Additionally, on the day of their first visit, and during select following visits, clients attend a group education and support session that includes adherence and retention messaging and dialogue.

Results: Many patients report few anticipated barriers to adherence when they are beginning PrEP, but unanticipated barriers arise. The adherence supportive activities in place in this program assist clients in overcoming unforeseen barriers and contribute to high medication adherence among this cohort. Adherence to appointments can be a challenge among this group, though increasing appointment availability through the expansion of clinic hours will alleviate this issue.

Conclusion: Providers and institutions interested in offering PrEP to clients should keep adherence at the forefront of the planning process. Anticipating barriers to medication adherence and retention in care is essential to developing protocols to facilitate high adherence among PrEP users. Additionally, measurement of medication and appointment adherence over time contributes to continuous quality improvement and provides beneficial information to report to both PrEP users and program stakeholders.

213 What do we Really Know about the Relationship Adolescent Girls and Young Women have with HIV Prevention? A Review and Analysis of the Research and Evidence

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Background: Studies show oral pre-exposure prophylaxis (PrEP) effective in preventing HIV; however, uptake and adherence pose limitations to use among adolescent girls and young women (AGYW), who account for a disproportionate number of new infections globally. The analysis takes an inventory of existing evidence and research on AGYW in sub-Saharan Africa as end users of HIV prevention products, developing a comprehensive understanding of AGYW's experience with HIV prevention to inform product introduction and marketing efforts.

Methods: Studies focused on AGYW ages 15-28 in sub-Saharan Africa were analyzed using: 1) systematic review of existing evidence 2) landscape mapping of ongoing and planned research from 2010-2016 and 3) analysis of the review and mapping. The review utilized the Ability-Motivation-Opportunity framework, combined with marketing's four Ps—product, price, place, promotion—as the inquiry framework. The mapping, informed by structured interviews and surveys, tracked research by study type, location, study size and intent. The analysis employed a journey framework of stages of product adoption, mapping evidence towards each stage.

Results: The review identified factors that influence AGYW's acceptance, uptake and adherence to prevention products and the mapping identified 53 projects primarily in South Africa and Kenya, with acceptability and adherence the primary study areas and oral PrEP the primary product under study. Key gaps in research were identified, including understanding an AGYW's journey from awareness, to use, adherence, and championing a product. All stages of the adoption journey have degrees of unknowns, with the most evidence towards the adherence stage and championing least studied.

Conclusion: This analysis identified gaps in research that limit development of innovative strategies to change AGYW's relationship with HIV prevention, providing an actionable starting point for future research. While there are many ongoing and planned studies, there are significant gaps in research towards understanding how AGYW's think, act and are influenced along the prevention journey.

215 The POWER Health Program: A Novel, Online, Multi-Modal Educational Intervention for HIV-Negative Women and their Male Partners

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Background: Many women and men in HIV serodifferent relationships desire parenthood. Advances in HIV treatment and prevention, such as pre-exposure prophylaxis and treatment as prevention, can facilitate safer conception within the context of serodifferent relationships. Despite these advances, many couples are unaware of and/or are unable to navigate medical systems to access to safer conception options.

Method: The Positive Outcomes for Women Engaged in Reproductive (POWER) Health program consists of a web-based, multi-modal educational curriculum catering to HIV-affected male/female couples and aims to empower couples to take control of their reproductive and sexual health. The POWER Health team reaches their audiences using a web portal containing an array of materials such as patient and provider educational brochures as well as leveraging social media outlets in novel ways. Videos depicting interviews with sexual and reproductive health experts as well as videos with patients, writing blogs, and creating brochures using accessible language are key. All patient materials are reviewed by consumers and published in English and Spanish.

Results: Since February 2015, the POWER Health program developed and posted 95 multi-modal educational pieces online. These pages reached 14590+ views across 5 continents. The most widely accessed pages included: "My TasP Conception Story" (543 views), "Ben Banks Thriving and Fatherhood with HIV" (1157 views) and "Sex Workers in Nigeria Need PrEP" (497 views). Viewers have engaged with the material in various ways, often expressing gratitude. One viewer wrote "I admire your courage," in response to a blog. Another replied "This gives me hope" about the possibility of PrEP.

Conclusions: POWER Health is reaching its intended audience of HIV-affected couples by championing the voices and stories of people who are often silent or hidden. POWER Health educational materials are raising awareness about reproductive health options as well as breaking down social isolation often felt by members of serodifferent couples.

216 PrEP for Family Planning Providers: The Development of a Toolkit

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Background: PrEP (pre-exposure prophylaxis) for HIV prevention is effective, safe and works for women. It's estimated 468,000 U.S. women could benefit from PrEP. Forty percent of women access reproductive health care only, making family planning clinics a logical and efficient location for offering PrEP to women.

Women tell us they want to hear about PrEP from family planning providers. Family planning providers are uniquely skilled to offer options within a shared decision making model focused on women's values and preferences. Prevention of sexually transmitted infections, including HIV, is a core family planning service.

Method: With no comprehensive effort to train family planning providers nor family planning-specific PrEP implementation resources, we developed a Family Planning Provider PrEP Toolkit. Utilizing lessons learned from early PrEP implementation in family planning settings, results from a national survey of family planning providers, qualitative interviews with family planning providers, and web-based discussions with family planning thought leaders, a format for the toolkit was developed. The components included: Getting started; Talking about HIV & PrEP; Who is eligible for PrEP, HIV testing, PrEP prescribing, PrEP follow-up and adherence, Reimbursement, Operations, Distinct populations.

Results: The draft toolkit (January 2017) includes an overview of PrEP implementation for family planning settings with links to thirty-five clinically accurate resources, including three capacity building resources for clinicians. A survey was developed for feedback from website visitors (three hundred visits in the first week). Additionally, thought leaders from identified key stakeholder arenas, including female consumers, were also consulted for feedback. This feedback will inform the the final version to publish March 2017.

Conclusion: Widespread training and implementation support for family planning providers is necessary to reach the 468,000 women who could benefit from PrEP. This toolkit can serve as one method for scaling PrEP amongst family planning providers.

217 Electronic ART and PrEP Adherence Monitoring Devices: Practices and Preferences in United States

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Background: Wearable electronic devices create novel opportunities for medication adherence monitoring and promotion. As pilot work for development of a wrist-worn adherence device, we investigated current medication-taking practices and preferences.

Methods: We recruited a convenience sample of persons aged 18+ taking ART or PrEP to complete an anonymous online survey. The survey link was distributed through listservs and social media.

Results: The 96 respondents, taking ART (47%) or PrEP (53%), averaged 50 years old and were predominantly male (93%) and White (85%). Four-week adherence was high according to VAS (mean=88%, range=36%-100%) and self- label (98% *very good* or *excellent*). Most (86%) took pills once a day, and 71% took only 1 pill. Respondents took pills directly from the bottle (39%) or used a mediset (55%), with 52% at least occasionally using another method. Always taking medications in the same fashion was associated with perfect adherence (32% vs. 14%, p <0.01). One third (32%) reported using a reminder system, such as an electronic calendar (16%) or phone app (8%). Interest in receiving adherence reminders varied by method: smartwatch/band (55%), app (54%), text (44%), email (12%), phone call (5%). Half (48%) indicated interest in using a system involving a wrist-worn device and a tagged pill container. Currently, 7% wear a wristband, 10% a smartwatch and 25% a wristwatch. Interest in system feedback on adherence to themselves (70%) or their provider (76%) varied by receipt method: app (41%), email (36%), website (23%). Interest in smartwatch technologies was greater among younger and White respondents and associated with wanting user feedback (R^2=20%, p <0.001), wanting clinicians to see their adherence data (R^2=5%, p <0.005), and a variable medication-taking regimen (R^2=5%, p <0.03).

Conclusions: About half of respondents were interested in electronic monitoring or reminding, with interest varying by method. Developing successful systems will require substantial user input and population targeting.

218 Acceptability of Targeted Long-Acting Injectable ART: Provider, Parent, and Patient Preferences

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Background: Targeted long-acting (LA) injectable ART will provide people living with HIV/AIDS additional treatment options, yet current acceptability data are lacking. We conducted qualitative research on provider, parent, and patient acceptability and personal preferences.

Methods: At two HIV primary care clinics in the Northwestern US, we conducted 1 focus group discussion (FGD) with 7 experienced HIV care providers, in-depth interviews with 5 parent/guardians of children with HIV under age 16 years, and 4 FDG with key groups of adults living with HIV (n=28), of whom 61% were African American, 32% were MSM. Facilitators led discussions eliciting feedback about potential LA injectable regimens, with prompts on 7 key features (i.e., injection location [home/clinic], pain intensity, required frequency, side effects, volume/syringe size, number of injections per dosing, and bodily site of injections). Multiple reviewers analyzed transcripts with a content analysis approach to identify salient themes.

Results: Providers predicted patients would be enthusiastic about LA options. Parents' interest varied according to their child's age and comfort with injections. Among adults, a LA injectable regimen was less attractive among those adamantly opposed to injections or with persistently suppressed HIV plasma viral loads. Current and former injection drug users were wary of the "trigger" of loading a syringe and would prefer preloaded syringes. Few adults objected to having to come to the clinic to receive injections; indeed, many preferred clinic visits over self-injections at home. Concerns were expressed about possible side effects, additional costs, and lower efficacy of a LA regimen. Moderate pain was seen as more acceptable than the need for two injections at each dosing. There was agreement that the minimal dosing interval should be 2 weeks.

Conclusions: Acceptability research suggests LA regimens should target those newly initiating ART or not virally suppressed and should limit the number and frequency of injections.

222 Cost of HIV Care Services in Kenya's Private Sector; an Alternative from Public Provided "Free" HIV Care Services

Stephen Mutuku (presenting)

National AIDS Control Council, Nairobi, Kenya

Background: Costing estimates direct costs of providing HIV services from healthcare facilities, laboratories and pharmacies. The services include ARVs provision and laboratory monitoring at different levels of private health providers. It also identifies supplies to PLWHIV in private health facilities including stand-alone laboratories and pharmacies. The objectives include (i) compared costs of delivering HIV/AIDS care and treatment across the existing models of care in the private sector against costs in public health facilities under existing guidelines and (ii) understand the motivations and interests of the private for-profit players, to provide HIV related services.

Method: The study utilized Activity Based Costing (ABC) model to estimate the unit costs. The approach adopted ingredient-based, where all the resources (inputs) in the service provision to one client at a facility are measured and their costed.

Results: An inclusion of 21% mark- up on the overheads' (e.g: rent, electricity, water, and maintenance) direct cost was estimated as per literature providing a range of 13% to 30%. Dispensing was the largest cost component in ART service provision in tier 2 and 3 facilities. Other such as reception, triage, 1st and 2nd consultation do not account for a significant proportion of the direct cost of HIV service provision. Estimated cost of ART provision is US$ 589 and US$54.33. Costs per Visit is US$147.20 in tier 2 and between US$88.05 to US$107.28 in tier 3, respectively**.** Tier 4 laboratory costs were the largest component with CD4 Count costing US$285.10, unlike other components which are insignificant to the direct cost. Estimated cost of ART provision is US$1,873.62, and cost per visit is US$468.40.

Conclusion: A comparison of costs in public and private sector providers in the table below.

ART Service Provision; Patient cost per annum				
Tier	Private Sector		Public Sector	Current practive
	min(USD)	max(USD)	Public Sector (HIV Guidelines 2014)	Cost of ART Provision in Kenya
2	US$353.97	US$824.19	Min. US$507.6	Min. US$159.98
3	US$303.22	US$429.13		Average US$240.33
4	US$1,509.26	US$2,237.97	Max. US$872.6	Max. US$405.6

Source: Survey Data, 2016
*** Work in progress with partners

224 HIV and AIDS Situation Analysis in a Devolved Unit of Government: The Case of Kakamega County Public Service, Kenya

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National AIDS Control Council, Nairobi, Kenya

Background: The National AIDS control council (NACC) coordinates the multisectoral response to HIV and AIDS in Kenya. As part of performance contracting, each public sector institution is required to mainstream HIV and AIDS in its core mandate and report to NACC every quarter. To this effect, the Kakamega County with support of NACC conducted a baseline survey on HIV and AIDS situation in the county's public service.

Method: A cross sectional survey was conducted using a standard questionnaire to 42 public service staff at the county. Purposive sampling was used to identify respondents. Consenting county public service staff were asked to complete a questionnaire. Codes were used to identify respondents to ensure complete confidentiality. Data was analyzed using descriptive statistics.

Results: HIV and AIDS awareness at the Kakamega County public service board stands at 94.1%. The 5.9% respondents who have never heard of HIV and AIDS were all female between age 15-30 years. Fourteen percent of respondents said that a person can get HIV by sharing a meal with someone infected with HIV. Over 16.7% said that HIV is a punishment from God/Allah. Twenty eight percent (8%) of the respondents said that they are not at risk of HIV while 11.1% do not know. Knowledge of HIV serostatus stands at 77.8%. For the respondents who didnt take the HIV test, 4.8% said that they fear knowing their status while 14.3% said that they are faithful to partner, 14.3% do not know how to manage the shock and 4.8% don't trust confidentiality. About 47.6% respondents reported using male condom. Seventy-one percent (71%) of the respondents reported having been demonstrated on correct condom use. Over 93.75% of respondents reported readily getting free condoms. Eighty-eight percent (88%) of the respondents have access to HIV and AIDS information.

Conclusion: The county public service staff showed good knowledge of preventing HIV. They demonstrated relatively accepting attitude towards PLWHIV but require sensitization to address myths and misconceptions about HIV and AIDS.There is need to increase HIV and AIDS awareness to staff to address barriers to HIV testing and condom use.

228 Barriers and Facilitators to Uptake and Adherence to Oral PrEP among Transgender Women in New York City

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Background: NYC transgender women (TGW) have the highest proportion of newly identified HIV-positive test results (20.0%) of any risk group in the United States. In 2012, the FDA approved oral Truvada for use as HIV "pre-exposure prophylaxis" (PrEP). Despite this, the incidence of new HIV infections in the U.S. remains minimally changed, since uptake and adherence to oral PrEP remain challenging. This study aimed to learn about TGW's perceptions and knowledge of oral PrEP and barriers/facilitators to initiation and sustained use.

Methods: Four focus groups were completed with HIV-negative (assessed with OraQuick Advance) TGW. Participants were assessed for their current knowledge and perceptions of oral PrEP. Then, the facilitator shared accurate information about PrEP (e.g., efficacy, dosing, cost, potential side-effects); the ensuing discussion focused on themes including participants' likes/dislikes, barriers/facilitators, strategies to overcome uptake/adherence challenges, side-effect tolerability, perceived compatibility with hormone regimens, and strategies to promote oral PrEP among TGW. Data were independently examined for recurring themes by two coders.

Results: Participants felt alienated by current strategies to advertise PrEP. That is, the dearth of public ads featuring TGW, coupled with the abundance of ads featuring MSM, acted together to imply two things: (1) PrEP is a product for men, and (2) PrEP distributors do not respect TGW's female gender. Participants expressed concern about potential side effects, especially future ART resistance and cross-interactions with feminizing hormones. All participants reported that hormone treatments are a priority; that is, willingness to take PrEP largely hinged on assurance that it would neither reduce the effectiveness of hormones nor interact with them to produce negative health outcomes.

Conclusions: PrEP advertising should not conflate MSM with TGW and should reach out to diverse groups of women. Future clinical studies should make a concerted effort to enroll TGW to ensure the safety of combined hormone/PrEP use.

229 From PrEP Prescription to Usage: A Strategy which Adapts to Patients' Realities

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Background: After patients initiate Pre-Exposure Prophylaxis (PrEP) treatment, compliance to a systematic PrEP protocol, including follow-up visits once every three months is essential. We aim to describe trends in compliance with the PrEP protocol, shifts between daily and on-demand regimens and treatment discontinuance among men who have sex with men (MSM).

Methods: We use retrospective longitudinal data from Clinique médicale l'Actuel, a sexual health clinic in Montréal, Canada. We restricted our sample to MSM patients who initiated PrEP prior to February 1, 2016 and collected follow-up data until February 1, 2017. The frequency of regimen switches and treatment discontinuations were measured using proportions and compared using chi-square tests. Protocol compliance was measured using the number of visits per duration of therapy and grouped into optimal compliance (at least one visit per 3 months), sub-optimal compliance (one visit per 3-4 months), inadequate compliance (1 visit per 4-6 months) and non-compliance (6 months or more between visits).

Results: 501 patients initiated PrEP, 427 daily (85%) and 74 on-demand (15%). During follow-up, 63% of patients demonstrated optimal compliance (63%), with others showing sub-optimal (23.8%), inadequate (9.4%) or non-compliance (4.2%). No difference was observed in compliance between regimens (p=0.73). During treatment, 16.2% of daily users switched to intermittent prescriptions (n=69) and 32.4% of on-demand users switched to daily prescriptions (n=24) (p=0.001). The rate of treatment discontinuation was similar for daily (21.8%, n=93) and on-demand users (16.2%, n=12) (p=0.28).

Conclusions: All users demonstrated relatively high compliance rates, suggesting that achieving one follow-up visit per three months is feasible for patients and providers in our setting. Several patients switched regimens during the course of treatment pointing to the flexibility that PrEP can have in allowing patients to adapt the therapy to meet their sexual health prevention needs. More research is needed to understand what brings patients to stop treatment or switch regimens.

230 MI-CARE: The Implementation of a Motivational Interviewing-Informed Method in Clinical Practice to Improve Adherence and Retention in HIV Care

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Background: Extensive research on behavioral interventions is underway to address barriers to care and treatment among HIV-infected patients. One promising practice in influencing behavior change is Motivational Interviewing (MI). We describe the development and implementation of an MI-informed curriculum to improve treatment adherence across a number of behavioral domains in a clinic-based practice at a large urban HIV clinic in Rhode Island.

Method: The Ryan White-funded Immunology Center Adherence and Retention (ICARE) Program at The Miriam Hospital Immunology Center in Providence, RI is a multidisciplinary team of clinic staff which utilizes a practice-based approach to identify patients with gaps in care (>9months) or detectable HIV plasma viral load (PVL >200 copies/mL), and perform targeted intensive outreach with them. To enhance the intensive outreach methods, a one-year demonstration project was designed to develop a brief, MI-informed curriculum addressing barriers to treatment adherence, train the ICARE team in the intervention, incorporate intervention documentation into the clinic electronic medical record, evaluate the impact of the intervention, and disseminate the intervention curriculum to the community AIDS Service Organizations.

Results: The spirit of MI and the training of our multidisciplinary ICARE team were both well received by staff and offered an acceptable enhancement of the intensive adherence interventions already being provided. The success of this project largely was dependent on the assurance that the MI-informed intervention was brief, practical, incorporated and reinforced in clinical practice, and applicable to the diverse needs of our patient population and multidisciplinary team of providers.

Conclusion: MI informed interventions that are refined to match the adherence needs and address barriers to care of patients and further are designed to address the time-sensitive nature of working in a busy HIV care clinic can allow for the enhancement of adherence interventions and impact patient care.

231 PrEP Case Management: Retention Outcomes for HIV Vulnerable PrEP Initiates

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Background: While PrEP is a formidable HIV prevention tool that could help change the course of HIV infections in the US, inadequacies in health care infrastructure have left HIV vulnerable populations with many challenges to accessing PrEP. These barriers have prevented populations such as Black and Latino young men who have sex with men (BLYMSM) and transgender women of color (TWOC) from uptake and retention of PrEP despite high incidence of HIV infection. In July 2015, Howard Brown Health, one of the Midwest's largest LGBT health care providers, implemented a PrEP case management program to provide retention and adherence support for HIV vulnerable PrEP initiates. Intervention support was given to participants for the first four months of PrEP care. Program outcomes for retention to PrEP care in BLYMSM and TWOC were evaluated.

Methods: PrEP appointments for BLYMSM and TWOC were tracked through Howard Brown Health's electronic medical records system. Attendance to first (one month) and second (four month) follow-up PrEP appointments were calculated for patients initiating PrEP at any point between July 2015 and April 2016. Attendance results were compared between those enrolled and not enrolled in PrEP case management.

Results: BLYMSM and TWOC with PrEP case management were more likely to attend their first follow- up (65%, n=24) and second follow-up appointments (16.7%, n=4) than those without case management (35%, n=61, and 14.8%, n=9).

Conclusions: PrEP case management increased BLYMSM and TWOC's retention to PrEP care. Drop -off between first and second follow-ups may be due in part to PrEP initiation dates falling later in the July 2015 and April 2016 date range, as appointments may still be pending. PrEP case management's impact on appointment retention is critical to enabling PrEP adherence and lowering HIV incidence rates in BLYMSM and TWOC.

232 Perceived Utility of Mobile Phones for Health Promotion among HIV-Positive Women Attending a Government Antiretroviral Center in India

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5. Indraprastha Institute of Information Technology, Delhi, India

Background: This study assessed the acceptability of nurse-delivered phone-based counseling for support of antiretroviral treatment (ART) adherence and self-care behaviors among HIV-positive women in India.

Methods: We conducted a qualitative study at a government-run ART center in the Belgaum district located in the state of Karnataka in southern India as part of Phase I of an ongoing study. The center caters to socially disadvantaged low income HIV-positive patients. The HIV prevalence is high in Belgaun (>1%) and the epidemic is characterized by higher incidence among women. We conducted in-depth interviews with 25 HIV-positive women and 9 healthcare providers at a government ART center in Karnataka, India.

Results: About half of the HIV-positive women owned a mobile phone and many had access to mobile phones of their family members. Most women perceived phone-based counseling as a personalized care approach and a good way to get information on demand. Also, they thought it would be helpful for discussing mental health issues and to ask for certain sensitive information that they would hesitate to ask face-to-face. 50% thought they would preferreceiving calls proactively from a nurse, whereas just 8% preferred making calls to the nurse and 38% opted for both.

Conclusion: Findings indicate that, when compared to text messaging, phone counseling could be a promising and acceptable way to engage with women on ART, especially those with limited literacy. Future studies should focus on testing mobile phone-based information/counseling and adherence promotion interventions that take the local context into account.

233 Factor Structure of the Attitudes toward Health Care Providers Scale in Persons with HIV Infection

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Background: The relation between individuals affected by HIV infection and their health care providers is critically important for health care outcomes, including treatment adherence and sustained engagement in care. Bodenlos et al. (2007) previously reported on a scale designed to assess the attitudes of persons treated for HIV infection toward their providers. Understanding the dimensions of patient attitudes toward their providers may be useful in improving care for patients by targeting factors that can impact their attitudes toward providers. In these analyses, we evaluate the dimensions of patient attitudes toward their providers via factor analysis of the Bodenlos et al. scale.

Methods: As part of a larger study, the Bodenlos et al. scale was administered to 550 individuals treated for HIV infection in organizations providing care in the Atlanta, Georgia area. The factor structure of the scale was assessed with exploratory and confirmatory factor analyses using MPlus. Number of factors was determined by the scree test and parallel analysis.

Results: Analyses suggested the presence of three factors representing dimensions of patient-provider relations. These include items the patient's belief in the professionalism of providers, the degree to which they healthcare team provides emotional support, and the extent to which the team had negative attitudes toward the patient. We had previously shown that persons with low health literacy endorsed items on the measure indicating that they believed their team had negative attitudes toward them, the same items that were included in the third factor.

Conclusions: Results from this analysis suggest the presence of three dimensions of patient attitudes toward providers in the Bodenlos et al measure, in contrast to their original finding of only two (Professionalism and Emotional Support). The third factor found in our study suggests that individuals with low health literacy may feel judged by their providers. Given the importance of a positive patient-provider relation for treatment adherence and treatment engagement and the measure's demonstrated relation to appointment attendance, consideration of this dimension may be important in improving patient outcomes.

234 Consensus Statement: Supporting Safer Conception and Pregnancy for Men and Women Living with and Affected by HIV

Shannon Weber (presenting)[1], Lynn Matthews[2], Renee Heffron[3], Angela Kaida[4], Natasha Davies[5], Ian Cooke, Jolly Beyeza-Kashesya[6], John Kinuthia[6], Augusto Semprini[7]

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Background: Safer conception interventions reduce HIV transmission while supporting the reproductive goals of men and women living with or affected by HIV. We developed a consensus statement to: address demand for safer conception services, summarize the state of the science, identify information gaps, outline research and policy priorities, and advocate for action.

Methods: This statement emerged from a consultative process incorporating input from meetings, the literature, and key stakeholders. Three co-authors (AK/RH/LM) developed an outline of the manuscript which was shared, discussed and modified with co-authors, working group members, and other experts in safer conception, HIV treatment and prevention, fertility, and perinatal transmission. Co-authors and working group members developed and approved the final draft.

Results: Areas of consensus across themes of demand, safer conception strategies, and implementation were identified. There is demand for safer conception services, yet access is limited by stigma towards PLWH having children and by provider knowledge. Scientific evidence regarding efficacy, effectiveness, safety, and acceptability supports a range of safer conception strategies including ART for PLWH, PrEP for HIV-negative partners, limiting condomless sex to peak fertility, home insemination, male circumcision, treatment of STIs, couples-based HIV testing, semen processing and assisted reproductive technologies, and fertility care. Implementation is limited by a lack of guidelines and training for providers. When available, demand is high, delivery is feasible, and outcomes encouraging.

Conclusions: The state of the science, consumer demand, and global goals to eliminate perinatal transmission, attain UNAIDs 90:90:90 targets and improve HIV prevention all support implementation of safer conception services. Though implementation is in its infancy, we recommend providers offer available safer conception services to HIV-affected men and women, and health program administrators integrate safer conception services into HIV and reproductive health programs. It is time empower people affected by HIV to adopt safer conception strategies to satisfy goals for pregnancy with minimal risk of HIV transmission.

235 Community *Charlas* (or Talks): A Way to Reduce HIV-Related Stigma and Increase HIV Testing among Mexicanos in Chicago

Pamela Vergara-Rodriguez (presenting), Patricia Aguado, Susan Ryerson Espino

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Background: The five year HRSA/SPNS Culturally Appropriate Interventions of Outreach, Access and Retention among Latino(a) Populations (Latino Initiative) was launched in 2013 in an effort to support the development of innovative initiatives with a focus on stigma reduction for engaging newly diagnosed, new to care and lost to care HIV positive Latinos. *Proyecto Promover* was awarded a 5-year grant to develop clinic and community intervention components prioritizing the education, testing and care of Mexican immigrants.

Method: This presentation will focus on the community prevention *charlas* (talks) developed and implemented under this Latino Initiative. Process notes, tracking data, and pre/post participant surveys were used to explore the development, implementation and outcomes of this component. Asset mapping, partnership development, facilitator training, and engaging with cultural advisors were early development activities and will be described.

Results: Over 45 *charlas* were facilitated across 33 sites including 344 community members ($M_{group\ size}$ =7- 8 participants, range 5-30). Participants were 14-90 years of age; the majority identified as being of Mexican descent (73%). Over half self-identified as male (67%), 33% as female and *charlas* will be highlighted and include uniquely qualified intervention personnel, grounding to local context, instructional style, small list of key knowledge and skills points, as well as offering non-threatening, free, confidential and immediate testing opportunities. Knowledge of local resources and prevention of HIV as well as HIV testing intentions for self and loved ones significantly increased across all measures pre- to post- with medium effect sizes (.42-.65 effect sizes) and post knowledge and testing intention domains were significantly correlated.

Conclusion: Grants and evaluation plans should allow adequate time and resources to develop, refine, and disseminate ecologically-grounded, community-based interventions.

236 The Life Story: A Key Ingredient to Retaining HIV-Positive Mexicanos in Care

Pamela Vergara-Rodriguez (presenting), Patricia Aguado, Susan Ryerson Espino, Naomi Jimenez

The CORE Center, Chicago, IL, USA

Background: The five year HRSA/SPNS Culturally Appropriate Interventions of Outreach, Access and Retention among Latino(a) Populations (Latino Initiative) was launched in 2013 in an effort to support the development of innovative initiatives for engaging newly diagnosed, new to care and lost to care HIV positive Latinos.

Method: As one of the grantees in a large county clinic within the city of Chicago we developed an individual, one-on-one clinical patient navigator intervention targeting men and women of Mexican origin and embedded this intervention within a highly functional one-stop shop with a long history of bilingual care. Over the first year of the intervention 85 patients (62% newly diagnosed; 38% sporadically engaged) were enrolled. The majority of participants present as male (95%) and heterosexual (99%). A large percent of male participants report being somewhat to exclusively attracted to male sexual partners (73%). Overall, 91% of newly diagnosed patients were linked to care within 90 days of diagnosis. All participants were placed on ART at first linkage or re-engagement appointment; 93% were retained in care and 96% were virally suppressed. We will share the key ingredients of implementing this intervention including mixed methods data on barriers to engagement, psycho-educational skill building strategies, and implementation.

Results: The patient's life story provides a foundation for collaborative reflection between the bilingual, Mexican, clinically-trained navigator and the patient about past and present well-being and facilitators and barriers to care engagement.

Conclusion: The clinical navigation model allowed for the time to build provider patient relationships and appreciation of patient life stories. A needed next step includes examining strategies to fund, integrate and sustain navigation models within everyday clinical practice in HIV primary care, case management, chemical dependency and mental health.

237 Social Support and Disclosure: Experiences of Patients Newly Entering Care

Crystal Chapman Lambert (presenting)[1], Will Tarver[2], Pamela Musoke[1], Kristi Stringer[1], Samantha Whitfield[1], Michael Mugavero[1], Rob Fredericksen[3], Sheri Weiser[4], Mallory Johnson[4], Janet Turan[1]

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Background: The 12 months following linkage to HIV care is a critical period for long-term positive health outcomes. While HIV disclosure and social support have been shown to positively impact overall engagement in care, few studies have explored these factors among patients during this period of vulnerability. This study reports qualitative findings to better understand the role of social support and disclosure on engagement in HIV care in a sample of new-to-HIV care patients.

Methods: Twenty-eight in-depth interviews were conducted with new-to-care patients as part of the Integrating ENGagement and Adherence Goals upon Entry (iENGAGE) Study to examine psychosocial factors impacting engagement in care. Semi-structured interview guides were used to facilitate discussion regarding engagement in care. Interviews were audio recorded and transcribed verbatim. Transcripts were independently coded using a theme-based approach by four coders, findings were compared, and discrepancies were resolved by discussion.

Results: Interviews suggested that social support potentially facilitate engagement in care among new-to-care patients. Participants described receiving social support from various sources, including family such as siblings, grandparents, and grandchildren; as well as from spiritual leaders and friends. For some, HIV disclosure improved their support network related to engagement in HIV care, in the form of appointment reminders, increased emotional support, and increased confidence for disclosing more widely. However, some participants reported that disclosure triggered anticipated stigma, as they feared people would disclose their status to others without their permission, resulting in stigma.

Conclusions: Early social support can be a useful resource to help people living with HIV manage the disease as they initiate care. HIV disclosure has the potential to generate support that may enhance engagement in care at the pivotal time of care entry. Therefore, incorporating support for safe HIV disclosure into interventions may improve access to social support, ultimately improving engagement in care.

239 Exploring Evaluation in a Clinic-Based PrEP Intervention for HIV Vulnerable PrEP Initiates

Matthew Lowther (presenting), Bryan Bautista-Gutierrez, Laura Rusie

Howard Brown Health, Chicago, IL, USA

Background: Demonstration projects geared at increasing uptake and sustaining care retention for Pre-Exposure Prophylaxis (PrEP) users are being implemented throughout the United States, but little is known about the evaluative tools and measurable outcomes being used for these programs. Howard Brown Health of Chicago is currently implementing a demonstration project that aims to support adherence to PrEP medication and care retention by using a case management approach to clinic-based PrEP care. Since its implementation, successes and challenges unique to evaluating retention and adherence for PrEP patients in a clinic-based setting have been identified.

Method: Upon enrollment, PrEP case management staff guides the patient through the first 3 PrEP care appointments while providing sexual health information, appointment scheduling assistance, service referral, and PrEP medication adherence training. These supports are provided through routine monthly check- ins via phone, text, and in-person meetings at medical appointments. Programmatic delivery is tracked through electronic medical records and spreadsheet data tracking.

Results: PrEP case management is largely based in rationale of similar programming for HIV+ patients. However, unique challenges in defining appropriate levels of adherence and retention for PrEP users are apparent. Amount of time engaged in PrEP care varies for multiple reasons, and protective levels of PrEP are still being studied. Retention is higher in patients enrolled in PrEP case management when compared to patients of similar demographics not enrolled. However, elements that contribute most strongly to these outcomes are still being assessed. Issues that may impact evaluation of these outcomes include level of oversight from funders and changes in program procedures and evaluation tools throughout implementation.

Conclusion: Defining optimal retention and adherence to PrEP is critical to understanding the impact of these programs. Evaluating program fidelity may give important insight into what aspects of PrEP retention programming supports retention and adherence.

240 Integration of Clinic-Based, Opt-Out Testing for HCV into an Existing HIV Testing Framework at a Community Health Center in Chicago

Tommy Schafer (presenting), Kristin Keglovitz-Baker, Magda Houlberg, Chad Hendry, Laura Rusie

Howard Brown Health, Chicago, IL, USA

Background: Howard Brown Health, one of the nation's largest LGBTQ healthcare organizations, was awarded funding in 2015 to create best practices around the expansion of routine opt-out HIV testing and integration of Hepatitis C virus (HCV) screening into this framework.

Method: After modification of the Electronic Medical Record to prompt for HIV testing, testing was routinized by training Medical Assistants (MAs) to offer testing using a script during vitals. HIV testing was rapid. HCV testing was routinized by adding labs to order-sets for a variety of visits. Education emphasized the importance of HCV screening for people born 1945-1965, HIV positive, and/or those with drug use risk. Finally, the HCV Ab test was changed to auto -reflex to run a viral load test if positive to avoid extra visits in determining active HCV.

Results: EMR prompts, standardized patient interaction scripts, and documentation of barriers are important. Ongoing education and progress presentations sustain provider buy-in. MA Skills trainings were conducted to address refusal reasons. HCV testing importance was discussed in Clinical Quality Meetings to obtain agency buy-in to continue the high-cost testing. Providers and patients were allowed flexibility in selecting testing types to improve workflow and acceptance. This project contributed to 51% of eligible patients being tested for HCV at least once, and an increase in offers of HIV testing at eligible visits (88% to 99%) while maintaining a testing rate of 90%.

Conclusion: Opt-out HIV/HCV testing is preferred because it reduces differential testing, testing stigma, and normalizes primary care sexual health discussions. MA-driven testing ensures it is not forgotten by providers and normalizes routine testing by performing it with standard vitals. Structuring in routine opt-out HIV testing allows for easy integration of future opt-out testing such as HCV. Auto-reflex HCV testing is absolutely necessary for ease of active HCV infection determination.

241 Sinikithemba Kwabesilisa: A Pilot Safer Conception Intervention for Men Living with HIV in KwaZulu-Natal Successfully Promotes HIV-RNA Suppression

Hazar Khidir (presenting)[1], Christina Psaros[1], Letitia Greener[2], Nzwakie Mosery[2], Mxolisi Mathenjwa[2], Kasey O'Neil[1], Abigail Harrison[3], David Bangsberg[1], Steven Safren[4], Jennifer Smit[2], Lynn Matthews[1]

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Background: Many men living with HIV (MLWH) risk exposing uninfected partners to HIV to have children and meet cultural reproductive goals. Advances in HIV prevention offer strategies to minimize sexual HIV transmission risks while allowing for conception. However, men rarely receive reproductive health counseling.

Methods: Based on formative studies in South Africa, we developed a safer conception intervention to promote HIV-serostatus disclosure, ART initiation and adherence, and other safer conception strategies amongst MLWH. We used cognitive-behavioral therapy (CBT) techniques (e.g., problem solving, motivational interviewing) to support safer conception among MLWH not accessing ART, in a stable partnership with an HIV-uninfected or unknown serostatus woman, and wanting to have a child in the next year. Focus group discussions (FGDs) with target users were used to refine the intervention, and an ongoing open pilot is evaluating acceptability and feasibility. The primary outcome is HIV-RNA suppression at 12-weeks.

Results: Twelve MLWH participating in FGDs demonstrated poor knowledge of HIV prevention or safer conception strategies, excitement about the prospect of a safer conception resource, and expressed willingness to attend multiple sessions to access reproductive health resources. The final safer conception intervention is comprised of 3 weekly sessions and 2 booster sessions that offer comprehensive education on safer conception strategies, encourage men to develop a plan to implement safer conception strategies, and use CBT strategies to support men in plan implementation. Eight open pilot participants completed the intervention to date: 6 (75%) disclosed their status to at-risk partners, 7 (88%) initiated ART and 100% of those on ART for $\geq$8 weeks achieved HIV-RNA suppression.

Conclusions: MLWH are eager and willing to engage in safer conception programming. Preliminary data suggest that providing MLWH with safer conception resources has the potential to reduce HIV incidence.

242 Knowledge on HIV Self-Care among People Living with HIV/AIDS and its Association to Viral Suppression in Lima, Peru

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Background: To achieve viral suppression, people living with HIV/AIDS (PLWHA) require regular compliance to antiretroviral treatment (ART). Health education can empower the patient in their care and increase treatment adherence. We conducted a study to determine knowledge about HIV-specific self-care among PLWHA and its association with viral suppression.

Methods: A cross sectional study was conducted among PLWHA attending the largest HIV carecenter in Peru. Participants answered a self-administered 15-item survey on HIV specific self-care knowledge. A point was given for each correct answer in the knowledge survey, one subtracted for each incorrect answer, and zero points if the participant did not reply or did not know the answer. Viral loadsat baseline and follow-up were retrieved from hospital databases. Viral suppression was defined as a viral load under 400 copies/mL after six months of ART initiation.

Results: Ninety-ninePLWHAwere enrolled of which 68% (n=67) were male; the median age was 35years (interquartile range:27–40). Eighty-seven percent (86/99) knew that HIV is an infection that can be controlled; 6% (6/99) thought that being on ART impaired transmission to others; 4% (4/99) thought that missing an ART dose implied having a double dose in the next take; 2% (2/99) were unaware that condoms were recommended for all sexual encounters; and 83% (82/99) did not know that isoniazid-preventive therapy could reduce the risk of tuberculosis.Among those who had a viral load 6 months after ART initiation (n=76),viral suppression was not associated with general HIV knowledge (Prevalence Ratio (PR): 1.00, 95% Confidence Interval (CI):0.99-1.02), or with ART-specific knowledge (PR: 0.99, 95%CI: 0.94-1.05).

Conclusion: Our study highlights gaps on the HIV health care knowledge of PLWHA, though these did not show an association with viral suppression.

245 The Longitudinal Impact of Psychosocial Syndemics on ART Adherence in HIV-Positive Patients in Care in Brazil, Thailand, and Zambia – HPTN 063

Carlos Rodriguez-Diaz (presenting[1]), Xu Guo[2], Sahar Zangeneh[2], Jing Wang[2], Kiyomi Tsuyuki[3], Yusuf Ransome[4], Matthew Mimiaga[5], Kenneth Mayer[4], Steven Safren[6]

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Background: Among individuals with HIV and potentially benefiting from treatment as prevention (TasP), co-occurring psychosocial problems (i.e. syndemics) such as depression, substance use, and discrimination are prevalent. Although syndemics are associated with negative health outcomes, most studies are cross-sectional, and few are conducted among HIV-positive individuals versus at-risk individuals.

Methods: We analyzed longitudinal data of HIV-positive individuals (N=749) engaged in care in Brazil, Thailand, and Zambia. Self-reported data on psychosocial characteristics and HIV transmission risk-including adherence to ART- were collected from heterosexual men, heterosexual women, and MSM quarterly for 12 months. Syndemic score (0 to 3 or more) comprised a summative count of assessed psychosoical problems (polydrug use-excluding stimulants, stimulant use, depression, alcohol use using AUDIT score, and fear of discrimination). We used a logistic regression model, fitted via generalized estimating equations (GEE) to study the association between adherence and the syndemic score while adjusting for other covariates.

Results: Among heterosexual men, those with 2 syndemic problems had 50% lower odds of ART adherence (aOR=0.5, 95%CI: 0.31, 0.81, p=0.004) and those with ≥3 syndemic problems had 73% lower odds of ART adherence (aOR=0.27; 95%CI: 0.15, 0.49; p<0.001), compared to those with no syndemic problems. Among heterosexual women, those with 2 syndemic problems had 48% lower odds of ART adherence (aOR=0.52; 95%CI: 0.31, 0.85; p=0.009) and those with ≥3 syndemic problems had 84% lower odds of ART adherence (aOR=0.16; 95%CI: 0.07, 0.39; p<0.001), compared to those with no syndemic problems. Among MSM, the number of syndemic problems was not significantly associated with ART adherence.

Conclusions: Findings suggest that increased co-occurrence of phycosocial syndemics are associated with reduced ART adherence in people with HIV, but may be different across risk groups. Understanding syndemics among people with HIV by risk group will better inform integrated models of HIV care.

246 Harnessing Big Data to Identify Individuals in Greatest Need of Prevention Interventions: Developing an HIV Risk Score from Electronic Health Records

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Background: Successful identification of individuals at risk for HIV infection is critical to achieving the maximum individual and population-level impact of PrEP and other biomedical prevention interventions. A review of new HIV diagnoses revealed many missed opportunities for testing and engagement in prevention services. Electronic health records (EHRs) and Health Information Exchanges (HIE) have the potential to facilitate HIV risk assessment and prediction to enable providers to identify individuals who should be linked to prevention services.

Methods: Retrospective analysis of electronic data collected at a large urban academic medical center in New York City between January 1, 2005, and January 1, 2016. The analysis included 415 HIV+ individuals who received health services prior to their confirmatoryHIV test (Western Blot) and 1240 individuals whose EHR lacked evidence of HIV diagnosis. Literature review and domain expert criteria were used to identify 25 candidate variables subsequently extracted from electronic records and included patient demographics and history of laboratory tests. Multivariate logistic regression was used to identify predictors of future HIV diagnosis. Prognostic ability was evaluated using the area under the receiver operating characteristic curve (AUC).

Results: Variables positively associated with HIV diagnosis included younger age, black or other race, male sex, and evidence of prior testing for syphilis, gonorrhea, and chlamydia, or hepatitis B virus (HBV). Evidence of prior HIV testing and being married or recently divorced was negatively associated with the likelihood of HIV diagnosis. The model displayed good discriminatory ability (AUC: 0.83) within the retrospective cohort.

Conclusion: Information collected in EHRs is predictive of HIV acquisition and could enable targeted electronic screening programs and automated physician's reminders. Future studies should determine whether larger datasets and contemporary techniques including natural language processing can improve discriminatory ability and be used as a tool to improve engagement in the prevention continuum.

248 The Role of Non-Injection Substance Use in ART Adherence and Viral Load Detectability among Men Living with HIV in Brazil and Thailand – HPTN063

Kiyomi Tsuyuki (presenting) [1], Steven Shoptaw[2], Gordon Chau[3], Yusuf Ransome[4], Carlos Rodriguez-Diaz[5],Ruth Friedman[6], Kriengkrai Srithanaviboonchai[7], Kenneth Mayer[8], Steven Safren[9]

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Background: Non-injection substance use is the most common form of substance use in people living with HIV (PLH) and has been linked to increased HIV transmission risk. Achieving viral suppression among this population can reduce onward transmission, which is central to Treatment as Prevention (TasP) strategies. We examined the association between non-injection substance use, ART adherence, and viral load (VL) among PLH in two middle-income countries.

Methods: We analyzed longitudinal data of HIV-positive MSM and heterosexual men in Brazil (n=146) and Thailand (n=159), with an average of 2.70 VL observations per individual. Primary exposure was past 3 month self-reported days of drug use (stimulants, cannabis), alcohol abuse (AUDIT-Alcohol Use Disorders Identification Test), and number of substances used. ART adherence was self-reported and VL undetectability (Y/N) was extracted from medical charts every 3 months. We fit logistic mixed effects models, stratifying by country and MSM/ heterosexual status.

Results: *Among Thai men,* 8% used stimulants, 2% cannabis, and 43% abused alcohol. Drug and alcohol abuse was not significantly associated with ART adherence or undetectable VL. *Among Brazilian men,* 20% used stimulants, 15% cannabis, and 36% abused alcohol. Drug and alcohol abuse was associated with an overall lower likelihood of ART adherence and a lower likelihood of an undetectable VL, though this was qualified by an interaction by risk group. For each additional substance used, in heterosexual men the odds of ART adherence decreased by 73% (OR=0.27;95%CI:0.09,0.80) and, in MSM the odds decreased by 36% (OR=0.64;95%CI:0.36,1.16). Alcohol abuse decreased the odds of an undetectable VL in MSM by 66% (OR=0.34;95%CI:0.14,0.81) and in heterosexual men by 64% (OR=0.36;95%CI:0.10,1.25).

Conclusion: Our results suggest that interventions to reduce alcohol abuse among MSM and non-injection substance abuse among heterosexual men should be explored as a means of increasing ART adherence and reducing HIV viral load in Brazilian men.

249 Increasing PrEP Uptake among Transgender Populations: Data and Recommendations

Augustus Klein (presenting), Charlie Solidum, Olympia Perez, Rachel Fikslin, Sarit Golub

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Background: Despite disproportionately high HIV incidence, PrEP uptake among transgender (TG) populations remains low. Past research focuses on barriers to health care access; scant attention has been paid to ways in which TG experiences of healthcare may promote or inhibit PrEP uptake.

Methods: We recruited 60 TG individuals (30 transwomen, 30 transmen; ages 19-59, 80% people of color) for a mixed-methods study that included in-depth qualitative interviews (all interviews were conducted by TG researchers).

Results: Despite regular and recent contact with the health care system, only 16% reported ever having a provider discuss PrEP and 18% reported taking PrEP. Four critical themes emerged. First, TG individuals claim a range of sexual identities and engage in sexual activity with people of all genders, but current risk assessment/sexual history tools do not capture this information. Second, health care providers are not having conversations with TG individuals about their bodies, sexuality, or sexual health, limiting the potential for PrEP education or awareness. Third, TG individuals experience a variety of health issues, but lack access to comprehensive care that is holistic and gender affirming. And fourth, most TG individuals do not have choice of providers or venues for receiving healthcare, and those with negative health care experiences actively limit interactions with the health care system.

Conclusions: In contrast to past research focusing on disparities in engagement or access, these data suggest that the content and nature of health care interactions can make a significant difference for TG individuals. High quality care that will truly engage TG individuals must recognize the diversity of this community and embrace sexual health care and assessment that is gender affirming, without making TG issues the sole focus. PrEP provides a unique opportunity to refocus HIV prevention efforts by utilizing a TG affirming health care model, which promotes empowerment and self-efficacy.

250 Pilot Study to Test Feasibility of Delivery and Implementation of an Algorithm for Smoking Cessation Treatment for People Living with HIV/AIDS (PLWHA) in the Medical University of South Carolina HIV Clinic

Madelyne Ann Bean[1], Karen Cropsey[2], Matthew Carpenter[1], **Lauren Richey (presenting)[1]**

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Background: Compared to the general population, PLWHA have higher rates of tobacco abuse and an increased risk of morbidity from tobacco related diseases. We performed a prospective single arm pilot study of the real-world feasibility of integrating an ambulatory smoking cessation decisional algorithm.

Methods: Participants were PLWHA attending our clinic, able to consent, and smoking at least 5 cigarettes/day regardless of motivation to quit. Enrollment was from November 2015 until July 2016 (n=60). Each participant had an initial visit and 2 phone visits (+1 and +3 months) and received up to $160 compensation. Participants completed surveys and the algorithm via computer during the first visit which resulted in a therapy recommendation which was prescribed. Primary outcomes were changes in smoking behavior and use of cessation medications. Additional clinical data was collected via chart review.

Results: Participants had a mean age of 48, were mostly African American (72%) and male (67%) with well controlled HIV (mean CD4 622, undetectable viral load in 70%). Medicare/Medicaid accounted for 22(37%), private/ACA plans in 18(30%), and 20(33%) were uninsured. Participants showed a decrease in tobacco use, with an average of 14.4 cigarettes/day at baseline and 7.1 cigarettes/day at 3 months (p=0.001). Twenty-seven (45%) made a 24-hour quit attempt (QA), and 39(65%) used medication, varenicline being the most commonly prescribed (32%). Prior authorization delayed medication receipt in 7 participants, and insurance denial occurred for one patient requiring an alternative medication. No significant differences in cigarettes/day, 24-hour QA, or medication use were seen when participants were stratified by motivation to quit (low 0-7 on contemplation ladder versus high 8-10).

Conclusions: The algorithm was successful in engaging participants to use cessation medications and change smoking behaviors, regardless of motivation to quit. As PLWHA have higher tobacco use and worse outcomes, implementing a decisional algorithm may be one way to address this disparity.

251 Persistence of Reengagement and Retention Outcomes after Using an Outreach Coordinator

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Background: Previous work using an Outreach Coordinator to perform contact interventions showed success in our clinic. In 2015, with an average of 59 minutes and $100 spent on outreach per at-risk patient, 82% were reengaged and 36% were retained in care. The purpose of this project was to assess if the improved outcomes would persist over time, focusing on engagement and retention in the year following the intervention and to determine any additional outreach time provided.

Methods: Patients were included if they were at-risk of falling out of care, defined as having a no-show to HIV clinic in 2015 and receiving an intervention by the outreach coordinator. Visit attendance and outreach time in 2016 was recorded. Retention in care was defined by the HRSA definition (2 visits at least 90 days apart).

Results: Out of 1242 patients, 61(5%) patients were at-risk in 2015. The mean age was 40 years, 34(56%) were male and 49(80%) were African-American. In 2016, 47 (77%) had a visit and 29 (48%) were retained in care. These were not significantly different from 2015 (chi-squared p=0.7; p=0.41 respectively). This population had a per-patient average of 1.3 no-shows and 1.0 canceled visits. The mean outreach time per patient in 2016 was 61 minutes (range 0 to 225) or 4 interventions. Thirty-seven (61%) patients received phone outreach, 38 (62%) visit reminders, and 9 (15%) missed visit follow-up, only 4 (7%) patients did not receive any phone intervention. Thirty-two (52%) received a letter intervention. It took 2.1 hours to achieve each retained patient or 1.3 hours for each patient with a visit, versus 2.7 and 1.2 in 2015, respectively.

Conclusion: Continued engagement and retention were similar in the subsequent year, but these outcomes were not the result of persistence of the 2015 intervention alone as similar resources were invested in continued interventions in 2016 to maintain the results.

253 Continuum of Care of Children and Adolescents within a European Setting: A Patient-Centered Approach

Ambra Righetti (presenting) [1], Loredana Nulvesu[2], Lucia Tamarasso[2], Federica Portunato[2], Piero Cai[2], Giovanna Ferrandes[2], Mauro Giacomini[3], Barbara Giannini[3], Claudio Viscoli[2], Antonio Di Biagio[2]

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Background: Strategies to optimize the retention of children and adolescents living with HIV must face key barriers including individual, institutional and systems barriers. Many interventions to improve the retention in care are defined in literature.

Method: This is a descriptive study including all HIV-infected paediatric patients in care at the adult unit of Infectious Diseases of IRCCS AOU San Martino-IST in Genoa (Italy). A dedicated day and a patient-customized environment were implemented. A multidisciplinary approach was adopted. Psychological support and counseling were provided. Memory aid as texts and calls were used. Self-management and educational activities were encouraged. Adherence support devices and treatment personalization were carried out. Laboratory and pharmacology data have been automatically updated from Electronic Health Record in a SQL database accessible with a web interface.

Results: The study included 48 HIV-infected paediatric and adolescent patients who received care at IRCCS San Martino-IST in Genoa. Four (8.33%) patients were aged 18; mean age was 22.3 years old. Nowadays, 42 (87.5%) are retained in care and 6 (12.5%) lost from follow-up, of whom 4 transferred to another Hospital in Liguria and 2 died. Thirty-seven (88.1%) patients had HIV-RNA viral load 500 cells/mm^3. All patients were on combined antiretroviral therapy and 37 (88.1%) attended regularly to appointments with an average interval of 4/5 months. Thirty-eight (90.47%) of them were aware of their diagnosis and 34 (80.95%) still benefited from the dedicated day.

Conclusion: This study describes the experience of retention in care of children and adolescents living with HIV in an adult HIV clinic in Genoa. Motivational intervention through self-interview could be used to further improve the retention in care.

256 Testing the Reciprocal Relationship between Depressive Symptoms and Engagement with the Health Care Provider among Persons Living with HIV/AIDS: A Two-Wave Cross-Lag Model

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Background: Depressive symptoms among persons living with HIV/AIDS (PLWHA) negatively affect health outcomes and engagement in care. Poor patient-provider relationships and depressive symptoms are associated, but less is known regarding their reciprocal relationship. The purpose of this study was to evaluate the prospective and reciprocal relationship between depressive symptoms and health care provider (HCP) engagement among PLWHA. This study aimed to assess whether depressive symptoms is a risk factor or a consequence of poor HCP engagement, or both.

Methods: This secondary data analysis utilized a two-wave cross-lag model to test the reciprocal relationship between depressive symptoms and HCP engagement, from baseline to seven-month follow-up, controlling for age, gender, race, and education. Depressive symptoms and HCP engagement were measured using the Center for Epidemiologic Studies Depression Scale and Engagement with HCP Scale, respectively. A low HCP engagement score indicates greater provider engagement. Data were collected from 2009 to 2011 from 210 HIV-positive adults attending HIV clinics in South Florida.

Results: Demographic characteristics showed an average age of 47.1 ± 7.4 years, 53.1% female, 82.8% African American/Black, and 34.0% graduated high school. Within and across waves, depressive symptoms and HCP engagement were positively and significantly correlated with one another. The cross-lag model showed that baseline HCP engagement predicted later depressive symptoms (β=0.15, p=0.008), but baseline depressive symptoms did not predict later HCP engagement (β=0.29, p=0.64). The model accounted for 38.2% and 33.4% of the total variance in depressive symptoms and HCP engagement, respectively, at Wave 2.

Conclusions: Findings suggest that depressive symptoms may be a consequence and not a risk factor of later HCP engagement. Specifically, poor HCP engagement at baseline predicts greater depressive symptoms at follow-up. Findings from this study suggest the importance of the patient-provider relationship on mental health outcomes among PLWHA.

257 A Behavioral Intervention to Improve Adherence and Viral Load Outcomes among Patients Initiating HIV Care: Rationale and Design of the iENGAGE Intervention Trial

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Background: Newly diagnosed individuals must develop adherence skills for both HIV visit retention and antiretroviral therapy (ART) to achieve plasma viral suppression (VS) during the first year of care. Evidence-based interventions to support development of self-care adherence skills during this critical period are lacking. Integrating ENGagement and Adherence Goals upon Entry (iENGAGE), an NIAID funded randomized behavioral intervention trial evaluated a 4 session skills-building intervention to enhance adherence and VS among patients initiating HIV care.

Methods: iENGAGE was implemented at 4 US HIV clinics. Participants enrolled within 14 days of their initial HIV primary care provider (PCP) appointment. At enrollment, participants completed computer administered self-interview (CASI) questionnaires (PHQ-9, PHQ-A, ASSIST, AUDIT-C, EQ-5D, HRAP, brief COPE, MOS-4, stigma, disclosure, self-efficacy, unmet needs) and were randomized 1:1 to control:intervention arms. Over 48-weeks follow-up, intervention participants received four face-to-face tailored motivational interviewing (MI)-based PACT (Participating and Communicating Together) counseling sessions and received personal reminders for clinic visits consistent with CDC-RIC (Retention in Care) approach. At 48-weeks, participants completed another CASI (baseline instruments + sIMB-RIC, sIMB-AAQ, ACCTG, VAS, SRS) and plasma HIV RNA collection. The primary outcome was 48-week VS, with retention and ART adherence as secondary outcomes.

Results: A manual guided the four intervention sessions, each of which included rapport building, education, skills building and setting goals. Of 941 patients screened, 372 enrolled (average age 37 (± 12) years, 79% males and 62% African Americans). At enrollment, 31% of participants reported moderate/severe depression and panic symptoms/syndrome, 52% stated having 2 or more recent sexual partners, and 78% disclosed their HIV status to someone.

Conclusion: Successful study recruitment indicated opportunity for early participation in behavioral interventions for persons new to HIV care. Future analyses will evaluate baseline and follow-up CASI data and intervention efficacy in achieving VS via enhanced HIV retention and ART adherence.

258 Engaging Older Adults in the Prevention Continuum: Assessing PrEP Awareness and Willingness to Link to Prevention Services

Tessa Kaplan, Prativa Baral, Jennifer Chang, Sean Srichankij, Jorge Benitez, Matthew Turner, Jason Zucker, Caroline Carnevale, Peter Gordon, Susan Olender, Alwyn Cohall, **Magdalena Sobieszczyk (presenting)**

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Background: Individuals newly diagnosed with HIV at age of 50 or older (50+) frequently present with more advanced disease. At our medical center in northern Manhattan, age 50+ was associated with higher likelihood of concurrent AIDS at time of HIV diagnosis, highlighting need for earlier interventions and linkage to sexual health services in the preceding years.

Methods: Between 10/2015 and 10/2016, a questionnaire was administered to individuals accessing services at Columbia University Medical Center in northern Manhattan. Risk behavior and PrEP awareness were compared in individuals ≥40 years old (40+) vs. 39 years and younger (younger).

Results: 388 individuals completed the survey, mean age was 30.5 years, 16% (63) were 40+, 73% MSM. There were no significant differences in Black or Latino race/ethnicity (57% vs 64%, p=0.28) or MSM status between 40+ and younger individuals. 25% of 40+ vs. 30% younger individuals reported that a provider discussed HIV or sexually transmitted infections (STIs) with them in past 12 months (p=0.42). There were no differences in number of partners in past 6 months among 40+ compared to younger MSM (7.6 vs. 9.0, p=0.98), but fewer MSM 40+ had heard of PrEP (89% vs. 98%, p=0.007), and 40+ MSM with at least 3 partners in past 6 months were less likely to report current/past PrEP use compared to younger MSM with the same risk (25% vs. 42%, p=0.09). Majority (65%) of 40+ MSM were interested in learning more about PrEP and linkage to the PrEP was initiated.

Conclusions: We found that PrEP awareness and use was lower in MSM 40+ compared to younger counterparts despite similar risk behavior. Provider and individual level interventions to raise awareness of risk, link to and engage in prevention services are critical. Engagement needs in this age group are likely different than in their younger counterparts.

259 The Impact of an Online HIV/AIDS Awareness Campaign Initiative on Knowledge and Voluntary Screening in Baton Rouge, LA

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Background: The purpose of the project was to increase knowledge, voluntary HIV/AIDS screening by 10%, raise awareness of existing services, and to link individuals with HIV/AIDS to care sooner. The project site had the fourth highest incidence of HIV/AIDS in the nation. Effective internet-based HIV prevention strategies had positive results throughout the literature.

Project Implementation: Three African-American churches participated over a nine-month period. Parishioners were encouraged to visit the Initiative website at www.BRknowsHIV.com. Three Community Based organizations (CBO) also collaborated, which provide HIV/AIDS educational resources and free screening. The Theory of Planned Behavior was used as the theoretical framework.

Evaluation Criteria: To measure HIV/AIDS knowledge among participants, a pretest-posttest of HIV Knowledge Questionnaire (HIV-KQ-18) (Carey & Schroder, 2002) was used. Each CBO reported numbers of persons who screened as a result of the initiative, tested positive, and were linked to care. Functionality of the website was evaluated on a 5-point Likert scale.

Outcomes: The website had 2,702 sessions. Pre-test knowledge scores (N=31 participants) ranged from 6 to 18 (M = 13.42, SD = 3.40) with 41.9% (n = 13) participants scoring at or above the 15. Only 3 of the 31 participants completed both the pre- and post-HIV knowledge questionnaire. The average score for the 3 participants on the pre-test was 13.6 and 15.6 on the post-test. There was no significant differences in the pre-test scores (M=13.67, SD 3.21) and post-test scores (M=15.67, SD 0.58) for those participants; t(3)=1.309, p=.321. Two CBOs reported that 21 individuals voluntarily tested. Zero tested positive for HIV/AIDS, therefore no one needed for care linkage.

Conclusion: There is a great need to continue to explore ways to increase HIV/AIDS knowledge, and voluntary screenings so people are linked to treatment sooner. Due to the interest in this website, websites can contribute to HIV/AIDS education.

263 Health Service Utilization and HIV Control following Affordable Care Act Implementation in a California Health Care System

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Background: Whereas the Affordable Care Act (ACA) increased access to insurance coverage for people living with HIV (PLWH), it is unknown to what extent demographic characteristics, comorbidity, and coverage that includes higher deductibles impact use of services and HIV clinical outcomes among new enrollees. This study examined factors associated with primary care and substance use treatment utilization and HIV control among PLWH in an integrated health care system in California following ACA implementation in 2014.

Methods: The sample included HIV-positive patients newly enrolled in Kaiser Permanente Northern California (KPNC) between January-December 2014 (N=880). Measures included demographics, medical, psychiatric and substance use disorder diagnoses within six months of enrollment, deductible levels (none, 0-$1,000 and $1,000+) and enrollment mechanism (through the California Insurance Exchange vs. other mechanisms, e.g., employers or Medicaid), derived from KPNC electronic health record data. Using logistic regression, we examined factors associated with initiation of primary care substance and substance use treatment, as well as factors associated with suppressed HIV viral load (<75 copies/mL) , up to six months post-enrollment in KPNC.

Results: Factors associated with having one or more primary care visits included older age (measured continuously, $p<.01$), white vs. other ethnicity ($p<.05$), tobacco use disorder diagnosis ($p<.01$), having a psychiatric diagnoses ($p<.01$), and enrollment through the Exchange vs. other mechanisms ($p<.01$). Substance use treatment was associated with younger age ($p<.01$), tobacco use ($p<.01$) and having a psychiatric diagnosis ($p<.01$). Suppressed viral load (<75 copies/mL) was associated with older age ($p<.01$) and white vs. other ethnicity ($p<.05$).

Conclusions: Comorbidities such as substance use and psychiatric disorder diagnosis were associated with primary care and substance use treatment initiation among newly enrolled PLWH. The positive association between Exchange enrollment and use of primary care suggests that Exchange enrollees were able to engage in treatment. Findings identified demographic characteristics of PLWH who could potentially benefit from support in initiating primary health care services, following enrollment in insurance coverage.

264 Participants' Perspective: Post-Study Qualitative Analysis of a Randomized Trial to Test a Peer Mentor Intervention to Improve Outcomes for Individuals Hospitalized with HIV

Sophie Minick (presenting)[1], Sarah May[1], K. Rivet Amico[2], Jeffrey Cully[1], Jessica Davila[1], Michael Kallen[3], Melinda Stanley[1], Thomas Giordano[1]

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Background: Few interventions have been shown to improve retention in HIV care. We recently completed a randomized, controlled clinical trial of an intervention based on peer mentoring. The intervention, tested in out-of-care hospitalized patients, did not increase re-engagement in outpatient HIV care. We sought to gain insight into our negative study results.

Methods: We conducted 25 semi-structured one-on-one interviews with participants after the primary study results were unblinded and analyzed. Participants from control and intervention arms were approached equally, as were participants with success or failure on the primary study outcome. Eleven mentors and health educators (control interventionists) who took part in the study were also interviewed. Interviews were coded by two researchers and thematically analyzed.

Results: Patient participants supported peer mentoring, reporting good rapport and ease of transition from hospital to the out-patient clinic facilitated by their mentor; nevertheless, they identified ongoing challenges mentoring did not address. These challenges included structural support such as completing paperwork, securing transportation, and rescheduling missed appointments. Patients identified (a) their own will to seek care and (b) internalized stigma as limiting their success in overcoming challenges to retention. The participants also suggested: having more frequent contact with interventionists; providing additional support for mental health problems; and emphasizing comprehensive care to improve overall health rather than exclusively focusing on HIV. Finally, participants in the control arm reported significant support from the health educator. Mentors and health educators agreed with the patient-reported barriers and added that some patients were too sick or too unwilling to benefit from their interactions.

Conclusions: Mentoring was impactful and highly acceptable but likely did not provide enough structural support and was not broad enough to address all barriers to HIV care. The attention control intervention may have had an unintended positive impact. Questions remain on how to best impact motivation.

265 Characteristics of HIV Serodiscordant Couples Enrolled in a Mobile Phone-Based Study in Thika, Kenya

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Background: Mobile phones are widely available globally. Short messaging service (SMS) has been used for collection of self-reported research data and may allow for reduced social desirability and recall bias compared to in person self-report; however, it is unclear how many people are able to provide data through this technology.

Methods: The Partners Demonstration Project was an open-label study of integrated PrEP and antiretroviral therapy (ART) among 332 high-risk serodiscordant couples in Thika, Kenya. In an ancillary mobile phone study, SMS surveys were sent to participants to determine the relationship between PrEP adherence patterns and HIV risk exposure. Eligibility for this sub-study depended on personal phone ownership, with access to charging services, use of a telecom network compatible with the SMS survey platform, willing to take PrEP for the next 3 months and ability to use SMS.

Results: Of the 249 HIV serodiscordant couples screened, 193 (78%) were enrolled. The median age was 30 (IQR 27-36) years, 80% were male and 55% had >8 years of education. Reasons for ineligibility were illiteracy (43%), not owning a personal mobile phone (30%), no access to charging services (8%), technical problems during registration (10%), unsupported mobile network platform (5%), nature of work (3%) declined (1%) reasons which were not mutually exclusive. Compared to participants who enrolled, those who were ineligible were more likely to be ≥24 years of age (OR=1.5, 95% CI 1.1, 2.2, p=0.02) and have ≤8 years of education (OR=2.9 95% CI 1.5, 5.4 p=0.001).

Conclusions: The high rate of eligibility and enrollment into this ancillary study implies that the use of SMS service is a potentially useful tool for collection of data on sexual behavior and study product adherence, especially for studies involving educated youth.

266 Strategies to Engage with Youth Regarding PrEP: Lessons Learned from Recruitment of Youth for Focus Groups

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Background: Youth aged 13-24, particularly young men who have sex with men (YMSM) of color, are disproportionately burdened by HIV in the United States. Pre-exposure prophylaxis (PrEP) is effective at reducing HIV infection when taken as prescribed, but substantial barriers exist along the PrEP care cascade for youth.

Method: The University of Minnesota Youth and AIDS Projects (YAP) provides outreach and education for HIV+ and HIV- high-risk youth, mainly for YMSM of color. We are using focus groups to assess the knowledge, attitudes, and barriers to PrEP among youth (ages 13-24) eligible for PrEP but not currently taking it. Data obtained from these groups will inform the development of a comprehensive youth-centered PrEP program.

Results: Recruitment of youth for PrEP focus groups is challenging. We found that many youth are more comfortable in one-on-one interviews, since peer groups are potential sources of embarrassment or disclosure. Recruiting this population by working directly with other youth-focused community partners who have existing relationships with high-risk youth was substantially more successful than indirect methods such as fliers, e-mails, or posts on websites or social media. Additional support, including providing private transportation to and from groups and offering flexible scheduling, also greatly facilitated participation. Although recruitment was challenging, the lessons we have learned about PrEP use in youth are invaluable and will alter how we provide PrEP programming for this high-risk group.

Conclusion: Input from youth at high-risk for HIV infection is essential to develop youth-centered comprehensive HIV prevention programs that include PrEP. We found that high-risk youth including YMSM of color are more likely to participate in qualitative research about PrEP if they are recruited directly by people they trust in the community and are provided with additional support and resources to attend groups. The option for individual interviews was more comfortable for many, especially for transgender youth.

267 Ensuring Emotional Support and Retention: Lessons Learned from the Closure of a Ryan White CARE Act-Funded, HIV Primary Care Clinic

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Background: This case study depicts barriers to HIV retention in care for more than 800 people living with HIV (PLWH) while transferring from one Ryan White HIV/AIDS Program to another. Strategies used to address the medical and emotional needs of a displaced patient population are described, and lessons learned are discussed.

Method: Serving mostly indigent, African-American PLWHs in Jefferson County, Alabama, St. George's Clinic (SGC) was closed December 2012 as a result of countywide budgetary shortfalls. Distressed patients expressed concern for the potential gap in HIV medical care and anger for being displaced from their medical home. The University of Alabama at Birmingham's (UAB) 1917 Clinic, the only local HIV medical provider capable of expanding services to meet SGC patient needs, began to transfer SGC patients despite its own caseload of more than 1,900 patients. Leadership from both clinics worked diligently to establish a systematic process for patient transfer that accounted for clinical, emotional, and socio-economic needs.

Results: Comprehensive planning despite minimal warning of clinic closure proved integral to the success of this transition process. Work by transition teams to systematically track transferring SGC patients and connect them with the new clinic environment largely mitigated the potential negative impact of clinic closure. To address patient anxiety, weekly town hall meetings were held to discuss concerns and quell rumors surrounding the transition. To build trust, SGC medical providers and staff were hired by 1917 Clinic. In the end, over 97% of SGC patients successfully transitioned, and, after two years, 85% of these patients were retained in care.

Conclusion: The process of transferring HIV care from one clinic to another is complex and time-consuming. Careful planning by leaders that actively incorporates patient input is critical. Establishing contingency plans may contribute to successful transition when similar crises emerge.

268 Role of Gender in the Patient-Provider Relationship: A Qualitative Study of HIV Care Providers in Western Kenya with Implications for Retention in Care Interventions

Jennifer Knight (presenting)[1], Juddy Wachira[2], Caherine Kafu[2], Paula Braitstein[3], Ira Wilson[1], Abigail Harrison[1], Regina Kamene[2], Jacqueline Akiny[2], Beatrice Koech[2], Becky Genberg[1]

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Background: The disproportionate burden of HIV prevalence among women in Kenya reflects underlying gender inequities, which also impact patient-provider relationships, a key component to retention in care. This study explored how gender shapes the patient-provider relationship and consequently, retention in HIV care in western Kenya.

Methods: We recruited 60 willing and consenting HIV care providers from three facilities in western Kenya affiliated with the Academic Model Providing Access to Healthcare (AMPATH) in Webuye, Busia, and Moi Teaching and Referral Hospital (MTRH) in Eldoret for one-hour interviews from September 2014-August 2015. Interviews were conducted and audio recorded in English or Swahili by trained research assistants, then transcribed and imported into NVivo. A structured coding scheme related to gender was developed and all transcripts were coded accordingly.

Results: Gender construction as culturally defined, emerged as an important barrier negatively impacting the patient-provider relationship through three main domains: 1) conflicts in power-sharing due to interaction of gender and professional status in the health care setting, 2) patient communication styles shaped by gender, and 3) contextual barriers created by gender. Providers described challenges where gender conflicted with professional status (ie. male patients disrespecting the professional role of female providers, and struggling for dominance with male providers). Providers also described female patients as more indirect, evasive and dishonest in their communication, while male patients were portrayed as direct and forthcoming, though impatient and arrogant. Lastly, providers expressed negative perceptions and judgmental attitudes toward patients with poor adherence and retention, particularly women due to gender-related domestic and socioeconomic barriers.

Conclusions: Interventions addressing gender dynamics and inequities in health care that leverage the patient-provider relationship are urgently needed to fully promote long-term adherence and retention in HIV care.

271 "She Will Be Missed": A Retrospective Chart Review of Nine Postpartum Deaths in San Francisco

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Background: Reproductive health, trauma and HIV intersect in ways that dramatically affect women's lives. Women living with HIV (WLHIV) have lower engagement in HIV care during pregnancy and lower adherence to antiretrovirals postpartum. WLHIV with recent trauma are four times more likely to experience antiretroviral failure.

Given this, we sought to understand causes and contexts of death for HIVE patients who died postpartum. Based at Zuckerberg San Francisco General Hospital, HIVE provides preconception and prenatal care to women and couples affected by HIV.

Methods: We included women who were patients between 2006 and 2015 and died within 10 years of pregnancy. We retrospectively reviewed patient charts from time of first HIVE visit to death using three electronic medical records. Objectives were to: (1) review demographic and socioeconomic characteristics of WLHIV who died postpartum; (2) identify causes of death; and (3) examine gaps in care to inform future postpartum retention efforts.

Results: Nine women were identified for the review. All were women of color. Four died within two years postpartum. Eight experienced substantial lifetime trauma or intimate partner violence during pregnancy and postpartum. A majority (67%) was homeless or marginally housed. Four experienced custody loss; eight had postpartum depression. Four of seven women with viral load data at delivery were virally suppressed. Causes of death in the medical record were: AIDS opportunistic infections, heart failure, hypertension, pulmonary embolism, and kidney failure. Proximal contributors were: chronic stress, trauma, custody loss, housing discrimination, substance use, and challenges adhering to antiretrovirals.

Conclusions: Our findings highlight the impact of individual and structural trauma on women of color living with HIV. HIVE aims to mitigate effects of trauma by linking women and their families with supportive social services during pregnancy and postpartum, optimizing treatment adherence, and piloting a postpartum risk assessment tool to promote engagement and retention in HIV care.

273 Risk Factors Associated with Multi-Dimensional Stigma among People Living with HIV/AIDS who are Homeless/Unstably Housed

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Background: Previous studies have found stigma to be a barrier to HIV care among people living with HIV/AIDS (PLWHA). This study examined the prevalence and types of stigma among homeless PLWHA, and evaluated factors associated with stigma.

Methods: This study was conducted as part of a larger study funded by the Health Resources and Service Administration, HIV/AIDS Bureau, Special Projects of National Significance Homeless Initiative to increase engagement in HIV care among homeless PLWHA. Surveys were conducted at study enrollment. Types of stigma measured included perceived external and provider-related stigma due to HIV homelessness, mental health, and substance abuse. Bivariate and multivariable regression analyses were conducted to examine associations between stigma and demographic, health status and other social factors.

Results: Approximately two-thirds of participants (n=528) reported HIV stigma, with one-fourth reported stigma related to homelessness, substance use and mental health. Fewer than 10% of participants reported provider stigma. Lower social support, having higher unmet needs, having a mental health diagnosis, and lower physical and mental health-related quality of life were associated with individual types of stigma. Mental health-related quality of life was significantly related to multiple dimensions of stigma.

Conclusions: Multiple dimensions of stigma are persistent among homeless PLWHA. Provider stigma may be less of a challenge especially in healthcare settings where addressing HIV and co-morbidities such as mental illness and substance use is part of the services and culture of staff. Resources are needed to reduce stigma across multiple dimensions to help improve outcomes for PLWHA.

274 Feasibility of a Pilot Communication Intervention to Promote Linkage to HIV Clinic after Routine HIV Testing in Nakivale Refugee Settlement in Uganda

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Background: In Nakivale Refugee Settlement, 54% of newly diagnosed HIV-infected clients link to HIV clinic. We evaluated the efficacy of a communication intervention on linkage to care.

Methods: From November 2014-July 2016, clients undergoing HIV testing in Nakivale were offered a communication intervention. Mobile phone access was required to participate. Enrolled clients were phoned weekly (up to 3 calls/week) to encourage clinic attendance; clients who could read also received weekly text message reminders. The primary outcome was an initial HIV clinic visit within 90 days. We used two-sample test of proportions and Wilcoxon-Mann-Whitney test on the equality of medians to evaluate characteristics of willingness to participate.

Results: Of 5,586 clients undergoing HIV testing, 2,901 (52%) were willing to participate in the communication intervention. Willingness to participate was higher among males than females (67% vs 37%, $p<0.001$), Ugandan nationals than refugees (58% vs 49%, $p<0.001$); and those living closer than further to clinic (median time to clinic 30min, IQR 20-60 vs 60min, IQR 25-105, $p<0.001$). Of 209 HIV-infected clients, 107 (51%) did not participate; 94/107 (88%) reported they could not participate because of no phone access. Of 102 (49%) participants, 48 (47%) were literate and received text messages. There was no difference in linkage to clinic within 90 days of HIV testing between the intervention and non-intervention groups (49% vs 51%, $p=0.973$). Excluding clients who linked prior to the intervention (n=81), there was a trend toward increased linkage in the intervention group (61% vs 39%, $p=0.162$).

Conclusion: In Nakivale Refugee Settlement, males, Ugandan nationals and those living closer to clinic were more willing to participate in a communication intervention. Poor access to phones limited enrollment. Low literacy among participants restricted use of text messages. Nonetheless, the pilot communication intervention suggested a trend toward improved linkage to an initial HIV clinic visit.

279 Transgender Women and Engagement in the Pre-Exposure Prophylaxis Continuum

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Background: Transgender women (TW) are at substantial risk for HIV infection, however little research has been conducted to understand how TW decide to initiate pre-exposure prophylaxis (PrEP). Applying critical points of the PrEP continuum to a sample of TW in New York City will lead to understanding specific barriers to PrEP uptake for this unique and high risk population.

Methods: We utilized data collected as part of the baseline assessment of a randomized controlled trial of an intervention for TW. Data from 101 HIV-negative TW were analyzed and women were objectively identified, using modified CDC criteria, as PrEP candidates based on their recent sexual behavior, and questions regarding willingness and intention to begin PrEP were asked.

Results: Of the 101 TW, 89% reported being sexually active in the past two months and 65% were objectively identified candidates for PrEP. Of those identified as candidates, slightly more than half (56%, n=37) self-identified as a candidate for PrEP; 47% (n=31) were willing to take PrEP. Of those who were both willing and self-identified as candidates 82% (n=22) intended to initiate a PrEP regimen within the next three months. Of those, 55% (n=12) were currently prescribed PrEP. Of those objectively identified as PrEP candidates, TW of color (63%) were more likely to be willing and self-identify as a PrEP candidate compared to white TW (37%) (p=.074). Many TW (67%) expressed concerns that PrEP might interact with current medication or hormones and 62% felt PrEP had largely not been studied among TW.

Conclusions: Only 1 on 5 TW who met objective identification for PrEP uptake was currently prescribed PrEP. Understanding and identifying the specific barriers to PrEP uptake for TW in NYC helps to inform the development of targeted interventions aimed at increasing uptake, and eventual adherence.

280 Lessons Learned from the Development of Electronic Medication Complete Communication (EMC2) Trial: An Intervention to Promote Safe Use of High-Risk Medications

Stacy Cooper Bailey (presenting) [1], Michael Paasche-Orlow[2], William Adams[2], Amy Moore[3], Michael Wolf[3]

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Background: People living with HIV are often prescribed higher-risk medications. Yet few mechanisms exist to ensure they receive and understand Rx instructions or risk information, particularly in safety net systems. In response, we developed the Electronic Medication Complete Communication (EMC^2) Strategy to promote safe medication use in outpatient settings. We are currently conducting a NIH-funded randomized controlled trial to compare the effectiveness of this strategy to usual care.

Methods: The EMC^2 Strategy consists of: 1) provider alerts via the electronic health record (EHR) to promote counseling on medication risks, 2) the delivery of patient-friendly medication information with the After Visit Summary, and 3) an automated telephone assessment for patients to report medication concerns post clinic; any identified issues are automatically documented in the EHR, triggering a clinic response. Study sites are community health centers in Chicago, IL. English or Spanish-speaking adults (N=1,200) who have been prescribed a high-risk medication will be enrolled and randomized by clinic to intervention or usual care. Outcomes include medication knowledge, medication use, and reporting of ADEs, measured at baseline, two weeks, and three months. Intervention fidelity and barriers/costs of implementation are also being evaluated.

Results: The technological build for the EMC2 strategy was complex and multifaceted, involving high levels of coordination between sites and systems. Using technology to screen for side effects raised ethical and legal concerns and required multiple rounds of adaptation. Specifying the optimal mechanisms and level of acuity for providing patient feedback to clinics was challenging; protocols for responding to identified concerns were ultimately tailored to each clinic in accordance with regulatory requirements.

Conclusions: Collaborative, multi-disciplinary teams and ample time are needed to implement innovative, technology-based interventions. Findings from the EMC^2 trial, anticipated in 2019, should provide insight on the feasibility and effectiveness of EHR-based strategies to promote safe medication use.

283 Patient Characteristics to Consider when Supporting Antiretroviral Therapy Adherence in People Living with HIV: A Randomized Controlled Trial in Estonia

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Background: The efficacy of a feasible evidence-based treatment adherence support intervention for people living with HIV (PLHIV) on antiretroviral therapy (ART) was assessed in a randomized controlled trial (RCT) in Estonia, a country with highest (almost four times the average) rate of new HIV diagnoses per 100,000 population in the European Union / European Economic Area. The current work focuses on patient characteristics associated with loss to follow-up and their relation to adherence.

Methods: Adult PLHIV on ART were recruited into a RCT, assessing the efficacy of a 3-session ART adherence counseling by nurse (incorporated into routine clinic visits) to those in the intervention arm, compared to usual care in the control arm. Main outcome measures were optimal adherence (3-day recall ≥95%) and undetectable viral load (<40 copies/mL) at 12-month follow-up.

Results: Of the 519 patients randomized, 82% completed the study. Loss to follow-up did not differ between the arms (41 and 52 participants in the intervention and control arms, respectively; p=0.288). Factors associated with non-retention were male gender (p=0.007), coping poorly with current income (p=0.052), ever being in prison (p=0.010), using drugs (non-injecting (p=0.015) and injecting (p=0.047), fewer health care visits in the 12 months pre-study (p<0.001), and detectable viral load at baseline (p=0.031). Across all these subgroups, the effect of intervention (with data imputed) was beneficial, but reached statistical significance only among those not coping with their current income (adjusted RR 1.18 95% CI 1.00–1.38, p=0.044) and those with prison experience (adjusted RR 1.27 95% CI 1.05–1.54, p=0.016).

Conclusions: Our RCT indicated that the ART adherence intervention was a valuable addition to HIV clinical care in supporting treatment adherence, regardless of participants' propensity to stay in care.

284 Pre-Exposure Prophylaxis as HIV Prevention in a Rural Clinic: A Descriptive Study

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Background: Human immunodeficiency virus (HIV) remains a major public health threat to the southeastern region of the USA. Pre-exposure prophylaxis (PrEP) has shown to be effective in the prevention of HIV among sexually active people and injection drug users. Uptake of PrEP is slow, especially among medical providers and patients in the rural South.

Method: This retrospective chart review examines patients older than 18 years of age, who either self-referred or were referred by their primary care provider to our infectious diseases clinic and expressed interest in beginning a PrEP regimen between January 1, 2015, and December 31, 2016.

Objectives of this presentation are to describe:

- Our clinic's experience in providing and prescribing PrEP,
- The role of our PrEP Navigator/Linkage Retention Coordinator (PN-LRC),
- The demographic factors of patients prescribed PrEP,
- HIV and STI transmission among patients while on PrEP, and
- Side effects of PrEP and reasons for discontinuation.

All patients who were scheduled an appointment with the PN-LRC received basic HIV education information and a personalized assessment of their HIV risk. Afterward, patients met with a physician who reviewed their indication for PrEP and completed a PrEP checklist based on CDC recommendations. If the patient met PrEP criteria based on their laboratory work, a prescription was sent for pick-up to the patient's preferred pharmacy. The patient then returns 1 month post-initial lab work for repeat lab work and again every 3 months thereafter for an assessment by physician and repeat lab work. Baseline PrEP labs were obtained and patient was contacted once results were available.

Results: Our experience suggests initiating PrEP in a rural clinic is complex. Challenges in providing PrEP to a rural population and the generalizability of this data to other rural clinics in the rural South is discussed.

Conclusion: Expansion of PrEP services is needed.

286 "Protect Yourself, Protect your Baby": Florida Department of Health in Broward County's Perinatal HIV Program

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Background: In Broward County Florida, there were 19,585 individuals living with human immunodeficiency virus (HIV) through 2015, of which only 63% are virally suppressed. Florida's Continuum of Care suggests that females, between 13 and 49 years of age, are experiencing lower rates of viral suppression. In Broward, over two-thirds (68%) of the HIV cases among women were of childbearing age (13-49). In 2016, there were 117 known HIV positive pregnant women, 102 (87.2%) were Black, 8 (7%) were White and 7 (6%) were Hispanic.

Method: The Perinatal Program of the Florida Department of Health in Broward County has reported, tracked and case-managed all known HIV positive pregnant women. The case management included the following: 1) comprehensive HIV education; 2) linkage to prenatal and HIV care; 3) retention in care services; and 4) antiretroviral adherence counseling, support and monitoring.

Results: A comprehensive linkage, re-engagement, and adherence program, specialized for HIV positive pregnant women, can be effective for reporting and case managing known HIV positive pregnant women. Engaging HIV positive pregnant women into intensive case management, increases outcomes for HIV positive pregnant women and their children, especially among those women disproportionately affected by HIV. Specialized positions within a Perinatal Program such as a Perinatal Disease Intervention Specialist and Perinatal Coordinator can improve a program's effectiveness.

Conclusion: Promoting the services provided by a comprehensive Perinatal Prevention Team is essential to increase program awareness and utilization. This can be done by providing educational Grand Rounds at labor and delivery hospitals, visiting obstetric and gynecological practices yearly, and facilitating monthly perinatal network meetings. Coordination of perinatal services by utilizing a perinatal network systems help to enhance and streamline services for HIV positive pregnant women and their neonates.

287 Experiences of Transitioned Perinatally HIV-Infected Patients in Adult Care: Program Implications

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Background: Increased survival of perinatally HIV-infected (PHIV) adolescents and "aging out" of comprehensive pediatric care led to concerns about discontinuation of HIV care. We sought to learn from the experiences of transitioned patients to improve our transition program.

Methods: We conducted a mixed-methods study of PHIV adults who transitioned from a south Florida pediatric clinic between January 2003 and September 2012. Participants completed a computer-assisted survey at the pediatric clinic about their transition experiences, personal characteristics, and health status. Information was supplemented with debriefing notes and data abstracted from medical records. Data were analyzed using quantitative and qualitative (thematic analysis) methods.

Results: Of 33 eligible patients, one was lost to follow-up; five refused or did not return phone calls, and 27 (82%) provided consent. Most participants (aged 25-34 y/o; mean =27 y/o) had received transition services, but many (59%) had trouble "doing well" in adult HIV care. About 1/3 had not seen an HIV provider in the past six months; reported poor health, and gaps in health insurance coverage in the past year. Transition was experienced as a loss of social support *("Now I'm basically alone")*. Post-transition experiences were characterized by needs for patient-centered care, including convenient, accessible, adult HIV services ("*Amazing doctor …Problem was to get into her office to see her. She did not pick up the phone"),* and personal, caring, relationships with adult providers ("*They just went through the motions. If they care, you will take better care of yourself also"*). Participants recommended post-transition support because "*Once you are out there you know how it is.*"

Conclusions: These data suggest that individual transition preparation may not guarantee successful transition. Inter-personal and system-level interventions (improve access to and delivery of optimal adult services) and post-transition support may be needed to facilitate retention in adult care.

288 Identifying Motivations for and Barriers to PrEP Uptake among Gay Couples

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Background: In the US, an estimated 32-68% of new HIV infections among gay, bisexual, and other men who have sex with men (GBM) occur through main partnerships. Pre-exposure prophylaxis (PrEP) is CDC-recommended for GBM in non-monogamous and serodiscordant relationships, but no prior research has explored how perceived barriers and motivations to PrEP vary as a function of sexual agreements and intimacy.

Methods: Partnered GBM (n=48; 24 couples; mean age 27.6 years, 60.4% White, 62.5% 4-year college degree or more) underwent Couples HIV Testing and Counseling (CHTC). At least one participant per couple was 18-29 years old and reported recent drug use. Couples discussed their HIV prevention strategies and information about PrEP was provided, typical of CHCT. We analyzed transcripts of PrEP-related session content using thematic analysis.

Results: Motivations for and barriers to PrEP varied across couples' sexual agreement and serostatus. Some serodiscordant couples were motivated to use PrEP to reduce the impact of HIV on their relationship; however, others felt treatment as prevention (TasP), condom use, and seropositioning offered sufficient protection. Non-monogamous couples cited risk and anxiety reduction benefits of PrEP, whereas couples who chose to forego PrEP did so because they were electing to use condoms and/or felt PrEP would encourage risky or irresponsible behavior. Consistent with prevention recommendations in which monogamous couples in seroconcordant relationships are considered lower risk, monogamous men who chose to forego PrEP described it as unnecessary. Alternatively, some monogamous couples chose to use PrEP because of protection beliefs for the gay community.

Conclusions: PrEP is only one method of HIV prevention couples used, and prevention messaging interventions should be tailored to address relational factors relevant for partnered GBM. PrEP dissemination strategies for partnered men could incorporate prevention alternatives (e.g., condom use and TasP) to better inform couples' choices about HIV prevention.

289 PrEP: Communication, Attitudes, and Uptake among Gay Couples

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Background: Main partners account for many – possibly most – new HIV infections among gay and bisexual men in the US. Failures in communication around HIV risk may enhance the risk of main partner infection and strategies – such as the formation of sexual arrangements – may help to effectively assess and manage risk in relationships. Relatively little research has examined partner communication around PrEP and potential variation across sexual agreements.

Methods: Partnered GBM (n=82; 41 couples; M_{age}=27.1 years, 67% White, 63% 4-year college degree or more; $M_{relationship\ length}$=2.6 years) independently completed survey assessments in a study of gay couples' sexual health. We examined the concurrence in partners' report of PrEP discussions and related attitudes as well as ssociations of sexual arrangement (monogamous/non-monogamous) and PrEP discussions with sexual communication (α=.84) using generalized estimating equation modeling with dyadic nesting of couples.

Results: Overall, 23% of participants were on PrEP; 7 (17%) couples reported concurrent PrEP use, and 5 (12.2%) couples reported discordant PrEP use. Most (70.1%) couples concurred about discussing PrEP, and all men on PrEP reported discussing it with their partner. Most men (70%) were in favor of PrEP and 77% of their partners correctly identified their attitude, Sexual communication scores were higher among couples who discussed PrEP (B=8.34, p=.03). The association between sexual communication and having discussed PrEP was moderated by relationship arrangement; communication scores were significantly associated with having discussed PrEP among men in monogamous (B=9.7; p=.03) and non -monogamous arrangements (B=11.0; pB=7.6; p=.13).

Conclusions: GBM in relationships and on PrEP uniformly reported discussing PrEP with their partners, and perceptions of partners' PrEP attitudes were largely accurate. Commonly used measures of sexual communication may serve as a meaningful predictor of PrEP-related discussions among gay couples. HIV prevention for partnered GBM could be enhanced through interventions focused on facilitating sexual communication between couples through strategies such as Couples HIV Testing and Counseling.

290 Pilot Study of a Multi-Pronged Intervention Using Social Norms and Priming to Improve Adherence to Antiretroviral Therapy and Retention in Care among Adults Living with HIV in Tanzania

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Background: Insights from behavioral economics and psychology have the potential to enhance the HIV care continuum. These approaches recognize that decisions are influenced by emotions, contexts, and decision-making shortcuts outside of conscious awareness. To test this hypothesis, we evaluated a combination intervention to improve adherence and retention based on the concepts of social norms and priming, which is when a stimulus indirectly influences another behavior.

Methods: Patient-centered design was used to develop the intervention, which included visual feedback about clinic-level retention (social norms), a self-relevant prime, and useful take-home items with the priming image. We conducted a quasi-experimental pilot study of the intervention at two clinics in Shinyanga, Tanzania. We reviewed medical records of a random sample of 438 adult patients living with HIV infection (PLHIV, 320 exposed to the intervention, 118 unexposed) and compared retention in care and the proportion with ≥95% medication possession ratio (MPR≥95%) after six months. Intervention acceptability was determined through an in-person survey of 405 PLHIV at baseline (n=189) and endline (n=216).

Results: PLHIV exposed to the intervention were significantly more likely to be in care after 6 months (87% vs. 79%, adjusted odds ratio (OR_a)=1.73, 95% CI: 1.08, 2.78, p_a=1.51, 95% CI: 0.96, 2.37, p=0.07). The intervention was associated with increases in staff support of treatment goals (100% vs. 95%, p=0.01) and life goals (66% vs. 50%, p<0.01).

Conclusions: This novel intervention has the potential to improve the clinic experience, short-term retention in care, and ART adherence. Future studies are needed to expand the generalizability of the approach and evaluate effectiveness on clinical outcomes.

292 Psychosocial Wellbeing and Immune Health among HIV-Positive Older Adults: Further Evidence for the Critical Influence of HIV Stigma

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Background: Available evidence suggests a link between psychosocial wellbeing, adherence, and immune function. For example, depression has been strongly linked to inflammatory processes and this has been shown among individuals with chronic illnesses such as HIV. We sought to explore how a range of psychosocial issues might influence immune health among older adults with HIV, adjusting for known differences in adherence and virologic failure.

Method: We enrolled 120 substance-using, HIV-positive older adults, and utilized a multivariable linear regression predicting log CD4 cell count with depression, loneliness, social support, HIV stigma, alcohol use problems, and drug use problems, adjusting for gender, race, income, age, years since HIV diagnosis, medication adherence, and undetectable viral load.

Results: The sample was two-thirds male (*n*=81, 67.5%) and the majority were people of color (*n*=111, 92.5%). The average age was 54.6 (*SD*=4.1) and participants had been living with HIV for an average of 17.1 years (*SD*=6.9). In the adjusted multivariable models, we found that HIV stigma was the only significant psychosocial predictor of CD4 count (β=-0.27, *p*=0.02)—depression, loneliness, social support, alcohol use problems, and drug use problems were all non-significant.

Conclusions: In adjusted models, HIV stigma was the only psychosocial condition to show a statistically significant association with CD4 count, such that increased levels of stigma were associated with decreased CD4 count (i.e., poorer immune health). This was true even after adjusting for factors such as medication adherence and undetectable viral load. This study provides evidence that HIV stigma is a critical psychosocial factor influencing the immune health of HIV-positive older adults. Interventions with this population should focus on reducing stigma. Future research should examine the interrelation among these psychosocial conditions and how they may interact in their association with health.

294 Mortality among HIV-Infected Women following Delivery in Mississippi

Aadia Rana (presenting)[1], Kendra Johnson[2], Chisa Lanier[3], Binford Nash[3], Caron Zlotnick[1], Gina Wingood[4], Leandro Mena[3], Debbie Konkle Parker[3], Ira Wilson[1]

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Background: HIV infected women in the Deep South experience significant disparities in health outcomes. We describe mortality outcomes among HIV-infected women following delivery in Mississippi.

Methods: We conducted a retrospective analysis of demographics and medical outcomes among HIV-infected women who delivered in Mississippi from January 1, 2002 to Dec 31, 2014 using data from all 9 federally funded Ryan White clinics in Mississippi and the Mississippi State Department of Health (MSDH) Enhanced HIV/AIDS Reporting System (eHARS). Mortality data, included cause, was obtained from MSDH eHARS, the MSDH Office of Vital Records and the National Death Index. Univariate and multivariable analyses were used to predict variables associated with death.

Results: Of the 549 women who delivered during the study period, there with 68 deaths (12.4%). For the deceased women, the median age at HIV diagnosis was 22.4 (IQR18.5-26.0), median age at first delivery was 26.1 (IQR: 22.8-30.5), median age at death was 32.4 (IQR 28.3-37.1), median time from last delivery to death was 5.3 years (IQR 3.0 -7.1) with 61.8% (n=42) of deaths occurring between 2010-2015. In the 58 women for whom cause of death was available, 54 (93.1%) were considered AIDS related. On univariate analysis, women who died were more likely to have AIDS designation ever (OR 9.6, CI 4.49-20.5), an initial diagnosis CD4 of <200 cells/μL (OR 5.0, CI 2.87-8.75), and be uninsured postpartum (OR 2.5, CI 1.46—4.39). These variables remained significant on multivariable analysis. The adjusted OR remained significant for all three: AIDS ever (OR 17.5, 5.2-58.7), initial CD4<200 (OR 2.0, CI 1.10-3.64), and uninsured postpartum (OR 2.89, CI 1.57-5.34).

Conclusions: Postpartum HIV-infected women in Mississippi experience significant mortality, primarily AIDS related. Additional analyses will evaluate associations of mortality with linkage and retention in care after delivery. Interventions initiated during pregnancy to support postpartum engagement may improve longitudinal treatment adherence and health outcomes.

297 The Influence of Multiple Stigmas on HIV Care: An Intersectionality Perspective

Will Tarver (presenting)[1], Kristi Stringer[2], Crystal Chapman Lambert[2], Samantha Whitfield[2], Michael Mugavero[2], Rob Fredericksen[3], Sheri Weiser[4], Mallory Johnson[4], Janet Turan[2]

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Background: HIV diagnoses remain high in vulnerable populations likely to experience stigma and increased marginalization, including African-Americans, men who have sex with men, and injection drug users. While studies have explored barriers to care among these populations, less is understood about how the intersection of the various stigmas newly diagnosed individuals may face influences engagement in HIV care.

Methods: We conducted 28 qualitative, in-depth interviews with newly diagnosed HIV patients at two university-affiliated clinics. Semi-structured interview guides were used to facilitate discussion around engagement in HIV care, feelings about HIV status, and experiences of stigma and discrimination across multiple intersectional domains. Interviews were audio-recorded, transcribed verbatim, and analyzed using a theme-based approach. Data were collected as a part of the integrating ENGagement and Adherence Goals upon Entry (iENGAGE) Trial, which is evaluating an engagement in care intervention among a predominantly low-income and African-American new-to-care sample of patients.

Results: Participants described facing multiple stigmas (intersectional stigmas) related to race, poverty/homelessness, gender, sexual orientation, and substance use. Moreover, experiencing these stigmas in combination with HIV was described as being more harmful than experiencing one stigma in isolation. For example, the intersection of multiple stigmas was reported to reduce quality of life by exacerbating psychological symptoms (e.g., stress, depression, suicidal thoughts, and feelings of isolation) and negative self-perceptions (e.g., self-esteem, self-worth). Participants also reported important influences of multiple stigmas; such as a greater neglect of both healthcare (e.g., medication adherence and care visits) and personal responsibilities (e.g., maintaining employment). In addition, participants reported that experiencing multiple stigmas contributes to risky behaviors (e.g., substance use).

Conclusion: Experiencing multiple stigmas creates additional challenges for individuals newly diagnosed with HIV. Incorporating an intersectionality perspective into HIV interventions may be pivotal in improving engagement in HIV care and medication adherence among vulnerable populations initiating HIV medical care.

299 Development of a Wrist-Worn Sensor to Measure ART and PrEP Adherence: Preliminary End-User Design Preferences

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Background: Current medication adherence-promotion devices do not capitalize on advances in wearable sensors. We are developing a system to unobtrusively sense when individuals take their medications, remind them to take medications, and generate data on their adherence. The system works by sensing individuals' gestures related to opening a tagged pill bottle followed by hand-to-mouth arm movement.

Methods: To guide the design of this system, BS (a physician) conducted in-depth individual interviews with likely end-users querying 1) their medication adherence patterns, 2) how they currently store, take, and remember to take their medications, and 3) their feedback about two candidate wrist-worn devices (MS Band, Android Wear Watch). JM led a content analysis of the video-taped interviews.

Results The final sample included 17 participants (16 male; 16 HIV+ taking ART, 1 HIV- taking PrEP; 9 White). Participants reported high 4-week adherence levels – mean (range) 88% (36% -100%). They reported taking medications from rolls of heat-sealed bags (n=9), bottles (n=6), and blister packs (n=2), mostly once per day (n=14). The initial system requires patients to store their medications in bottles; we are working to determine how we could accommodate pill rolls. Participants used a range of medication reminder approaches, including placing the medications in visible locations, a pill roll with time and date on each dose, triggers by time of day, self-motivation, and reminders from others. Thirteen said they would wear one of the wrist devices, with some preference for the MS Band based on appearance and comfort. Handedness is a design challenge, as there was variability in participants' dominant wrist, where they would prefer to wear the device, and which wrist they used to take their pills.

Conclusions Research on a novel, wrist-worn sensor revealed significant acceptability, but design challenges remain related to handedness and pill storage methods.

300 Can "Debrief" Reports Expedite Qualitative Studies? A Post-Hoc Analysis of VOICE-D Trial Data

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Background: Qualitative methodologies have yielded rich information in clinical trials. However, the time required to code and conduct iterative review of lengthy transcripts has limited their use. Recent strategies to harness qualitative data in a more expedited fashion include interviewer "debrief" reports (DR), which summarize content immediately following an interview or focus group. Determining the validity of DR, as yet unestablished, is critical before advocating for more widespread use.

Methods: Data consisted of a random sub-sample of 20 (of 88 possible) pairs of de-identified DR and their linked full transcripts from the first stage of MTN 003D, a qualitative ancillary study among former VOICE trial participants in participants in South Africa, Uganda and Zimbabwe. Topics listed in the DR were: 1) motivation to join the trial, 2) adherence and 3) anal sex. After reading each pair, two reviewers compared the documents and identified content that was Concordant or Theme Disconcordant (content in the DR but the emphasis, prominence, or thematic quality suggested by the full transcript was not well reflected in or was discordant with the DR), Expected but Missing (content in transcript that was missing from DR), or Noted Only in Debrief. Excerpts in each category were examined for themes by multiple reviewers.

Results: Preliminary analyses suggest main themes from the full transcripts are recorded in the DR but that nuance and some pertinent information is lacking. Full results will be available by the conference date. Suggestions will be offered for conducting expeditious yet rigorous qualitative research, particularly in the context of large-scale trials.

Conclusions: Qualitative research methodologies have the potential to inform complex trials, yet their impact is often attenuated by the time required to conduct analyses. Novel methods such as the incorporation of DR may expedite findings from qualitative studies, albeit with some caveats.

301 Formative Research on a Provider-Delivered EMR Alert-Based ART Adherence Counseling Program in Haiti: iSanté Plus

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Background: In Haiti, the country most heavily impacted by HIV/AIDS in the Caribbean region, use of ART has scaled up dramatically; however, concerning levels of attrition, sub-optimal adherence, and suspected treatment failure have been observed. Building upon preliminary research establishing the validity of an electronic medical record (EMR)-based alert of potential treatment failure, the current project aims to conduct formative research on the potential role of EMR alerts and healthcare providers and to develop a clinic-based ART adherence counseling protocol for national rollout in Haitian HIV primary care clinics.

Methods: We are using qualitative methods for formative assessment of provider and patient beliefs and attitudes toward: 1) an EMR-based alert for low ART adherence and risk of ART treatment failure; and 2) provider-based ART adherence counseling. Formative work is taking place in two large public -sector ART clinics, one in Port-au-Prince and the other in Cap Haitian. Methods include patient questionnaires, structured observation of ART patient visits, and focus groups with health care workers. Findings will be used to develop a culturally relevant, manualized protocol for the iSanté Plus intervention and provider training modules.

Results: Preliminary analyses suggest alerts with provider counseling are a feasible and acceptable strategy for Haitian clinics. Intervention content must build on the strengths of Haitian culture, including the strong oral tradition in Creole-speaking communities that values the communication of personal narratives over the completion of structured, paper-and-pencil modules. Final analyses and intervention content based on a problem-solving approach incorporating "Adherence Stories" will be available by the conference date.

Conclusions: This research has the potential to identify an effective and scalable model for ART adherence support within Haiti's national ART program, incorporating an EMR-based alert together with training to improve provider counseling skills.

304 Increased Psychosocial Burden does not Mediate Young South African Women's Risk of Postpartum Viraemia on Antiretroviral Therapy

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Background: Postpartum adherence to antiretroviral therapy (ART) is a widespread concern and young women constitute a high-risk group for non-adherence globally. However the mechanisms that drive younger women's non-adherence and elevated viral load (VL) remain poorly understood. We have demonstrated high levels of viraemia among young postpartum women on ART in Cape Town, South Africa; here we examine whether increased burden of psychosocial risk factors explains why younger women have increased viraemia postpartum.

Methods: ART-eligible pregnant women recruited into the MCH-ART study were followed through 12m postpartum with repeated VL testing, separate from routine care. Standardized questionnaires assessed unintended pregnancy, depression (EPDS), hazardous alcohol use (AUDIT-C) and intimate partner violence (WHO Violence Against Women). Standardized cut-offs were used for each scale with psychosocial burden calculated as the sum of these. Poisson models tested the mediating role of (i) psychosocial burden and (ii) individual psychosocial factors in explaining increased levels of VL>50cps/mL in younger (18-24y) vs older women.

Results: Among 372 women (25% aged 18-24y; 60% in non-stable relationships), 33% had VL>50cps/mL at 12m postpartum. Both younger age (18-24y vs ≥30y) and higher psychosocial burden were strongly associated with VL>50cps/mL in unadjusted models (RR and 95%CI: 2.03; 1.45-2.84 and 1.31; 1.10-1.55, respectively). However, the age effect persisted after adjusting for the potential mediating effect of psychosocial burden (RR for 18-24y vs ≥30y: 1.87; 95%CI: 1.33-2.62). Similarly, no individual psychosocial factor explained the age effect. VL>50cps/mL was particularly prevalent in young women in non-stable relationships, yet higher psychosocial burden was not associated with viraemia in this group.

Conclusions: These novel data suggest that although postpartum psychosocial burden increases the risk of elevated VL in this setting, it does not explain why younger women are at persistently increased risk of viraemia on ART. Further sociobehavioural research is required to understand the mechanisms involved to help target intervention efforts.

305 Beyond "Acceptability": Psycho-Social Motivations and Barriers for LAI PrEP among Current Oral PrEP Users

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Background: Phase III trials of long-acting injectable (LAI) PrEP are currently underway, with great potential for expanding the menu of HIV prevention options. In order to most effectively plan for scale up of new strategies, it is important to understand not only hypothetical acceptability of new options, but also patient attitudes, values, and concerns that may shape choice.

Methods: Respondents (n=105; ages 19-63; 47% people of color) were former participants in a PrEP demonstration project and had been taking daily oral PrEP for ≥12 months. Participants were given information about LAI PrEP and other new prevention options and were asked to rank their preferences. Participants were also asked about specific pros/cons of LAI PrEP, PrEP attitudes and experiences, and personality factors.

Results: Just over half (51%) of current oral PrEP users chose LAI as their first choice prevention method, with no demographic differences. Significant barriers to LAI PrEP fell into three categories: a) injection-related anxiety; b) logistical concerns (i.e., trouble getting to regular clinic visits for recurring shots); and c) loss of control, including concerns about "knowing" whether the medication was still working or feeling less in control of HIV prevention when not taking a daily pill. In addition to ease of use/convenience, motivations for LAI PrEP were largely psychological. Participants who chose LAI scored higher on liking to take risks, liking to try new things, and believing that others are proud of PrEP users. In a multivariate regression model, liking to take risks was the strongest predictor of LAI preference.

Conclusions: These data underscore the importance of attending not only to pros/cons of LAI methods, but also to the psychological experience of prevention methods for users. Findings have significant implications for measures to be included in LAI PrEP trials, and the development of patient education materials.

307 Predictors of Adherence among Black Men who have Sex with Men in South Africa: A Position Paper

Brian Kanyemba (presenting)

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Background: Black Men who have sex with men (BMSM) bears the burden of HIV worldwide comparably to their heterosexual counterparts. This not different in South Africa, were the population size of MSM is estimated to range from 50,000 to 1.2 million, 10-50% are infected with HIV. The WHO Guidelines recommends BMSM at substantial HIV risk and could benefit form PrEP (tenofovir/emtricitabine). PrEP has great potential reduces the chances of HIV infection among BMSM up to 90% if used as prescribed. This position paper will focus on Predictors of adherence among black BMSM in South Africa.

Method: Literature search was conducted on the following databases: PUBMED, Google Scholar, Cochrane library, Global Health Database, and conference abstracts using MeSH terms for PubMed and comparable terms for other databases. Revised existing works that identifies what predictors of adherence means and using a search terms *Predictors, PrEP, Black BMSM* We identified more than 60 papers and only 30 articles met the criteria.

Results: The existing literature on PrEP for BMSM has predominantly focused on acceptability or uptake of PrEP, rather than adherence, which is crucial to real-life effectiveness. Emerging thematic factors affecting adherence include: adherence as behavioural associated; individual risk factors, partner and health care workers support. Socio-demographic factors: age, unemployment and level of education; biological factors such as the concentration of PrEP in the rectal mucosa supported more efficacies to PrEP comparably to on PrEP found in the vaginal mucosa. Adherence measures such as self-report, pill count, blood plasmas monitored adherence Among BMSM self report in the younger BMSM do not correlate with concentration of PrEP in the rectal mucosa.

Conclusion: Successful adherence is a key element to the prophylactic component to PrEP. PrEP can be complicated for BMSM, as it requires consistence daily use. While several studies have quantified the levels of adherence among study participants, what is lacking is a deep understanding of these predictors of adherence success and a measurement that is tailor made to fit the daily lives of BMSM. Therefore future studies should focus examining predictors of adherence among Black BMSM in South Africa. Further efforts should be put on using Internet based application as a measurement option. Understanding these predictors is critical in order to ensure the success of PrEP as a prevention intervention.

308 Open Pilot Trial of Striving towards Empowerment and Medication Adherence (STEP-AD): A Tailored Intervention for Black Women with HIV

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Background: In the US, Black women living with HIV (BWLWH) face numerous psychosocial factors (e.g. trauma, racism, HIV-related discrimination and gender role expectations) that are associated with low medication adherence and negative HIV health outcomes. This study presents an open pilot trial of an intervention to improve medication adherence among BWLWH.

Methods: Striving Towards EmPowerment and Medication Adherence (STEP-AD) is a 10-session intervention aimed at improving medication adherence for BWLWH by combining evidence-based cognitive behavioral strategies for trauma symptom reduction, strategies for coping with racial and HIV-related discrimination, gender empowerment, problem solving techniques for medication adherence, and resilient coping. Five BWLWH were enrolled to evaluate the preliminary acceptability/feasibility of the intervention. Measures (e.g. capturing trauma symptoms) were given at baseline and re-administered at 3- and 6- month follow-up visits. Participants were instructed to use the Wisepill adherence monitor from baseline through the follow-up periods.

Results: Participants' ages ranged from 38 to 58. At baseline all participants had either an ART adherence level of < 80% or a detectable viral load within the past 6 months. Adherence (A) and trauma symptoms (T) for cases (C) at baseline and 3- and 6- month follow-up visits were: C1 – A 71, 100, 100, T 73, 2, 6; C2 – A 54, 83, 100, T 68, 11, 14; C3 – A reluctant to start ART, not on ART, started ART, T 26, 0, 2; C4 – A 100, 100, 100, T 17, 26, 2; C5 – A 84, 86, 93, T 73, 55, 44.

Conclusion: Findings support the preliminary feasibility/acceptability of the intervention. Areas for refinement in the intervention and ongoing issues/barriers (e.g. new trauma, housing) in the lives of the women were also noted. A randomized control trial comparing STEP-AD to a control condition is needed to evaluate the efficacy of STEP-AD.

309 Supporting the HIV Workforce in Removing Barriers to Care along the HIV Prevention and Care Continuum –The Linkage to Care Tool

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Background: Data on the HIV care continuum shows that improvements must be made in linking and retaining persons living with HIV (PLWH) in care and connecting persons at high-risk for HIV to pre-exposure prophylaxis (PrEP) and other essential support services. The literature implies that there are biomedical, environmental, and psychosocial barriers that may hinder a person's progression along the continuum of HIV care towards viral suppression. Persons who are assessed as "high-risk" HIV-negative must also be linked to PrEP and other primary care and support services to maintain their status.

Methods: The online Linkage to Care (LTC) tool was developed by two national entities recognized for their work in providing training and technical assistance to the HIV workforce. A literature review and consultations with key informants and stakeholders informed the development of the tool. Eight (8) community-based organizations spanning the U.S and Puerto Rico participated in an initial pilot of the tool. Representatives from the Centers for Disease Control- Division of HIV/AIDS Prevention, Capacity Building Branch (CDC-DHAP-CBB) also reviewed the tool. These entities provided feedback to enhance the content and user-friendliness of the tool for use by the HIV workforce.

Results: The LTC tool has been cleared by CDC-DHAP-CBB for development and deployment. The tool is comprised of 3 major parts: 1) Rapid Linkage to HIV Treatment, 2) Client Concerns for PLWH, 3) Client Concerns for PWHRN, and includes a flowchart that directs providers to take certain actions based on the clients' status and readiness for care. The tool encourages providers to elicit information from clients to identify potential barriers to care and guides providers on the steps that should be taken to immediately address client concerns. A strengths-based framework underpins this tool, which helps to engender trust between the provider and client, and facilitates linkage to care and retention efforts.

Conclusion: Improvements in the uptake of PrEP and HIV medical care, and retention in care, is highly dependent on skilled clinicians and HIV service providers. Tools such as the LTC tool can assist providers with improving impact and scaling-up efforts.

310 Progress towards the Achievement of the Kenya Fast-Track Plan to End HIV Among Adolescents and Young People

Jacqueline Dache (presenting)

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Background: Following are HIV dynamics among adolescents and young people (15-24 years old) in 2015 in Kenya:

- 97 acquired HIV infection every single day
- Two thirds of the newly infected were girls and young women
- Account for 51% of all new adult HIV infections
- 268,588 are living with HIV
- 3,853 HIV related deaths occurred

Methods: The Kenya Fast-track plan to end HIV and AIDS among adolescents and young people, launched by H.E the President of Kenya in September 2015, resulted from a consultative process with different ministries and agencies of the national government, county government, development and implementing partners, civil society, private sector and adolescents and young people living with HIV. The Fast-track plan is a two-year implementation plan outlining a range of multi-sectoral initiatives for the achievement of the following objectives:

1. Reduction of new infections among adolescents and young people by 40%
2. Reduction of AIDS related deaths among adolescents and young people by 20%
3. Reduction of stigma and discrimination among adolescents and young people by 25%

Results: A multi-sectoral National Steering Committee for Adolescents and Young people was established to provide oversight and report progress. Ministry of Health initiatives include: A communication campaign on various platforms to address HIV stigma and discrimination; generation of national and county level age and sex disaggregated HIV estimates; age of consent for testing reduced to 15 years; ,revision of Ministry of Health data collection tools to capture adolescents age and sex disaggregated data; Ministry of Health and Ministry of Education joint resolutions targeting learners in schools; Capacity building and institutional strengthening of adolescents and young people network living with HIV and development of a framework for quality and ethical implementation of behavioral, operational and biomedical research with adolescents in Kenya.

Conclusion: Intensified cross-sectoral effort by all key stakeholders is necessary for the achievement of the Fast Track plan objectives by the end of 2017.

311 Provider Perceptions of Using Mass Spectrometry Imaging of Hair to Manage Antiretroviral Adherence: A Formative Sub-Study for the Hair Adherence Monitoring in Real-time (HAIR) Project

Sruthi Cherkur (presenting)[1], Carol Golin[1], Jessica Carda-Auten[1], Allison Pack[1], Claire Farel[1], Elias Rosen[1], Monica Gandhi[2], Heather Prince[1], Katherine Barley[1], Angela Kashuba[1]

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Background: Successful treatment of HIV depends upon patient adherence to antiretroviral (ARV) therapy. Yet, for some patients, achieving life-long adherence is challenging and available adherence supports are insufficient. The Hair Adherence monitoring In Real-time (HAIR) Project aims to address this gap using infra-red (IR) matrix-assisted laser desorption electrospray ionization (MALDESI) technology for mass spectrometry imaging (MSI) to quantify daily ARV concentrations using 10-20 strands of a patient's hair and a two-hour turnaround time. Resulting longitudinal data, representing days to weeks of behavior, will be used to enhance patient-provider ARV adherence counseling and could potentially improve adherence. This formative sub-study assessed HIV providers' perceived acceptability of the test and feasibility of integrating it into clinical practice.

Methods: Qualitative interviews were conducted with providers at the UNC Infectious Diseases Clinic (n=29). Semi-structured interview guides were used to explore providers' perceptions of using IR-MALDESI MSI to clinically monitor ARV adherence, perceived factors affecting clinical integration, and reactions to sample graphs depicting test results. Interviews were audio-recorded, transcribed, and uploaded to Dedoose. Analysts created memos to develop the codebook. Two analysts coded each transcript independently and reconciled differences by consensus. Code reports were reviewed to identify themes.

Results: Providers expressed general enthusiasm and acceptability of IR-MALDESI MSI to clinically monitor ARV adherence. Providers noted its potential utility for identifying behavioral factors affecting non-adherence during counseling. Graphs were considered valuable visual reinforcement tools for medication management discussions with patients. Most providers believed this test could enhance counseling of patients experiencing challenges to consistent adherence. Providers felt that integrating results into patient visits was highly feasible. However, some perceived the two-hour turnaround time as a barrier.

Conclusion: Overall, preliminary results of this sub-study indicate the IR MALDESI MSI may offer an acceptable and feasible approach to enhance provider counseling of patients about achieving sustained ARV adherence.

312 Factors Associated with Delayed HIV-Testing among a Sample of Newly Diagnosed HIV+ South Africans: Findings from 'Pathways to Engagement in HIV Care'

Folake Eniola (presenting) [1], Shema Tariq[2], Makandwe Nyirenda[3], Elizabeth Kelvin[4],Theresa Exner[1], Anisha Gandhi[1], Cheng-Shiun Leu[1], Naomi Lince-Deroche[5], Joanne Mantell[1], Susie Hoffman[1]

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Background: Early diagnosis is important for improving the health and longevity of HIV-positive individuals and achieving UNAIDS 90-90-90 targets. In South Africa, late diagnosis is a substantial problem (~34% in one study), especially among men, despite efforts to increase routine testing. Among newly-diagnosed HIV-positive adults in SA, we explored factors associated with having delayed testing until symptomatic.

Methods: Attendees at three public-sector testing clinics in the Durban area, were interviewed prior to testing in 2010-2012. Delayed testing was defined as report of at least one WHO-defined stage 3/4 HIV-associated symptom or suspicion of being HIV-positive due to symptoms. We examined associations between delayed testing and demographic characteristics, clinic travel time, psychological distress (Kessler-10), fatalism, HIV denial, and social-cognitive factors (peer norms and outcome expectancies around linkage to care) using logistic regression conditioning on recruitment clinic.

Results: Of those who subsequently tested HIV-positive (N=797), two-thirds were women; median age was 29 years (IQR: 25-35); 72% had not completed high school; 68% were unemployed, and 44% were food insecure. Over half (52%) delayed testing until symptomatic. Completing high school or higher (28%) was associated with lower odds of delayed testing (pOR=0.52; 95%CI: 0.35-0.75), as was previous testing (38%) OR=0.76; 95%CI: 0.57-1.01). Men (pOR=0.91; 95%CI: 0.67-1.23) and people younger than 29 (23%) (pOR=0.94; 95%CI: 0.62-1.42) did not have higher odds of delayed testing.

Conclusions: Despite a 2009-2010 national testing campaign, 52% of newly-diagnosed individuals delayed testing until symptomatic. Psychological distress and fatalism were associated with delayed testing, and education was protective. Interventions should continue to emphasize the benefits of routine HIV testing.

313 Longitudinal Effects of Psychosocial Syndemics on ART Non-Adherence in HIV-Positive MSM in Care

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Background: Syndemics, or co-occurring psychosocial problems, contribute to HIV acquisition and transmission risk behavior, particularly among men who have sex with men (MSM). This has been understudied in HIV-positive MSM, compared to those at risk, and most of the prior work has been cross-sectional. However, it may be important to address syndemics to optimize the HIV care continuum for HIV-positive MSM.

Methods: The study was a one-year (5 time-points) longitudinal analysis of the cumulative effects of syndemics on antiretroviral (ART) non-adherence in 390 HIV-positive MSM who took part in one of two secondary prevention trials. Participants were assessed for the following syndemic conditions: childhood sexual abuse (baseline prevalence 44.9%), post-traumatic stress disorder (27.4%), anxiety disorders (31.3%), depression (13.6%), alcohol abuse (20.3%), and polysubstance or stimulant use (37.7%). Participants completed the ACTG self-report measure of ART adherence at each visit. This yielded, via factor analysis, one continuous non-adherence factor score (ranging from -0.56 to 5.06). We employed multilevel modeling using SAS (PROC MIXED) with the number of syndemics a participant met criteria for at each time point as a longitudinal predictor for ART non-adherence over time. Control variables included time, intervention assignment, and their interaction.

Results: At baseline, participants reported zero (20%), one (30.8%), two (21.3%), three (15.1%), or four or more (12.8%) syndemic conditions. The number of syndemic conditions was a significant longitudinal predictor of non-adherence such that each additional syndemic condition endorsed was associated with a 0.12 increase in non-adherence factor scores (95% C.I.=0.06, 0.18, $p<.0001$) over time.

Conclusions: Among individuals in this sample, HIV-positive MSM, an increased quantity of psychosocial problems was associated with increased self-reported difficulty adhering to ART. To fully optimize the HIV care continuum, interventions will need to address the issue of co-occurring psychosocial problems hindering treatment uptake and adherence.

316 The Impact of PrEP Use on STD Acquisition in Los Angeles County STD Clinics

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Background: Pre-Exposure Prophylaxis (PrEP) is an important biomedical HIV prevention strategy. Previous studies have suggested an increased risk of STD acquisition among PrEP users compared to non-users. However, due to enhanced STD screening and inherent differences in risk behaviors, STD diagnoses may be artificially inflated among PrEP users. This analysis examines STD acquisition among clients screened for PrEP in 3 STD clinics in Los Angeles County.

Methods: Clinic data for PrEP clients were matched to STD surveillance records. We compared the proportion of PrEP clients diagnosed with syphilis, gonorrhea, or chlamydia in the 4.5 months before and after screening for PrEP using chi-square tests. STD diagnoses can prompt PrEP referrals or occur during PrEP intake visits, therefore STD diagnoses that occurred within +/- 14 days of PrEP initiation were excluded from this analysis.

Results: From October 2015 to August 2016, 167 clients initiated PrEP (95.8% cis-male; 48.8% Latino; median age 30 years (range 17-69)) at 3 county STD clinics. In the 4.5 months after initiating PrEP, 52.7% (n=88) of clients were retained at the STD clinics, 13.2% (n=22) were referred for long-term PrEP management elsewhere, and 34.1% were either lost to follow-up (LTF; n=54) or discontinued PrEP (n=3). Compared to the 4.5 months prior to PrEP initiation, there was a significant decrease in STD diagnoses after PrEP initiation among retained clients (29.6% to 23.9%, p=0.04) and a non-significant trend for decreasing STDs among those who were referred and LTF (13.6% to 4.6% and 20.4% to 18.5%, respectively).

Discussion: Although the data are preliminary, this sample of clients at high-risk for STD acquisition demonstrated no evidence of increased STD acquisition during the 4.5 months following PrEP initiation. Understanding the impact of PrEP use on STD risk can help inform future PrEP implementation efforts, reassure clinicians concerned about risk compensation, and reduce stigma around PrEP use.

319 Improving Viral Load Testing and Uptake in a Rural High Patient Volume Health Facility in Rakai, Uganda

James Batte (presenting), Godfrey Kigozi, Deogratius Ssenkumba, James Ludigo, Eunice Naluboobi, Fred Nalugoda, Andrew Ruwangura, Abisagi Nampijja, Joseph Bajenja, Gertrude Nakigozi

Rakai Health Sciences Program, Rakai, Uganda

Background: Viral load (VL) testing is the gold standard for detecting failure to antiretroviral therapy (ART). Despite availability of free of cost VL testing, uptake among high patient volume rural health facilities is still low. An intervention to increase VL uptake was piloted in a high patient volume health facility in Rakai district, Uganda and the outcome evaluated.

Method: We reviewed VL testing roll out at the Rakai Health Sciences Program HIV clinic. 1324 files of patients that had been on ART for at least 6 months, hence eligible for a 6 month VL test were identified. To promote VL scale up, HIV care providers and patients on ART were sensitized and educated about the importance of viral load testing. As a reminder for both providers and patients, a visible sticker was placed on files that lacked a 6 month VL result. On the sticker was indicated the VL bleeding month as per the MOH guideline for monitoring patients on ART. Patients were empowered to request for a VL test during the month indicated on the sticker on their clinic file. The stickers also served to remind the health worker to draw VL blood at the respective patient visit. Also, information about VL was regularly provided during patient Health education sessions. The files were analyzed for presence or absence of VL result at baseline and follow up (6 months after VL sticker placement).

Results: At baseline, out of the 1324 files, 279 (21.1%) had a VL result. Six months after the intervention, an additional 972 files had a VL result. The intervention significantly increased VL testing from 21% to 94.5%; $p<0.0001$.

Conclusion: Provider and patient education coupled with placing visible sticker indicating VL month on patient files can significantly increase uptake of VL testing.

320 Scaling Up Voluntary Medical Male Circumcision Services with Tetanus Toxoid Vaccination at Workplaces in Uganda

Melanie Lopez (presenting), Fredrick Kasajja, Erasmus Tanga, Bright Wandera, Gloria Ekpo

World Vision, Federal Way, WA, USA

Background: The Ugandan Ministry of Health has endorsed voluntary medical male circumcision (VMMC) as an HIV prevention strategy in Uganda where HIV prevalence is 7.3% and the VMMC rate is approximately 35% for eligible men. The USAID/Uganda HIV/Health Initiatives in Workplaces Activity (HIWA) is designed to scale up comprehensive HIV and AIDS services, including VMMC, for a healthy work force in Uganda. Receiving two doses of Tetanus Toxoid (TT) vaccine prior to circumcision is required per VMMC protocols.

Method: To increase availability of VMMC services, USAID/HIWA supported nine Health Facilities in eight districts, and trained 12 health workers to offer a combination of HIV prevention strategies including VMMC in FY16. The project utilized both static and outreach services targeting men at workplaces for VMMC services. VMMC services included: HIV Testing and Counseling, STI screening and treatment, Tetanus Toxoid 1 and 2 (TT1/TT2) vaccinations, and health education. Mobilization for the services was through use of peers at the workplaces, health facilities, and Mobile-health (M-health) platforms.

Results: From Oct 2015 – Sept 2016, 53 service providers were oriented in the new VMMC protocols and TT vaccination. USAID/HIWA provided VMMC services to 9,476 males with an overall TT2 return rate at the supported health facilities of 79.8% (7866 TT2 out of 9857 TT1). Return rate for the TT2 affected scale up of VMMC services. A TT Register was developed to document men reached with health education, those whom received TT1 and returned for TT2 vaccinations. It is important to harmonize TT2 visits with circumcision visits.

Conclusion: To improve return rates for TT2 vaccinations, various inventions will need to be strengthened: follow-up using interpersonal communication (peer to peer), phone reminders through calls, and SMS through M-health platforms. Reminders between TT1 and TT2 are key. VMMC outreaches/campaigns continue to provide a platform for comprehensive HIV/health services for greater beneficiary reach.

321 TLC-IDU in Kenya: Linkage to Care Data

John Lizcano (presenting)[1], Charles Cleland[2], Helgar Musyoki[3], Peter Cherutich[3], Ann Kurth[1]

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Background: Prior to test and start, a point-of-care (POC)-CD4-cell-count-assay has been recommended to reduce the time between HIV infection knowledge and seeking clinical relevant HIV care, including antiretroviral therapy (ART). An accurate CD4-count still is needed for clinical staging, and monitoring treatment of HIV+ patients, and in many countries, still used for an ART threshold. Conventional CD4 testing requires expensive laboratory infrastructure and highly skilled human resources. Therefore, the TLC-IDU Study used POC-CD4 to determine eligibility for ART initiation, as per Government-of-Kenya guidelines prior to 2017.

Methods: We used the PIMA-CD4-POC assay for people who inject drugs (PWID) with HIV infection, and assigned a peer-case-manager (PCM) to those with CD4 <350/μL (prior to change of guidelines in 2014) and <500/μL (2014-2016) to support linkage-to-care and initiation of ART with adherence. Both PCMs and PWID received a small conditional cash transfer for PWID adherence to HIV care visits. Successful linkage to care was indicated by the first visit to the comprehensive care clinic after HIV testing.

Results: During the study, 245 participants were eligible for ART initiation and the PCM intervention based on CD4. 232 (94.7%) were successfully linked to care. 88.4% (n=205) of the participants were linked within 10 days of HIV testing. The median number of days to linkage was 2, and days to linkage ranged from 0 to 89 days.

Conclusions: POC-CD4 was helpful in terms of timely ART-initiation. Under new Kenyan guidelines, everyone should initiate ART right after diagnosis of HIV infection, regardless of CD4-count. PCM was effective in linking clinically eligible PWID to ART at participating HIV clinics, where the study helped create PWID-specific services. PCM could be useful under the new guidelines for disease stage determination (and client motivation), and timely linkage to care of all PWID newly diagnosed with HIV infection.

322 Targeted HIV Counseling and Testing Yield among Key Populations Using an Expert Peer Approach in Rakai, Uganda

James Batte (presenting), Gertrude Nakigozi, Fred Nalugoda, James Ludigo, Deogratius Ssenkumba, Eunice Naluboobi, John Bosco Mulenzi, Abisagi Nampijja, Daphine Awino, Godfrey Kigozi

Rakai Health Sciences Program, Rakai, Uganda

Background: To assess HIV counseling and Testing (HCT) yield among clients identified and escorted to test for HIV at a rural HIV clinic by an expert HIV+ peer client.

Method: Rakai Health Sciences Program (RHSP) supports provision of HIV prevention, care and treatment services in Rakai district, Uganda. In an effort to promote the first 90 (HTC), RHSP supported the roll out of community-facility linkages for HTC through use of HIV positive expert peers. An expert peer operating in a high-risk fishing community in the district, provided sensitization and offered to escort clients to the clinic for HIV testing. Clients were tested for HIV and TB using rapid HIV test.

Results: Between February and December 2016, a total of 26 clients were escorted for HTC, 19 tested positive for HIV (73.1% yield) and linked to HIV care and treatment.

Conclusion: In high risk population communities, use of an influential expert peer within the community to mobilize and escort clients for HTC increased positive yield.

323 Using Mobile Health Mediums and Social Media to Improve Linkages to ART Services and ART Adherence among Work Force Employees in Uganda

Melanie Lopez (presenting), Erasmus Tanga, Bright Wandera, Gloria Ekpo

World Vision, Federal Way, WA, USA

Background: In Uganda, the prevalence of HIV is 7.3%. The USAID/Uganda HIV/Health Initiatives in Workplaces Activity (HIWA) is designed to support scale up of comprehensive HIV and AIDS services for a healthy work force in Uganda. To contribute towards controlling the HIV epidemic, HIV Testing Services (HTS), along with referrals and linkages, are pivotal in the achievement of the first two 90:90 UNAIDS targets. USAID/HIWA is using mobile technology and social media outlets to assist referrals, linking patients to care, and health education.

Method: USAID/HIWA prioritized referral and linkage of newly diagnosed HIV positive clients into care using Mobile-health (M-health) platforms by trained linkage facilitators. USAID/HIWA established a toll-free Call Center to support the 90-90-90 approach to link HIV positive clients to ART services. At the time of testing, HIV positive clients were given the opportunity to provide their mobile phone number for continued HIV engagement and mobile-based services, such as locations to nearest health facilities, ART availability, and appointment and drug adherence reminders. Regarding adherence to ART, HIV positive clients received routine calls and reminders that were accessed via voice calls, SMS, Facebook Messenger, and WhatsApp.

Results: In FY16, HIWA tested 41,653 individuals for HIV which resulted in 9.41% (1,392) new positives. The Call Center received 3126 incoming calls with 808 follow-up outgoing calls. There was a significant improvement in clients that were linked into care from 46.3% in 2015 to 96.2% in 2016. Outgoing calls aimed to resolve issues negatively affecting behavior towards ART continuity, check on general health of ART clients, availability of appropriate medicines, quality of services received at health facilities, and adherence to treatment.

Conclusion: Continue strengthening the use of mobile technology, social media, and the Call Center as a tool to improve HIV/AIDS testing, care and treatment adherence, and to promote healthy behaviors for PLHIV.

324 The Effectiveness of Financial Incentives in Achieving Viral Load Suppression among Socially Vulnerable People with HIV

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Background: We examined the effectiveness of the Viral Load Suppression Intervention (VLSI) which sought to achieve viral suppression by increasing antiretroviral (ARV) adherence in a sample of HIV-positive participants with a high prevalence of homelessness, substance use and mental illness. The VLSI added financial incentives ($100 gift cards for suppressed viral loads) to existing psychosocial and medical services in a large agency in New York City.

Methods: Utilizing a repeated measures pre-post design, 502 participants were followed for two years before and after enrollment in VLSI. Viral loads were collected every three months. Multiple pre-intervention time-points over an extended time-period established a stable baseline of treatment-as-usual. Viral load suppression was measured by the proportion of times with undetectable viral loads (≤200 copies/ml). An intent-to-treat analysis was conducted utilizing ANOVA tests and logistic regression models.

Results: 85% of the sample was virally suppressed at 24 months, compared to 66% at enrollment ($p<.0001$). On average, the mean proportion of suppressed time points for participants increased from 67% to 82% pre- to post-enrollment, while the proportion of participants who were suppressed at all time-points increased from 39 to 62% pre- to post-enrollment ($p <.0001$ for both). Being African American and homeless increased the risk of being detectable immediately before enrollment, but were not associated with outcomes post-enrollment. Moreover, African Americans (AOR=1.88, 95% CI=1.06, 3.31) and substance users (AOR=1.87, 95% CI=1.07, 3.25) were almost twice as likely as their counterparts to transition from being detectable to undetectable, pre- to post-enrollment.

Conclusions: Financial incentives added to existing services significantly improved ARV adherence and time spent virally suppressed in a population of socially vulnerable people with HIV. Disparities in suppression at baseline associated with markers of social vulnerability disappeared post-enrollment, indicating that marginalized clients benefitted equally or more from the intervention than their counterparts.

325 Validation of Sputum Microscopy against Real-Time PCR Using GeneXpert for Diagnosis of Tuberculosis in Rakai, Uganda

James Batte (presenting)

Rakai Health Sciences Program, Rakai, Uganda

Background: Patients infected with HIV have a higher likelihood of having pulmonary Tuberculosis (TB) with a negative smear and emergent resistance to rifampicin. To optimize identification of TB and Rifampicin resistance, the Ugandan Ministry of Health (MoH) recommends microscopic sputum exam and real-time PCR using GeneXpert for all presumptive TB among HIV-positive patients. Since January 2015, the MoH-recommended TB diagnosis algorithm has been used by Kalisizo hospital, Rakai district, using GeneXpert services provided by the Rakai Health Sciences Program.

Methods: We examined data on 376 HIV-positive patients, who provided sputum samples for both microscopy and GeneXpert testing, to validate microscopy against GeneXpert. Below is a 2X2 table showing results based on GeneXpert against results from microscopy. Using GeneXpert as gold standard, we calculated the sensitivity, specificity, positive predictive (PPV) and Negative predictive values (NPV) as well as corresponding binomial exact 95% confidence intervals (95% CI).

Results: A total of 62 (16.5%) patients tested positive for TB based on GeneXpert and 33 (8.9%) tested positive based on microscopy. The sensitivity of microscopy was 53% (95% CI=40-66%), Specificity and PPV were 100% and the NPV was 92% (88-94%).

Conclusion: Microscopy (ZN) missed diagnosing nearly half of HIV-TB co-infected patients in this setting and 8 percent of those who tested negative microscopically were truly positive for TB. Rapid scale-up of GeneXpert technology in Uganda and similar settings in sub-Saharan Africa is urgently needed to maximize diagnosis of TB among HIV-positive persons.

Validation of TB Sputum Microscopy Against GeneXpert Real-time PCR

		GeneXpert		
		Positive	Negative	**Total**
Sputum Microscopy	Positive	33	0	**33**
	Negative	29	314	**343**
	Total	**62**	**314**	**376**

326 "We Just Can't Keep Them in Care": Socio-Structural Determinants of Engagement and Retention in Care among South African Youth

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Background: Adolescents living with HIV/AIDS (ALWHA) who are not linked to, engaged and retained in HIV care contribute disproportionately to ongoing HIV transmission. Given their unique challenges, it is critical that we identify the socio-structural determinants of engagement and retention in care; gain a better understanding of the influence of mode of infection on treatment adherence and caregiver support; and promote strategies that engage and empower the larger community to support ALWHA and take ownership of reducing HIV rates within their own communities.

Methods: Participants included 59 stakeholders (n=20), ALWHA (n=20), and their caregivers (n=19) from the Western Cape in South Africa. Interviews were digitally recorded, transcribed verbatim, verified by a research team member, imported into a qualitative software program and analyzed inductively using a qualitative content analytic approach.

Results: Several key social determinants of engagement and retention in HIV care among South African youth were consistent with the following themes: Concerns regarding Stigma (both internal and external); Degree of family support; Poor clinic experiences; Mental Health; Complexity of treatment regimen; Transportation; Food insecurity; and Denial regarding HIV status.

Conclusions: With mounting evidence showing that HIV knowledge is insufficient to prevent associated risk behaviors; and that individual-level interventions have not effectively curtailed the tide of the epidemic, there is a strong need to understand and identify factors that underlie socio-structural determinants of HIV outcomes in order to design effective and sustainable interventions. Such interventions will call for novel and creative approaches to engaging communities, stakeholders, and governing bodies, particularly in resource-limited settings. The development of a new and innovative intervention that will mobilize ALWHAs' social networks to improve engagement and retention in HIV care will also be discussed.

328 Testing and Linkage to Care for Injecting Drug Users (TLC-IDU) in Kenya: A Baseline Assessment in Western Region

John Lizcano (presenting)[1], Charles Cleland[2], Helgar Musyoki[3], Peter Cherutich[3], Ann Kurth[1]

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Background: HIV-infections in sub-Saharan-Africa increasingly occur among people-who-inject-drugs (PWID). The World-Health-Organization (WHO) recommends antiretroviral-therapy (ART) to enhance viral-suppression among persons at high-risk of transmission including PWID. We present data from an implementation-science-study of a baseline-assessment in the Western-region in Kenya among PWID.

Methods: We used respondent-driven-sampling (RDS) to reach PWID for HIV-1 and Hepatitis-C virus (HCV) prevalence and viral-load-determination, using established procedures from the parent TLC-IDU study done in Nairobi and Coast. In western-Kenya we collected study-data in a six-month-period in PWID-service-sites, including behavioral-data collected using computer-tablets, rapid-HIV-and-HCV-testing, POC-CD4-determination and referral to HIV-clinics for HIV-positives for follow-up and early-ART-initiation for those with CD4

Results: 655 have been screened with 649 found eligible (99.1%). Most eligible participants are male (97.1%). Median-age is 30 years. Median-age at first-injection is 26 years. Median-number of injections per day is 2. Use of marijuana is common (42.6%). 24.3% had vaginal or anal sex without a condom in the past 12 months. Most men are circumcised (89.3%). 4.3% (n=28) are HIV-positive. 80% of those with HIV-infection reported having been prescribed anti-HIV-medication. 10.7% of those with HIV-infection were newly diagnosed by our study. 0.5% (n=3) are HCV-reactive/PCR-confirmed. 1 of those screened (0.2%) participated in the study in an earlier survey-period in Nairobi.

Conclusions: Current Kenyan-guidelines have facilitated access to ART among PWID. The combination of RDS and rapid-HIV-testing has been an effective strategy for finding PWID with HIV-and-HCV-infection in the Western-region of Kenya, including those not previously diagnosed. POC-CD4 was helpful in terms of early-ART-initiation for those who are HIV-positive; under the new-guidelines everyone should initiate ART right after testing HIV-positive regardless of CD4-count. Prevalence of HCV among PWIDs appears to be still low in the western-Kenya-region, presenting an important opportunity to avoid further HCV- (and HIV-) transmission.

330 Reaching the Most Vulnerable Girls in the Zambezia Province of Mozambique through the DREAMS (Determined, Resilient, Empowered, AIDS-Free, Mentored, and Safe) Initiative

Melanie Lopez (presenting), Rudorwashe Primrose Karuma, Adolfo Cambule, Veronique Kollhoff, Christine Beasley, Gloria Ekpo

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Background: DREAMS is an ambitious partnership to reduce HIV infections among adolescent girls and young women (AGYW) in 10 sub-Saharan African countries. Finding and identifying the most vulnerable girls for health and social services in Mozambique is challenging. Many are not attending schools or are forced to work outside of the home. DREAMS aims to contribute to the reduction of HIV incidence among AGYW in a significant way through innovative approaches. Since April 2016, World Vision Mozambique has been identifying AGYW aged 10-24 for enrollment in to Girls Clubs and linking them to health services in Quelimane District, Zambezia Province, Mozambique.

Method: One of the methods used to find vulnerable AGYW was the Girls Roster methodology, a rapid response tool, to increase enrollment of eligible, hard-to-reach girls in Girls Clubs. Though community engagement, to date, the project has established 48 Girls Clubs and enrolled over 2,391 girls for access to "safe spaces" to meet, receive HIV testing and counseling (HTC), links to health services, advocacy, savings and loans groups, and life-skills trainings. Of the 1,853 AGYW tested for HIV, 6% tested positive and all were linked to care services.

Results: Establishing Girls Clubs using Girls Roster methods, Parenting Groups, and creating "safe spaces" increased acceptance of HIV services by AGYW. Using Girls Rosters helps quickly identify girls at risk for immediate enrollment in to Girls Clubs. Peer Leaders and Mentors of the Girls Clubs are positive influencers of girls getting tested for HIV and support in fostering the development of AGYW. Through the influence from Parenting Groups the Gender Based Violence response and advocacy for girls aged 10-14 has also improved.

Conclusion: Continue to use the Girls Roster methodology to identify eligible and vulnerable AGYW in the communities. Intensify HIV services in Girls Clubs to increase acceptability for testing among AGYW and HTC for their partners.

332 Improving Adherence among Indian Men Living with HIV who have Problem Drinking

Melita Vaz[1], Ramchandra Salunkhe[2], Ashok Dhokle[2], Roopal Singh[1], Stephen Schensul[3], Jean Schensul[4], **Sam Kalibala (presenting)**[1]

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Background: Problem drinking in Persons Living with HIV both negatively impacts upon their immunologic function as well as reduces their adherence to ART through forgetting, negative reactions with health providers and reinforced carelessness with personal health care. The Rishta Healthy Living Project attempts to increase adherence and build healthy lifestyles by reducing alcohol use in Men Living with HIV in Mumbai, India.

Methods: The project implements a stacked cross-over quasi-experimental design on 940 men receiving treatment in 5 government ART centres who were identified through the AUDIT C as consuming alcohol. This presentation discusses the effect of a brief group intervention on a sub-sample of 184 men based on early data available. Men who fulfilled the criteria were invited to attend 4 group sessions of 75 minutes each on the day of their medicine pick-up. Sessions were facilitated by trained peer facilitators who guided the men to identify solutions to problem areas in their lives regarding living a healthy life, coping with stress, increasing adherence and decreasing alcohol consumption using solution-focused therapy. The intervention was evaluated through a before-after comparison.

Results: 131 men received all 4 sessions. 53 received between 1 and 3 sessions. Compared with baseline, the participants of the group intervention demonstrated lesser drinking (AUDIT score), improved adherence (ACTG 4-day self-report), lowered stress (Tenshun scale) and lowered depression (CESD). Further, they showed improved knowledge about adherence and the impact of alcohol on their body after the intervention. However, a three-item self-efficacy measure did not show any change after the men participated in the group sessions.

Conclusions: Our findings show that delivering messages to men who drink alcohol despite being on ART can decrease their drinking behaviour and increase their adherence to medication. Further, we demonstrated the feasibility and acceptability of offering group sessions within the government-run ART centres, as well as the importance of incorporating messaging about alcohol within the government treatment protocols.

333 Hepatitis C Virus (HCV) among People who Inject Drugs in Kenya: Novel data

John Lizcano (presenting)[1], Charles Cleland[2], Matthew Akiyama[3], Helgar Musyoki[4], Peter Cherutich[4], Ann Kurth[1]

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Background: Hepatitis-C-virus (HCV) is a global-pandemic affecting an estimated 185 million people. Undetected-and-untreated, chronic-HCV-infection results in liver cirrhosis, hepatocellular-carcinoma, liver failure and death, leading to 700,000-preventable-deaths. The prevalence of HCV in Kenya, where an increasing number of people-who-inject-drugs (PWID) live and are becoming HIV- as well as HCV-infected, has not been fully defined.

Methods: To establish HCV-prevalence among PWID in Nairobi, Western, and Coastal region, Kenya, we used a rapid-anti-HCV-assay (SD Bioline) to test all study-participants (both HIV-infected and uninfected) recruited during the last-wave of the TLC-IDU study. All participants received initial counseling to raise their awareness, and for rapid-test-positives, encourage them to return for confirmatory-tests-results. For those whose rapid-test was reactive, we collected venous-blood for confirmation, using qualitative or quantitative RNA. Those confirmed to be HCV-viremic gave a blood-specimen for genotyping and phylogenetics, and were referred for GoK standard of care.

Results: 2,307 (817 Nairobi, 841 Coast, 649 Western) were tested. 288 (103 Nairobi, 182 Coast, 3 Western) were reactive using rapid-anti-HCV. 284 out of the 288 were confirmed by Qualitative/Quantitative RNA. 19% (n=54) were not viremic, while 81% (n=230) were viremic. 37% (n=30) and 40% (n=58) were HCV-HIV-co-infected respectively in Nairobi and Coast. Out of the 230, 200 contributed blood for genotyping and phylogenetics, 10 were reported dead, 4 were in jail, and 16 couldn't be traced. Results for genotyping and phylogenetics are currently being analyzed by our partner-lab (CDC) in Atlanta, GA.

Conclusion: There is urgency to identifying HCV in Kenya, where very little-data, especially among PWID, are available. Our study has found HCV-reactivity in Western-Kenya (n=3; 0.46%) to be very-low compared to Nairobi (n=103; 12.6%) and Coastal-region (n=182; 21.6%). Most of the study-participants were unaware of their HCV-status. Knowledge of HCV-infection in the context of co-existing HIV-infection also can be helpful to maximize the HCV-treatment approach.

334 Linkage-to-Care Predictors for Existing Diagnosed HIV-Positive Adults in Chicago, IL

Ellen Almirol (presenting), Jessica Schmitt, Rebecca Eavou, Michelle Taylor, Lindsey Wesley-Madgett, Randee Estes, David Pitrak

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Background: Re-identification of known HIV positive people who are not in care has increased with growth of universal HIV screening. Barriers for linkage-to-care (LTC) for those existing diagnoses are not as known as compared to those newly-diagnosed. To understand potential predictors of poor re-engagement among known diagnosed individuals, sociodemographic and clinical factors were examined in Chicago for 5 years.

Methods: Data were collected from 2011-2016 through a routine HIV screening program, conducted by community health centers (CHCs) and hospitals on the south and west sides of Chicago. Individuals eligible for re-engagement are those previously diagnosed and not in care, deceased, or moved outside of the eligible metropolitan area. LTC was defined as attending an outpatient appointment with an HIV provider. Continuous and categorical variables were evaluated using t-tests and $_x2$, respectively. Multiple regression analyses were used to examine the association between potential predictors and LTC.

Results: A total of 289,487 tests were performed and 1330 (0.46%) positive patients were identified. Of those previously diagnosed (n=742), 55.5% were eligible and 57.8% were LTC over 5 years. Characteristics of indicators were stratified by linkage status in Table 1. Improved LTC for existing diagnoses were associated with testing at CHCs (aOR=3.31, 95%CI 2.04-5.47) compared to hospitals and higher CD4 count (aOR=1.002, 95%CI 1.001-1.004), suggesting that patients with lower CD4 count and not linked were further along their disease. In the adjusted models, poor LTC remained associated with increased age (aOR=0.98, 95%CI 0.96-0.99) and Black/African-American race compared to Whites/Caucasian (aOR=0.35, 95%CI 0.13-0.80).

Conclusions: LTC improved markedly based on testing site type and CD4 count, even after controlling for patient characteristics. However, older age and Blacks appear to be disproportionately LTC. These findings encourage further analyses to understand why LTC in this population remains challenging and subsequently, what interventions are needed to address these disparities.

335 Implementation Science Research on HIV Adherence Interventions: If Not Now, When?

Jane Simoni (presenting), Megan Ramaiya, Frances Aunon, Christopher Kemp, Bryan Kutner, Jennifer Velloza, Joyce Yang

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Background: Two decades since the discovery of life -saving antiretroviral therapy (ART) for HIV, adherence remains the primary obstacle to optimal outcomes among those engaged in treatment. Despite the increased availability and affordability of potent once-daily regimens worldwide, the UNAIDS goal of 90% viral suppression eludes us.

Method: We will provide an overview of the body of rigorous research currently being conducted on developing and evaluating interventions to promote ART adherence in both high- and low-resource settings. Multiple, high-quality reviews describe a field ripe with potential strategies for making an impact on adherence. Indeed, the CDC research synthesis project has identified 13 interventions meeting “Good-Evidence” criteria.

Results and Conclusions: New adherence intervention research must push the field towards wider scale-up and implementation. Although emerging strategies to improve ART adherence (e.g., mHealth or those targeting key populations) will still require conventional efficacy testing, approaches with empirical support sitting idly on the shelf are prime targets for broader effectiveness trials with economic components. These should address how best to increase intervention acceptability, monitor fidelity, improve sustainability, facilitate dissemination and achieve equitable service delivery across a range of treatment settings. Rigorous work in this area will require expertise in dissemination and implementation science theories, methods, and analytic approaches, which will be briefly overviewed as it may apply to adherence research. This work is in line with the NIH Division of AIDS Research Priority to “Support implementation science and operations research to enhance dissemination strategies and public health impact of effective interventions.” This next generation of ART adherence research must proceed expeditiously. The average 17-year cycle typical of health research translation is unacceptable, and the 37 million persons living with HIV/AIDS worldwide cannot wait that long.

336 Best Practices Promoting Adherence to ART through Community Based Client-Managed Preventive Care Package in Ethiopia

Gloria Ekpo (presenting), Senait Afework, Stephen Omunyidde

World Vision, Federal Way, WA, USA

Background: Adherence to Antiretroviral treatment (ART) for people living with HIV (PLHIV) is essential to achieving the third UNAIDS 90-90-90 target (90% are adherent and virally suppressed) to control the HIV epidemic. World Vision's USAID funded Preventive Care Package (PCP) program for PLHIV in Ethiopia implemented from 2011-2016 demonstrated best practices on active peer support coupled with PCP kits to promote adherence to ART among PLHIV.

Method: PLHIV in four regions and two cities - Amhara, Oromia, SNNP, Tigray, Addis Ababa and Dire Dawa- in Ethiopia received PCP kit consisting of male condoms, Long Lasting Insecticide Treated Nets (LLITN), water purifier (wuha-agar/PUR), water container, soap, and oral rehydration salt (ORS), de-worming drugs and IEC materials. A Pediatric kit was also introduced and included Albendazole 200mg, Multi-Vitamin and Zinc, but without condoms. PLHIV volunteers working with PLHIV associations supported clients for utilization of PCP kit supplies and reinforced preventive care messages with links to income generation and other services in the continuum of care.

Results: A total of 394,303 PLHIV were served by 1,036 trained community volunteers in 150 PLHIV Associations supported by 3,439 trained health facility workers in 303 health facilities. A total of 28,097 pediatric HIV clients were reached with PCP Kit and services. Adherence to ART was 99.4%, retention in care after 12 months was 95.5% and loss to follow up was 3:0% for PCP clients compared to 97.2%, 92.4% and 4.9% for non-PCP clients respectively. Incidence of diarrheal diseases also decreased in PCP clients.

Conclusion: PLHIV peer support group is an effective model to increase uptake and adherence to ART for PLHIV through behavior change, provision of PCP kit among their peers, and for delivering PLHIV friendly HIV services

338 Evaluating the Impact of Preventive Care Package on ART Adherence among Adult and Pediatric HIV Patients in Ethiopia

Gloria Ekpo (presenting), Senait Afework, Stephen Omunyidde

World Vision, Federal Way, WA, USA

Background: Adherence to Antiretroviral treatment (ART) for people living with HIV (PLHIV) is essential to achieving the third UNAIDS 90-90-90 target ensuring 90% of PLHIV enrolled on ART are adherent and virally suppressed to control the HIV epidemic. World Vision's USAID funded Preventive Care Package (PCP) program for PLHIV in Ethiopia was implemented from 2011-2016 and the program evaluated for impact on ART adherence in select districts in the country.

Methods: In a cohort study, PCP kit consisting of male condoms, Long Lasting Insecticide Treated Nets (LLITN), water purifier (wuha-agar/PUR), water container, soap, and oral rehydration salt (ORS) were distributed to adult and pediatric PLHIV in six health facilities in four regions - Amhara, Oromia, Harari, and Dire Dawa in Ethiopia. The Pediatric kit also included Albendazole 200mg, Multi-Vitamin and Zinc but without condoms. Data was collected on adherence to ARV drugs, adherence to clinic appointment, receipt of PCP service, and other community support over a period of 12 months.

Results: A total of 2,991 and 2,521 adherence encounters (Adherence to ARV drugs and clinic appointment) were measured for 528 PLHIV patients from PCP and non-PCP sites, respectively. Adherence to ARV was 99.4% (2973) at PCP sites and 97.2% (2450) at non-PCP sites. Reasons for missed ARV doses were being away from home (29.2%), being busy (28.1%), forgetfulness (24.7%) and feeling sick (12.4%). Adherence to clinic appointment was 88.7% (2,654) and 85.8% (2,163) among participants from PCP and non-PCP sites, respectively. Reasons for missing appointments were being away from home (35.7%), busy (18.7%), and forgetfulness (12.8%), and possessing extra medicine (37.7%).

Conclusion: A well-coordinated client-managed, PCP distribution and utilization by PLHIV with community support and multiple home visits improved adherence to ART and PCP kits should be part of routine ARV care in low and middle income settings.

339 Using Facility Cascades to End the Epidemic in New York State: Reaching beyond the HIV Clinic

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Background: As New York State (NYS) moves to end the HIV epidemic by 2020, the Department of Health AIDS Institute's 2016 Quality of Care Review requires HIV clinics in hospitals and health centers to submit Organizational HIV Treatment Cascades. Healthcare organizations are asked to identify PLWH who receive care anywhere in their institution as the starting point for their cascade.

Method: Over 100 organizations submit two cascades: one for established patients, and one for newly diagnosed patients. Organizations distinguish between "open" and "active" caseloads, separating those who "touch" their organization (ED; inpatient; mental health or other clinic) from those who are actively engaged in their HIV Clinic. For newly diagnosed patients, linkage to care is measured within three days. Both capture data on ART prescription and viral load suppression. Retention rates have been eliminated. Each organization must detail their data sources and methodology for construction of the cascade. An improvement plan is required that addresses gaps identified.

Results: The Organizational Cascade helps providers develop capacity to effectively collect, analyze, and visualize data about their PLWH population receiving within their facility or network. Challenges requiring resolution include the ability to harness data systems to identify PLWH who are outside the HIV clinic and ascertain whether they are linked to care. Methodologies are adapted to contextual factors within an organization as we show through examples, for three distinct organizations: a multi-site hospital system, a multi-site community based health system, and a federally qualified health center.

Conclusion: Adaptation of traditional quality methods to include organizational cascades are a critical step to integrate population health and clinical quality management and engage clinical provider teams in achieving outcomes in both areas. This innovative method is an important strategy to End the Epidemic and achieve the UNAIDS 90-90-90 targets.

340 Linkage to Care following Home-Based Counseling and Testing: Results from a Qualitative Study in Kenya, with Implications for Test-and-Treat

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Background: Achieving universal antiretroviral treatment (ART) requires identifying and engaging in care all people living with HIV. Home-based counseling and testing (HBCT) can greatly increase testing and enable earlier diagnosis, but linkage to care from testing outside health facilities remains sub-optimal in many settings in sub-Saharan Africa. The objective of this qualitative study was to describe barriers to linkage to care among individuals newly diagnosed via HBCT who had not linked to care to determine potential pathways to advance universal ART in western Kenya.

Methods: In-depth interviews were conducted with 27 adults who were newly diagnosed via HBCT and had not linked to care. HIV counselors working with the Academic Model Providing Access to Healthcare (AMPATH) recruited individuals in Busia County, Kenya, to participate. Interviews were conducted in Swahili and audio-recorded. Recordings were transcribed in full and translated into English for analysis. Data were entered into Nvivo and coded using a codebook derived from thematic content in the data. Coded data were used to develop categories describing barriers. Relationships between barriers were also examined.

Results: Categories describing barriers to linkage included health system factors, the contextual environment (e.g., stigma, poverty), psychosocial challenges (e.g., disclosure), and ART-specific concerns. Perceived need for care was low among many, given their lack of symptoms, healthy lifestyles, competing priorities, and perceived lack of support particularly from partners. While there were fears regarding disclosure and seeking care due to concerns about stigma, many described upholding family and community responsibilities as reasons to seek care and begin ART.

Conclusions: Our findings suggest that interventions designed to bolster universal treatment efforts and preventive care more generally could harness familial and communal obligations as reasons for seeking care to motivate newly diagnosed healthy individuals to overcome structural barriers and engage in HIV care shortly following diagnosis.

341 Using Double-Sampling Methods to Estimate Linkage to HIV Care Individuals Newly Diagnosed through Home-Based Counseling and Testing in Western Kenya

Becky Genberg[1], Joseph Hogan[1], **Yizhen Xu (presenting)[1]**, Samson Ndege[2], Monicah Nyambura[3], Caren Tarus[3], Elyne Rotich[3], Caherine Kafu[3], Juddy Wachira[3], Suzanne Goodrich[4], Paula Braitstein[5]

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Background: Data on linkage to care following HIV diagnosis outside of healthcare facilities or research settings in programs such as home-based counseling and testing (HBCT) in sub-Saharan Africa are limited. The objective of this study was to use double-sampling methods to estimate linkage to care and mortality among adults newly diagnosed via HBCT.

Methods: HBCT was conducted door-to-door from August 2010 to February 2011 in one sub-County of western Kenya by AMPATH (Academic Model Providing Access to Healthcare), the majority HIV care organization in the catchment. A 10% random sample of 1168 newly diagnosed adults ≥18 years who had not linked to care according to two estimation methods (probabilistic and manual matching of identifiers from HCT and AMPATH electronic medical records) as of June 2015 were visited by trained fieldworkers. Data were used to generate a prediction model with multinomial logistic regression to estimate probability of engagement in care and mortality among those whose status could not be ascertained by probabilistic or manual matching to the AMRS.

Results: Of the 120 selected, 57% were female, 56% had a primary school education, and the median age was 33 years. Engagement in care was 15% using probabilistic matching of records, 32% using probabilistic and manual matching methods, and between 65-78% using double-sampling methods, depending on differing assumptions. Mortality estimates from double-sampling methods ranged from 11-17%. Of the 48 selected individuals who reported engaging in care at AMPATH, 33% used different names at enrollment.

Conclusions: In settings without universal national identifiers, linkage to care estimates from community-based HIV testing may be underestimates of engagement in HIV care. Additional data may be required to use data merging methods to generate precise engagement estimates. There is a need for harmonized data systems across health systems and programs in low- and middle-income countries.

342 Patient Perspectives: Preliminary Results from the Formative Sub-Study of the Hair Adherence Monitoring in Real-time (HAIR) Project

Allison Pack (presenting)[1], Carol Golin[1], Jessica Carda-Auten[1], Sruthi Cherkur[1], Claire Farel[1], Elias Rosen[1], Monica Gandhi[2], Heather Prince[1], Katherine Barley[1], Angela Kashuba[1]

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Background: Achieving antiretroviral therapy (ART) adherence and viral suppression is a challenging yet critically important component for optimizing the HIV care continuum. However, existing adherence support tools are inadequate. The HAIR Project seeks to redefine adherence monitoring using infra-red (IR) matrix-assisted laser desorption electrospray ionization (MALDESI) technology for mass spectrometry imaging (MSI). With 10-20 strands of a patient's hair and 2 hours processing time, this technology will reveal daily ART drug concentrations, representing days to weeks of drug ingestion behavior and absorption. Patients' perceptions of this novel technology were explored in this formative sub-study.

Methods: A convenience sample of 30 HIV-positive adult patients attending an academic infectious diseases clinic were interviewed. Patients had to have been on ART for ≥3 months, report having ≥1 centimeter of hair, and fit in one of three viral load strata: 1,000c/mL. Interview guides assessed patients' perceived: 1) acceptability of the new technology for ART adherence monitoring; and 2) reactions to potential data display graphs. Interviews were audio-recorded, transcribed, and uploaded to Dedoose. Memos and a codebook were developed by an analysis team. Each transcript was independently coded by two analysts. Differences were reconciled and code reports used to identify themes.

Results: Nearly all patients were interested in the new technology and suggested they would be willing to and have little difficulty providing a hair sample. Specifically, patients wanted their physicians to see and discuss the results with them, as they thought it would helpful in 1) identifying patterns of adherence lapses and also in 2) monitoring potential drug resistance. Few patients expressed concerns. Potential data display graphs resulted in mixed opinions, although a bar graph was generally preferred over line plots or pictographs.

Conclusions: Preliminary results from this sub-study suggest patients are willing to provide hair samples for clinical ART adherence monitoring.

343 PrEP Stigma and Perceived Disapproval by others may Deter PrEP Uptake among Women

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Background: In the U.S., PrEP uptake has lagged among women, who represent 38% of an estimated 1.2 million PrEP candidates but only 17% of new PrEP users. PrEP stigma has been identified as a key barrier to uptake among MSM but remains largely unexplored among women. The purpose of this study was to assess PrEP stigma and perceptions of others' disapproval of PrEP use and implications of these beliefs for future uptake among women.

Methods: In a 2017 online survey study of Planned Parenthood patients, we recruited 580 heterosexually-active, HIV-negative, PrEP-inexperienced women ages 18-45 through a patient email list. Background information about PrEP was presented at the survey's outset.

Results: When asked to envision what it would be like to take PrEP, many participants anticipated stigmatizing responses from others, including perceptions that they slept around (37%), were HIV-positive (32%), were bad people (14%), or were gay (11%). 29% would feel ashamed to tell others of their PrEP use. A large minority of participants anticipated disapproval by their family (36%), sex partners (34%), and friends (25%). In separate linear regressions adjusting for sociodemographic characteristics, relationship status, perceived HIV risk, and condom use, PrEP stigma and perceived disapproval were both negatively associated with interest in learning more about PrEP [b(SE)=-.17(.07) and -.26(.06)], intentions to use PrEP [b(SE)=-.17(.08) and -.29(.07)], and comfort talking to a provider about PrEP [b(SE)=-.45(.07) and -.41(.06)]. When PrEP stigma and perceived disapproval were considered simultaneously in each model, perceived disapproval was uniquely associated with PrEP interest [b(SE)=-.24(.06)] and intentions [b(SE)=-.28(.07)], and both PrEP stigma and perceived disapproval were uniquely associated with comfort talking to a provider about PrEP [b(SE)=-.36(.07) and -.35(.06); all ps <.05].

Conclusions: Findings highlight the need for positive messaging surrounding PrEP that targets potential PrEP users and their social networks to increase acceptance and ultimate uptake.

344 Improving Adherence and Retention in Care for Positive Adolescents Transitioning from Paediatric to Adult Health Care in South Africa

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Background: The rapid expansion of paediatric HIV treatment has enabled a new generation of HIV-infected children to reach adolescence and adulthood for the first time. As adolescents, this group will face important developmental milestones, including entry into an emotionally charged stage which is often confusing yet fun, a stage charged with unconsolidated questioning of the status quo including taking chronic medication. HIV-infected adolescents, in addition experience treatment fatigue, depression and issues relating to HIV disclosure affecting adherence. While research has focused on psychosocial interventions including education and counselling to improve adherence, interventions on the core socio-structural factors affecting adherence are lacking and need attention.

Methods: We draw on lessons learnt from a health care transition pilot intervention, HlangananiPlus, for youth on antiretroviral therapy (ART). This was an education-based, eight-month pilot intervention comprised of 4 modules and 22 sessions. 33 youth between 14-22 years old were enrolled into weekly sessions.

Results: Overall, the majority of youth (30; 90%) completed the intervention. Of those who completed the programme, 21(63%) were female and 27(84%) attended school. Participants reported high intervention acceptability. Youth valued the opportunity to provide and receive peer support and were keen to maintain the group structure as they move to adult healthcare. Youth also reported that regular interactive sessions created a safe environment in which they felt free to express themselves, motivate each other and to learn about their health. However, we found that adherence to treatment remained a challenge.

Conclusions: while we created a conducive environment for youth to obtain group support, there are core structural and socio-economic barriers, which are central to adherence and retention in care.

345 Using Vending Machines to Distribute Free HIV Self-Test Kits in Two Commercial Sex Venues in the Los Angeles Metro Area

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Background: Commercial sex venues (CSV), bathhouses and sex clubs, have a long history of serving a high-risk population. In these facilities, men can engage in sexual encounters with men and often they participate in high-risk sexual behaviors. Designing prevention interventions specifically for CSVs could be an effective way to increase testing and identify new HIV cases among men visiting these venues.

Methods: In collaboration with AIDS Healthcare Foundation, our team distributed between December 2015 and January 2017 free HIV self-test kits using vending machines located at two CSVs in Los Angeles, California. Test kit dispensing rate was monitored remotely. Patrons receiving a test kit were invited to participate in a 16-item electronic survey regarding their experience and test result. Linkage to care with AHF was offered to HIV positive participants.

Results: Over the 13-month period, 972 kits were dispensed, 18 kits/week. Most test kits were distributed between Friday to Sunday, on Wednesdays and between 10-11 pm and 3-4 am. The survey was completed by 59 patrons (Response rate= 6.3%). Among those who reported that they used the test kit (n=48), 11 (23%) participants reported a first-time reactive HIV result. At the time of the survey, 5 (45%) participants with reactive result reported seeking further testing and linkage to care and three (27%) had initiated treatment. One participant requested linkage-to-care assistance. The startup cost, included the purchase of two vending machines, was $10,000 and the recurring cost (monitoring, test kits, wages) was $29.20 per kit vended.

Conclusion: While survey response was low, our results demonstrate that an intervention using vending machines and HIV self-test kits in CSVs is acceptable by the high-risk target population and can help identify new HIV cases. Distribution patterns may indicate ways to improve current testing interventions. Further evaluation of the costs could demonstrate the applicability of the intervention.

346 Differential Uptake and Misclassification of Uptake of Prevention of Mother-to-Child (PMTCT) Services by Age in Zimbabwe: Increased Risk among Adolescents

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Background: We compared the uptake of PMTCT services (perinatal and HIV-specific) between HIV+ adolescents and older women in a representative, community-based sample in Zimbabwe. We also analyzed viral load to validate self-reported use of antiretroviral treatment (ART).

Methods: Data were from the 2014 survey evaluating Zimbabwe's national PMTCT program. Eligible women (≥16 years old [yo] with infants born 9 -18 months before the survey) were randomly sampled from catchment areas of 157 health facilities. We compared uptake of services and transmission rates among 60 adolescent mothers (< 20 yo) and 1,283 adult mothers (>20 yo) and self-reported ART use among those who were virally suppressed.

Results: Adolescent and adult mothers reported similar uptake of perinatal services: antenatal visits (94% vs. 96%), testing for HIV while pregnant or knowing one's HIV status prior to pregnancy (92% vs. 95%), and delivering in a health facility (92% vs. 86%). Adolescents reported lower uptake of HIV-related services, including ARV treatment for themselves (32% vs. 66%, p <0 .001), their infants (34% vs. 68%, p <0 .001), and early infant diagnosis (49% vs. 71%, p <0 .001). 79% of infected mothers regardless of age were virally suppressed. However, among these, 34% of mothers >20 yo, and 80% of mothers <20 yo did not report ART use. MTCT at 9-18 months was 11.6% among adolescents vs. 6.5% among adult mothers (p=.113).

Conclusion: This study provides compelling evidence that HIV+ pregnant adolescents are less likely to use HIV-related services than adults. This is confounded by higher misclassification of ART use among these younger mothers. Younger mothers also had higher rates of transmission, although sample sizes were too small to detect significant differences. Eliminating infant HIV infection requires that PMTCT programs include interventions tailored to young women and methods for robust and validated assessment of their service up-take.

347 Reducing HIV Risk in an Intervention with Young Leaders in At-Risk Populations in Brazil

Diego Calixto (presenting)

Youth Task Force of UNAIDS Brazil, Brasília, Brazil

Background: Young people are at greater risk of HIV because of the many transitions that converge in this lifetime. In this context, young key populations (YKPs) carry the most disproportionate burdens of HIV and are the most vulnerable, including young men who have sex with men, young transgenders, young people who use drugs and young sex workers. Interventions focused on peer-to-peer dialogue influence the adoption of behavioral changes to reduce the risk of HIV infection in young people. There are gaps related to HIV reduction strategies in young key populations (YKPs) and as a society, it is important to share good projects that support policymakers, donors, service planners, service providers and international organizations working with YKPs.

Methods: Through public selection, we identified YKPs that are considered reliable as leaders among one of the key populations in Brazil - gays and MSM, transgender people, people who use drugs and sex workers. We also include young people living with HIV, considering that it is important that these young people share the experience of living with HIV with other young people at greater risk and vulnerability. These young people acquired skills to influence changes and behavior in other young and undertake activities to multiply information through their community networks and movements. At the end of the intervention, they sent reports with information about the activities carried out in their territories and communities.

Results: 140 young people from the key populations were trained in the project. The proportions of the main populations trained in this intervention were 41.9% of gays and other MSM, 14.5% of people who use drugs, 8% transgender, 6% sex workers and 15% young people living with HIV. It is important to consider that most of the YKPs who signed up to participate in the intervention were gay and other MSM, so almost half of those selected belonged to this population. Few enrollees belonged to the populations of sex workers and transgenders, a fact that influenced the number of people selected these populations. Approximately 70% of selected in this intervention have already developed activities to multiply information and HIV reduction strategies in young key populations (YKPs) in their respective territories and communities, promoting knowledge about combination prevention and changes in practices and Sexual behaviors.

Conclusions: Interventions that enable young people to endorse change can produce or accelerate changes in the behavior and sexual practices of young people to reduce the risk of HIV infection. These interventions have developed a network of multipliers in a successive HIV chain.

348 Expanded Clinic-Based Mental Health Services: Association with HIV Viral Suppression

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Background: The University of Virginia Ryan White HIV Clinic increased clinic-based mental health (MH) services including substance use counseling in 2013. The study objectives are to characterize the changing demographics of the people living with HIV (PLWH) who initiated MH care and to determine MH services' effects on HIV outcomes, specifically engagement in care and HIV viral suppression.

Methods: The cohort included PLWH who received clinic-based MH services 2012-2014. Cohorts A and B initiated MH care before or during 2012 and during 2013-2014 respectively. Demographics were analyzed, and for Cohort B, clinical outcomes (pre/post MH care initiation) were compared.

Results: Compared with Cohort A (n=130), Cohort B (n=182) had almost three times the number of subjects with CD4 counts below 200 (p=0.02). 96% of Cohort A had been prescribed antiretroviral therapy (ART) before MH care initiation compared with 82% of Cohort B (p=0.009). One third of Cohort B had detectable viral loads compared to less than 20% of Cohort A (p=0.01). Cohort B received more substance use diagnoses compared to Cohort A (p=0.005). Pre/post MH care initiation, similar percentages of Cohort B subjects (with at least 1 year of HIV medical care before MH initiation; n=88) had one medical visit in each 6-month period with at least 60 days between visits. For Cohort B, 43% had detectable viral loads before establishing MH care. The viral suppression rates in the year before and after were 57% and 87% respectively ($p<0.001$).

Conclusions: PLWH who gained access to MH services in 2013-2014 had lower CD4 counts. They were more likely to not be prescribed ART and to have a detectable viral load. Importantly, initiation of MH services was associated with increased rates of viral suppression. Increased access to co-located mental health and substance use services helped high risk PLWH achieve optimal HIV outcomes.

349 Data-to-Care (D2C) Pilot Program at an Urban Academic Medical Hospital in Chicago, IL

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Background: Our urban academic medical center serves neighborhoods with the highest incidence of HIV in Chicago. Two thirds of persons living with HIV/AIDS (PLWHA) who are hospitalized or receive care in our Emergency Department (ED) are not followed in our outpatient HIV clinic; either they are in care elsewhere or not retained in care. Our Data-to-Care (D2C) pilot project was launched in July 2016 to identify PLWHA in the ED and inpatient setting and subsequently establish re-engagement in HIV care (RIC) among those who are out of care.

Methods: Our D2C program leverages electronic health records (EHR) as a mechanism to identify PLWHA and support RIC. We created an EHR-based electronic report to identify ED patients and inpatients with HIV. Since not all PLWHA have a positive HIV Ab test recorded in our EHR, the report includes billing codes, past medical history, HIV Ab and viral load, as well as ART prescriptions. For all PLWHA, a social worker determines whether patients are receiving regular HIV care, and if not, provides necessary resources and referrals, schedules HIV follow-up and confirms RIC, defined as an attendance at an HIV care clinical appointment.

Results: We identified 177 PLWHA seen in the ED or hospitalized during the 8-month observation period based on the EHR report. Among eligible patients, 43.1% achieved RIC with an average of 25 days from most recent hospitalization date to clinical ID visit attendance. Of the 36 not linked (mean age 39.3±14.9), 69.1% were male and 69.9% were Black/African-American. Additionally, 17.9% of those not in care were uninsured, identifying the harder to link patients.

Conclusion: Our pilot program demonstrates the potential for identifying PLWHA that are in need for RIC, targeting key populations. We continue to build and develop the EMR infrastructure to integrate re-engagement programming from our routine hospital screening.

350 Using a Screener at Entry into HIV Care to Identify Patient Concerns as Potential Barriers to Retention and Adherence in the Integrating and Engagement Goals upon Entry (iENGAGE) Intervention

K. Rivet Amico (presenting)[1], Riddhi Modi[2], Kiko King[2], Sommer Lee Barnes[3], Sharon Brown[4], Fatoumata Balde[5], Yvonne Jato[5], Jessica Milne[1], Michael Mugavero[2]

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Background: Entry into HIV care can be an overwhelming time of transition and adjustment for new patients. The iENGAGE intervention (a multi-site RCT to evaluate a 4-session skills-building intervention on viral outcomes) is presently under evaluation. All intervention participants have completed first counseling session, which included use of a screener for concerns about challenges to retention, and, as appropriate, to adherence adapted from CDC's Retention in Care (RIC) and Participating and Communicating Together adherence interventions respectively. To better understand the kinds of retention concerns new HIV care patients had, if any, we compiled all first session screeners.

Methods: We characterized first session (~2 weeks after entry in HIV-care) screeners (RIC +adherence) using descriptive statistics.

Results: Of 186 participants, age was 35 years on average (range 19 to 72); 79% cis-male, 19% cis-female and 2% transgender; 64% Black and 26% White. Of 161 patients completing the RIC-screener, the top 3 challenges to returning for future HIV-care visit(s) included feeling angry or resentful (20%), wanting to avoid thinking about HIV (25%), and feeling sad or depressed (26%). Other challenges included concern over not being able to afford costs of getting to care (19%) or being seen by others while accessing HIV care (18%) Concerns about quality of care, respectful treatment by clinic staff, or legal issues were uncommon (<5%). An average of about 3 barriers were reported on the 25-item RIC-screener (range 0 to 13). Of the 64 participants who completed the adherence-screener, the top 3 concerns were worrying about side effects (19%), ability to pay for medications (13%) and about HIV medications interacting with other medications (11%). An average of 1 challenge was reported from the 12-item adherence-screener (range 0-5).

Conclusion: Evaluation of the iENGAGE RIC and adherence screener suggest that patients entering HIV care had retention-concerns that could be articulated, shared, and discussed.

351 Adherence to Antiretroviral Therapy in Young Key Population Living with HIV: A Systematic Review

Diego Calixto (presenting)

Youth Task Force of UNAIDS Brazil, Brasília, Brazil

Background: Young key population (YKP) (15-24) represent over 40% of new HIV infection globally. YKP is sometimes characterized by high-risk sexual behavior and lack of engagement with healthcare services that can affect adherence to antiretroviral therapy (ART).

Methods: Searches included Embase, Medline and PsychINFO databases up to 20 February 2017. Eligible studies defined adequate adherence as at least 85% on self-report or undetectable blood plasma virus levels.

Results: We identified 65 eligible articles reporting data from 55 countries and 10,935 patients. Using a pooled analysis of all eligible studies, 62,3% of the YKP were adherent to therapy. The lowest average ART adherence was in Noth America 53%, Europe 62%, and South America 63%. The higher levels in Africa 84% and Asia 84%.

Conclusions: Review of published literature from Asia and Africa indicate more than 70% of HIV-positive YKP receiving ART are adherent to therapy and lowers rates of adherence were shown in Europe and North America at 50-60%. The global discrepancy is problably multifactorial reflecting differences between focused and generalised epidemics, access to healthcare and funding.

352 Needs Assessment of HIV Testing and Prevention Efforts: Geospatial Analysis of HIV Risk Behaviours among Men of Colour who have Sex with Men (MCSM) in Los Angeles County

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University of California, Los Angeles, CA, USA

Background: New HIV diagnoses in Los Angeles County (LAC; around 2000/year) commonly occur among men of colour who have sex with men (MCSM). Geospatial analyses by LAC's Department of Public Health identified neighbourhoods where HIV cases are most commonly detected/diagnosed. We aimed to supplement this information by pinpointing the residential neighbourhoods of MSM who were classified as 'high risk for potential HIV transmission'.

Methods: Data were used from the ongoing 'mSTUDY'. Being classified as 'high risk for potential transmission' was defined according to the last instance of penetrative sex with a partner of discordant or unknown HIV status. *ArcGIS* software was used to measure the density of participants engaging in HIV transmission risk behaviours in relation to LAC's residential ZIP codes.

Results: Valid ZIP code, HIV risk behaviour and HIV status data were available for 348 participants. Close to half (49%) were HIV-positive at baseline; 32% of this group had a suppressed viral load (<20 copies/mL). The median age of participants was 31 years (range: 18-46). Most (65%) respondents were MCSM (i.e., non-white). Alcohol, cannabis, cigarettes and methamphetamine were the most commonly used substances. At baseline, the last instance of anal sex was classified as 'high risk' for 30% of HIV-positive respondents, compared to 28% of the HIV-negative group. The residential ZIP codes of these participants covered much of LAC; however, some more common neighbourhoods reflected those with a greater number of HIV diagnoses. Some participants reported consistent involvement in high risk HIV transmission behaviours over the follow-up period.

Conclusions: In combination with available government data, such findings can be vital for informing the implementation of timely and targeted education and prevention initiatives and care continuums across LAC. Importantly, our research suggests that testing and prevention efforts (mobile and fixed) need to be enhanced to effectively address the relatively consistent incidence rate of HIV in LAC, particularly among MCSM.

353 A Qualitative Analysis of Anonymous Posts and Comments from the Thrive with Me (TWM) ART Adherence Intervention for HIV-Positive Men who have Sex with Men (MSM)

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Background: The TWM intervention is a private and anonymous, social networking ART adherence intervention for MSM living with HIV. TWM has a shared feed where participants can interact with other participants through posts and comments. In order to gain a better understanding of the topics shared between participants, we coded text extracted from the TWM feed.

Methods: Posts and comments from the feed were extracted and reviewed as full text using Excel. Themes were identified through iterative review and discussion by team members. Main themes were exemplified through review and selection of quotes and quantitized via simple frequencies to characterize percent of total posts/comments (% p/c) that contained a given theme and aggregated by participant (pt) to identify if a given participant had engaged in any of the identified themed discussions (% pts).

Results: A total of 628 posts from 50 different pts were captured in the feed. 94% of these pts posted at least once (mdn 2) and 64% replied to a post (mdn 1). After removing posts from staff who moderate TWM, a total of 236 original posts and 372 comments remained. Sub-themes were identified that were further consolidated into 8 main themes including; providing social support to other members (45% of p/c; 68% of pts); welcome messages and general greetings (20% p/c; 66% of pts); treatment related discussions (17% p/c; 44% of pts); living with HIV (14% p/c; 36% of pts); personal relationships (12% p/c; 28% of pts); adherence issues (12% p/c; 36% of pts); work and finances (6% p/c; 28% of pts) and project related issues (4%; 26% of pts).

Conclusion: Participants' discussions were highly diverse, as would be expected from social media. MSM using the feed were generally very supportive, suggesting that discussion feeds may be a promising vehicle for social connection among MSM living with HIV.

354 Evidence to Action—The Adaptation of Evidence-Based Health Interventions in Diverse Community Practice Settings: Lessons and Recommendations from the Field

Gisele Pemberton (presenting)

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Background: There is a paucity of information in the health professions literature on how best to adapt evidence-based health interventions (EBHIs) designed for a specific population or setting to another population or setting. The lack of existing guidelines or best practices on adaptation presents a significant deficit for clinical and community-based practitioners that must adopt and execute these interventions. We describe the EBHI implementation and adaptation experiences of community based practitioners and the practices and strategies used to facilitate adaptation.

Methods: A non-experimental, descriptive qualitative research design was used to explore the implementation and adaptation of an HIV and substance use prevention EBHI, the Modelo de Intervención Psicomédica (MIP), in diverse community practice settings. MIP is included in the Centers for Disease Control compendium of behavioral interventions and Substance Abuse and Mental Health Services Administration's (SAMHSA) National Registry of Evidence-based Programs and Practices (NREPP). A purposeful sample was employed that consisted of nine MIP program implementers from three community-based organizations (CBOs).

Results: Findings suggest that community-based practitioners understand the concept of adaptation and its necessity to EBHI implementation; however, the lack of guidance on adaptation is perceived as intentional and exclusionary. Barriers to the implementation of EBHIs fall into four major categories: 1) Culture, 2) Capacity, 3) Content, and 4) Community; the adaptations conducted in community practice settings align with these four themes. Technical support needs for adapting EBHIs were identified as Training, Capacity Development and Resource Support.

Conclusion: The adaptation of EBHIs inevitably occurs in applied settings to various degrees and warrants further exploration. We offer a simple framework-- the "adaptation decision tree (ADT)--to support clinicians and community-based practitioners with adaptation and the scale-up and implementation of HIV prevention EBHIs with various population and health settings.

355 PrEP Use and Awareness among Transgender Women in South Florida

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Background: Transgender women in the United Sates are at highest risk for HIV transmission with reported prevalence rates as high as 27.7%. According to the Florida Department of Health, HIV screening in Miami-Dade and Broward counties where many transgender individuals reside, is generally low, with only 289 transgender individuals being tested in 2015. Studies have demonstrated elevated HIV risk among transgender women to be associated with established high-risk sexual behaviors (i.e., substance use, unprotected sexual acts) exacerbated by perceived discrimination, stigma, and other unfavorable socio-economic factors. The study aimed to assess difference in PrEP awareness and PrEP use by race/ethnicity.

Methods: Sixty transgender women recruited from South Florida community based organizations completed a questionnaire, and participated in an educational workshop on HIV and PrEP. Descriptive statistics from the questionnaire's data generated using SPSS 22.0 assessing differences in risk behavior, PrEP awareness, and PrEP use by race/ethnicity.

Results: 15% of the sample self-reported an HIV positive status (Black n=2, Hispanic n=5, other race n=2), and 19% reported an unknown HIV status (Black n=5, Latino n=4, non-Hispanic White (NHW) n=2). Of twenty Black transgender women, 48% were aware of PrEP and 0% used PrEP; of 30 Latino transgender women 77% were aware of PrEP and 13% used PrEP; and of 7 NHW transgender women 71% were aware of PrEP and 14% used PrEP.

Conclusion: Black transgender women had the least awareness and use of PrEP, however HIV incidence was highest among Latino transgender women. Further research is needed to determine factors contributing to the high rate of HIV, and low rates of HIV screening, PreP awareness and PrEP use in this highly stigmatized vulnerable population.

357 Mediset Use Associated with Reduced Stimulant Use, Better Adherence, and Undetectable Viral Load in Pacific Northwest HIV+ Patients

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Background: Adherence remains the major barrier to treatment success among people living with HIV/AIDS (PLWHA) on antiretroviral therapy (ART). Medisets, which organize medications by day and time in separate compartments, are commonly used yet poorly studied strategies for promoting adherence. We examined preferences for using such devices and associations with treatment outcomes.

Methods: We added three items on medication-taking methods, frequency of varying method, and use of reminder systems to an ongoing clinic-based survey of outpatients being seen in a Pacific Northwest HIV primary care clinic.

Results: Our sample of PLWHA (N=129) was 69% White and 87% male, with a mean age of 47 years. Thirty-day adherence assessed via a visual analog scale (VAS) was 100% (24%), 90-99% (58%), and 0-89% (18%). Although mediset users (n=42) did not differ from those using pill rolls and blister packs in age, ethnicity, or education, none reported <90% VAS adherence or use of stimulants (amphetamines or cocaine), and none had detectable VL (all *pp* <0.01). While only 18% of all clinic patients reported VAS adherence <90%, 75% (6/8) of those with detectable VL reported adherence at this level.

Conclusions: In this survey of patients being seen in an HIV clinic, those who opted to use a mediset were much more likely than others to have excellent adherence and suppressed viral loads. This is likely due at least in part to self-selection since none reported stimulant use, which was associated with worse adherence and positive VL. Medisets may promote more consistent adherence or it may be that motivated and organized patients choose the more structured medisets. Whether encouraging mediset use for ART will enhance adherence merits further study.

367 Clinical Durability of Tenofovir Alafenamide (TAF)-Based Regimens in HIV-Suppressed Adults Switching from a Tenofovir Disoproxil Fumarate (TDF)-Based Regimen

Do Tran[1], **Edwin DeJesus (presenting)[2]**, Anthony Mills[3], Michael Wohlfeiler[4], Moti Ramgopal[5], Cynthia Brinson[6], Cynthia Mayer[7], Olayemi Osiyemi[8], Hui Wang[1], Moupali Das[1], Martin Rhee[1], David Piontkowsky[1], Erin Quirk[1]

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Background: TAF, a new prodrug of tenofovir (TFV) has been incorporated into both a fixed dose combination with emtricitabine (FTC/TAF), and single tablet regimens containing a third antiretroviral agent (rilpivirine/FTC/TAF, R/F/TAF or elvitgravir/cobicistat/FTC/TAF, E/C/F/TAF). Treatment guidelines recommend switching antiretroviral therapy (ART) to enhance regimen tolerability and reduce toxicity, while maintaining virologic suppression. Here we present data on TAF virologic durability in four large randomized clinical trials in which virologically suppressed participants switched from TDF to TAF.

Methods: Switches from TDF to TAF-based regimens were studied in 4 clinical trials (Studies 109, 1216, 1160, and 1089). Primary endpoints (HIV-1 RNA <50 c/mL) used FDA Snapshot. Durability of TAF versus TDF was examined; proportions of participants with HIV-1 RNA <50, and ≥50 copies/ml (c/mL) were characterized at all timepoints (Weeks 4-96) using missing=excluded (M=E) criteria. Differences in proportions were analyzed with the Cochran–Mantel–Haenszel test.

Results: Of 3603 enrolled participants, 2046 were switched from TDF to TAF. The switch from TDF to TAF-containing regimens was non-inferior in all studies; and superior in Study 109 ($p<0.05$) at both W48 and W96. Using M=E analysis, durability of TAF vs TDF was observed at all time points examined, with 98-100% of participants on TAF or TDF maintaining HIV-1 RNA <50 c/mL at any given timepoint following the switch to TAF. There were no differences in the proportions on TDF or TAF with virologic failure (confirmed HIV-1 RNA ≥50 copies/mL).

Conclusions: This analysis of 2,046 subjects switched from TDF to TAF demonstrated high and durable efficacy of TAF at all time points examined. There was no notable difference between TAF and TDF in the proportion of subjects with HIV-1 RNA <50 and ≥50 copies/mL. Switching to TAF from TDF-based ART can maintain virologic efficacy while enhancing safety.

Virologic Outcomes at Key Time Points				
Studies	109: E/C/F/TAF (n= 959) vs F/TDF+3RDagent (n=477)	1216: R/F/TAF (n=316) vs R/F/TDF (n=313)	1160: R/F/TAF (n=438) vs efavirenz (EFV) /F/TDF (n=437)	1089: F/TAF (n= 333) vs F/TDF (n=330)
At WK 24				
<50	99.2% vs 99.6%	100.0% vs 98.7%	99.5% vs 99.3%	99.1% vs 99.1%
≥50	0.8% vs 0.4%	0% vs 1.3%	0.5% vs 0.7%	0.9% vs 0.9%
At WK 48				
<50	99.3% vs 99.1%	99.0% vs 100%	99.5% vs 99.3%	100% vs 98.7%
≥50	0.7% vs 0.9%	1% vs 0%	0.5% vs 0.7%	0% vs 1.3%
At WK 96				
<50	98.4% vs 98.4%	N/A	N/A	98.0% vs 99.3%
≥50	1.6% vs 1.6%	N/A	N/A	2.0% vs 0.7%

369 Validation of Sputum Microscopy against Real-Time PCR using GeneXpert for Diagnosis of Tuberculosis in Rakai, Uganda

Gertrude Nakigozi, **Deogratius Ssenkumba (presenting)**, Evelyne Mukalazi, Joseph Ouma, Alice Kisakye, James Batte, Paschal Ssebbowa, John Paul Kasule Jingo, Godfrey Kigozi, Fred Nalugoda, Joseph Kagaayi

Rakai Health Sciences Program, Rakai, Uganda

Background: Patients infected with HIV have a higher likelihood of having pulmonary Tuberculosis (TB) with a negative smear and emergent resistance to Rifampicin. To optimize identification of TB and Rifampicin resistance, the Ugandan Ministry of Health (MoH) recommends microscopic sputum exam and real-time PCR using GeneXpert for all presumptive TB among HIV-positive patients. Since January 2015, the MoH-recommended TB diagnosis algorithm has been used by Kalisizo hospital, Rakai district, using GeneXpert services provided by the Rakai Health Sciences Program.

Methods: We examined data on 376 HIV-positive patients, who provided sputum samples for both microscopy and GeneXpert testing, to validate microscopy against GeneXpert. Below is a 2X2 table showing results based on GeneXpert against results from microscopy. Using GeneXpert as gold standard, we calculated the sensitivity, specificity, positive predictive (PPV) and Negative predictive values (NPV) as well as corresponding binomial exact 95 % confidence intervals (95 % CI).

Results: A total of 62 (16.5 percent) patients tested positive for TB based on GeneXpert and 33 (8.9%) tested positive based on microscopy. The sensitivity of microscopy was 53% (95% CI=40-66%), Specificity and PPV were 100% and the NPV was 92% (88-94%).

Conclusion: Microscopy (ZN) missed diagnosing nearly half of HIV-TB co-infected patients in this setting and 8 percent of those who tested negative microscopically were truly positive for TB. Rapid scale-up of GeneXpert technology in Uganda and similar settings in sub-Saharan Africa is urgently needed to maximize diagnosis of TB among HIV-positive persons.

Validation of TB Sputum Microscopy Against GeneXpert Real-time PCR

		GeneXpert		
		Positive	Negative	**Total**
Sputum Microscopy	Positive	33	0	**33**
	Negative	29	314	**343**
	Total	**62**	**314**	**376**

374 "I Was Drunk and I Couldn't Remember Taking My Treatment": The Use of Antiretroviral Therapy by Alcohol-Using Women in South Africa

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Background: South Africa is committed to meeting the UNAIDS 90-90-90 treatment targets but only 53% of those infected with HIV are on antiretroviral therapy (ART). Furthermore, populations who use alcohol and other drugs (AOD) in South Africa continue to encounter barriers in the HIV treatment cascade.

Methods: A National Institute on Alcohol Abuse and Alcoholism (NIAAA) implementation science study is reaching AOD-using women living with HIV in health clinics and substance abuse treatment programs in Cape Town, through a stepped- wedge mixed methods design (R01AA022882). A total of 245 women have been recruited; the average age is 32.4 years (*SD* = 6.30). At enrollment, participants completed a questionnaire which included assessment of alcohol consumption in the past year (AUDIT-C), their HIV treatment history, and demographic information.

Results: Of those recruited, 20% reported to have been newly diagnosed with HIV in the past year. In all, 82% reported to be on ART; but only 26% were adhering 100% in the past month, and 31% self- reported to have missed their medication because they had been intoxicated. Logistic regression revealed the AUDIT-C scores were positively related to missing doses of ART medication or stopping ART medications in the past 6 months (β=.11, SE=.06, CI: 1.005, 1.246, p=.04). In addition, those who reported a longer duration on ART were more likely to report non-adherence than those newly initiated.

Conclusions: Adequate ART adherence is necessary to achieve lifetime viral suppression which ultimately contributes to reduction of HIV incidence. As South Africa adapts universal ART for all HIV-infected persons and moves to achieving the goals of UNAIDS' 90-90-90 campaign to end AIDS by 2030, tailored interventions with those who use alcohol and other drugs will be important to maximize engagement in every step of the HIV care continuum.

376 EMR Query Development to Improve Linkage and Retention Interventions

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Background: In 2012, the Cook County Health and Hospitals System/ Ruth M. Rothstein CORE Center implemented the Patient Centered Medical Home (PCMH) model, which includes developing data infrastructure for CQI measures and processes to monitor linkage and retention in HIV care. As part of the Practice Transformative Model (PTM) HRSA/SPNS grant, we developed an EMR query of CORE patients who did not have an HIV appointment in 12 months. This query yielded a static retrospective list of 659 patients who required outreach for reengagement in care.

Methods: A chart review of 659 patients identified 77 patients who (1) transferred care elsewhere, (2) relocated, (3) were incarcerated, or (4) were deceased. Of the remaining 582 patients, 64 patients had pending appointments. In November 2016, a Community Health Worker (CHW) initiated outreach on the remaining 518 patients and followed a workflow including phone calls, letters, and home visits.

Results: By April 2017, the CHW outreached 463 patients and contacted 184. Of 184 patients, 22 (12%) were deceased, 6 (3%) were uninterested in returning to CORE, 22 (12%) had relocated, 51 (28%) had transferred care, 83 (45%) had been reengaged in care by all CORE projects.

Conclusion: To facilitate outreach activities for patients lost to care, we revised the EMR query to create an active retrospective list that refreshes daily to integrate new data. In April 2017, this active retrospective list included 1,618 CORE patients. To streamline outreach efforts and improve efficiency related to linkage to care services, a monthly data feedback loop with CORE's Data to Care (DTC) Project funded by the Chicago Department of Public Health (CDPH) and utilizes surveillance data to identify patients in care elsewhere. The goal is to reduce this list to a manageable number of patients for outreach service done by two CHW starting May 2017.

377 Looking Inward Facing Outward: Developing Strategies to Address Health Disparities

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Background: Health disparities based on race, age, gender identification and nativity plague our HIV continuum and compromise the goals we've set as local regions as well as entire nations. Governmental Public Health Agencies have a unique role; addressing the systemic structures that contribute to inequity.

Method: In this presentation, we will share the ideas offered, rejected, planned and actualized, the struggles, lessons learned, tensions experienced, impact of and hopes moving forward for own Office within WA DOH around tackling the problem of eliminating health disparities within the HIV continuum. We will provide sample staff surveys, an equity toolkit, job descriptions, training references, and plenty of personal experiences. This is critical work. And this is difficult work. Shifting power takes courage and humility. We are excited to offer a little encouragement for both.

Results: Effective strategies to reduce and ultimately eliminate such disparities will require intentional concentrated efforts at every level. Within our own Office of Infectious Disease at the Washington Department of Health, such efforts include educating staff on the real history and effects of racism and other insidious belief systems on all aspects of health and well-being, of becoming aware of our own individual and systemic systems of privilege, and then incorporating those lessons and that awareness into the policies we create, the manner in which we collect, analyze and present data, and the methods and attitudes we employ when engaging our communities.

Conclusion: Apply the concept of addressing institutional oppression into the data collection, data analysis, policies, and community engagement.

378 PrEP Awareness, Interest, and Use among Women of Color in New York City, 2016

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Background: Pre-exposure prophylaxis (PrEP) is an effective method of HIV prevention for heterosexually active women, but gaps remain in our understanding of awareness, acceptability, and use among them.

Methods: In fall 2016, we conducted an anonymous street-intercept survey in transit hubs/commercial centers of neighborhoods in the top quartile of HIV diagnosis rates among women. Women were eligible if they reported black and/or Hispanic race/ethnicity, age 18-64, NYC residence, and ≥1 male sexual partner in the previous 12 months. For this analysis, participants reporting HIV-positive status were excluded. We examined the prevalence of PrEP awareness and interest in PrEP among those aware. Potential correlates of PrEP awareness were examined via bivariate and multivariable regression, including demographic factors (age, race/ethnicity, education, income) and indications for PrEP by state and national guidelines [report of any of the following (past 6 months): multiple condomless sex partners; stimulant or injection drug use; transactional sex; PEP use; MSM or HIV-positive sexual partner; or STI diagnosis (past year)].

Results: Among 411 participants, mean age was 34; 63% were black, non-Hispanic, and 37% were Hispanic; 72% resided in a neighborhood in the top quartile of diagnosis rates among women. Awareness of PrEP was 24% (n=97); 13% (n=54) reported indications for PrEP, and <1% (n=2) had used it. Among those aware, 19% (n=17) were interested in PrEP. PrEP awareness was bivariately associated with age <35, being US-born, and having income ≥$20,000; in multivariable analysis, only income remained significant [Adjusted Prevalence Ratio <$20,000 versus ≥$20,000 0.60, 95% CI 0.40-0.88]. PrEP candidacy was not significantly associated with having heard of PrEP.

Conclusions: Only one in four black and/or Hispanic women in high-incidence NYC neighborhoods were aware of PrEP and almost none had used it, though one in five women aware were interested. Public health programs should continue to promote PrEP for women.

379 Explaining Improved Adherence among HIV-Positive Patients in China: Insights from a Qualitative Component of the China Adherence Through Technology Study (CATS) Randomized Controlled Trial

Lora Sabin (presenting)[1], Lauren Mansfield[1], Taryn Vian[1], Mary Bachman DeSilva[2], Allen Gifford[1], Wubin Xie[3], Yiyao Li[1], Christopher Gill[1]

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Background: The 'China Adherence through Technology Study' (CATS) found that use of wireless pill containers (WPCs), complemented by triggered text message reminders and counselling informed by WPC-generated data, improved adherence to antiretroviral therapy (ART) among HIV-positive individuals in China. Subjects who were suboptimal adherers at baseline (<95% in the three months preceding randomization) experienced an immediate improvement in adherence. Optimal adherers (≥95%) remained above 95% over the 6-month intervention. To gain an understanding of the reasons for intervention success, we incorporated a qualitative study component at the end of the intervention.

Methods: Intervention arm subjects were selected purposefully for participation in in-depth interviews at their sixth and final monthly clinic visit. Interviews utilized a semi-structured guide; questions covering views and experiences regarding the WPC, the reminders, and counselling. Transcripts were coded and analyzed in NVivo using a thematic approach.

Results: Twenty subjects participated. Fourteen were male. Nine had been on ART less than 6 months. Eleven had baseline optimal adherence; 17 were optimally adherent in the final intervention month. In IDIs, many participants referred to the intervention's guiding effect, describing it as: "a supervisor" and "like a teacher overseeing." For optimal adherers, the intervention reinforced positive behaviours; participants noted that reports "proved" they were taking pills on time, which made them feel "happy" and "encouraged." For suboptimal adherers, reports and triggered reminders helped them establish positive dose-taking habits; they highlighted that counsellors used reports to discuss reasons for missed/late doses and to help problem-solve. Participants perceived that improvements in adherence were a result of overcoming personal barriers to adherence and establishing regular routines.

Conclusions: The effect of the CATS intervention differed for baseline suboptimal versus optimal adherers. While mHealth interventions have the potential to promote HIV treatment adherence, special consideration should be taken to adequately support different patient populations.

384 Health, Intimacy, HIV-Related Anxiety, and Stigma: Perspectives of Women Prescribed HIV Pre-Exposure Prophylaxis at an Urban, Community-Based Sexual Health Clinic

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Background: Despite being a user-controlled HIV prevention method, pre-exposure prophylaxis (PrEP) remains underutilized among women in the United States. As such, little is known about US women's perspectives on and experiences with taking PrEP.

Methods: The study took place at an urban community-based sexual health clinic that offers PrEP care. We recruited cisgender women who have sex with men and who received at least one PrEP prescription. We conducted individual semi-structured interviews that asked how participants found out about PrEP, their reasons for initiating PrEP, and their experiences taking PrEP. We used grounded theory and the constant comparative method to identify emergent themes.

Results: Among our sample (n=12), median age was 40 years (range: 35-49). Most women were either Latina or non-Latina Black, learned about PrEP from a health or social services provider, and were in a known sero-discordant partnership. Women felt that PrEP allowed them to protect themselves and "stay healthy". For those with HIV-positive partners, PrEP enabled them to maintain their relationships while remaining HIV-negative. With regards to their sex lives, PrEP allowed some women to feel more connected to their partners, in part, because women felt they could forgo condoms. In contrast, for others, PrEP provided "an extra layer of protection" when used with condoms and decreased anxiety about acquiring HIV. Despite these benefits, many perceived and/or experienced PrEP-related stigma. Most did not disclose their PrEP use to others (besides their partners) for fear that they would be assumed to be HIV-positive or promiscuous, or be judged for being in a sero-discordant relationship.

Conclusions: While experiences with PrEP centered on maintaining health, improved intimacy, and reduced HIV-related anxiety, PrEP-related stigma was common. Future research should ascertain what role stigma may play in U.S women's PrEP uptake, persistence, and adherence and how stigma can be effectively addressed in future PrEP-related interventions.

386 "Yes, I'm Ready, and I'm taking them!": HIV-Infected Young Men who have Sex with Men and Transgender Women Evaluate the Epic Allies Gamified Smartphone App for Improving Antiretroviral Uptake and Adherence

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Background: Young men who have sex with men and transwomen who have sex with men (YMSM/TW) have suboptimal antiretroviral therapy (ART) use and viral load (VL) suppression. We designed the Epic Allies theory-based smartphone application (app) to improve ART uptake and adherence through tailored medication reminders, a health dashboard for visualizing adherence, daily educational and motivational articles, and gamification (mini-games, points, badges).

Methods: A five-site randomized controlled trial began in October 2015 enrolling new-to-care and ART non-adherent HIV-positive YMSM/TW ages 16 to 24. Participants were randomized to Epic Allies or weekly text messages. Main study outcomes (baseline, weeks 13, 26 and 39) include VL and self-reported adherence. We report on qualitative interviews conducted at week 26 evaluating app acceptability and behavioral impact.

Results: Twenty-two interviewees (mean age 22.2, 19 black/African American) used the app on average 2 to 4 times per week and 17 would recommend it to others. All participants not on ART at baseline (n=9) started ART during the study. Participants reported the app motivated them to take ART consistently (15/21) and provided precise information needed about ART (16/22). Participants described how daily app use modeled and encouraged daily ART use and made them feel supported by others living with HIV. The health dashboard enabled participants to see patterns in missed doses and tracked behaviors (e.g. marijuana, alcohol, mood). The app's superhero theme resonated well; mini-games and medication alarms were rated highly and noted as encouraging regular use. Security features (password, discrete app icon), were also described as promoting regular use. Suggested enhancements included: more games and articles, chat features, and ART refill reminders.

Conclusion: Epic Allies shows high acceptability for increasing ART uptake and adherence. App tailoring and gamification created a positive, patient-centered experience that may foster sustained intervention engagement while meeting informational ART needs.

387 Adherence to Oral PrEP among Sex Workers

Smarajit Jana (presenting), Protim Ray, Soma Roy, Mousumi Chowdhury Dam

Sonagachi Research and Training Institute, West Bengal, India

Background: A PrEP Demonstration Project was initiated in February 2016 among the sex workers in brothel setting in Kolkata, India. Oral PrEP was a combination of Tenofovir and Emtricitabine. Objective was to access acceptability of oral PrEP and find out appropriate delivery strategies as well as monitor adherence.

Methods: Recruitment was based on the self-identified female sex workers who are active in the trade, aged 18 years and above and showed interest in taking PrEP. Battery of tests was performed which includes Complete Blood Count, Creatinine, Liver Function Test, and for HIV, Hep B and Hep C. Ultrasonography of whole abdomen and Chest X-Ray was also done. Urine was tested for Pregnancy. Strict exclusion criteria was HIV positive and pregnancy. Participants were recruited in batches and medicine was provided through a makeshift clinic established in the heart of the red light district to enroll 700 sex workers by the end of 2016. To ensure adequate adherence to PrEP, Counsellors and Peer Monitors were employed to contact every participant.

Results: Till 10th April 2017, out of 235 individuals registered till April 2016, and completed one year of medication, 190 retained in the study. Among the 45 who dropped out, 12 stopped medicine due to side effect, 1 in custody, 1 expired (but not related to PrEP), 4 were discarded as they got pregnant. However the largest number (17) of non-compliant to PrEP is for leaving the said red light district and were not traceable afterwards. Three out of them stopped taking medicine due to health problem not associated with PrEP and seven could not continue with PrEP due to various family and other issues linked to their occupation.

Conclusions: Acceptability of PrEP among the sex workers though found to be high, but factors related to sex trade and practices (frequent mobility) appears a formidable challenge. Development of a system to track down recipients would help accessing PrEP in newer sites could address the adherence issue of PrEP among sex workers.

388 Incidence and Risk Factors for Medical Care Interruption in Two HIV-Infected Patients Cohorts Between 2010 and 2016 in Paris and Caen

Anna Fournier (presenting)[1], JJ Parienti[1], Karen Champenois[2], Roland Landman[3], Emmanuelle Papot[2], Renaud Verdon[2], Yazdan Yazdanpanah[2]

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Background: The aim of our study was to identify HIV-infected patients at risk of medical care interruption (MCI) in a high-income country but in two different populations.

Methods: We estimated the incidence rate of MCI in 4,796 individuals followed in Bichat hospital (Paris) and in 989 patients from Caen hospital, between January 2010 and May 2016. We enrolled patients over 18 years old who were seen at the clinic at least twice after HIV diagnosis. Patients were considered in MCI if they did not attend care in or outside the clinic for at least 18 months. We investigated characteristics at HIV diagnosis and during follow-up through a Cox model analysis in each cohort.

Results: The incidence rate (n per 100 persons-years (p-y); [IC95]) of MCI was estimated to be 2.5 [2.3-2.7] in the Bichat cohort, and 3.0 [2.6-3.5] in the Caen cohort. The independent risk factors for MCI similar between Bichat and Caen cohorts were a linkage to care >6 months (HR=1.04 [1.01-1.08] and 1.14 [1.08-1.21], respectively), and no antiretroviral therapy (HR=3.72 [2.93-4.73] and HR=2.78 [1.66-4.63]). No primary care physician (HR=2.41 [2.03-2.85]), to live in Ile-de-France (HR=0.70 [0.54-0.90] vs. in the 18th arrondissement in Paris) and CD4 count ≤350 during the follow-up (HR=3.18 [2.23-4.54] vs. >500 cells/mm3) were Bichat risk factors. No available address (HR=1.73 [1.07-2.80]), hepatitis C coinfection (HR=1.76 [1.07-2.88]) and being older (HR=0.28 [0.15-0.51] for >45 vs. ≤30 years) were Caen risk factors. Finally, being born in Sub-Saharan Africa was a risk factor in Caen (HR=2.18 [1.42-3.34] vs. in France) but a protective factor in Bichat (HR=0.75 [0.62–0.91]).

Conclusions: Our findings showed differences in incidence and factors associated with MCI between two cohorts, reflecting heterogeneity of individuals and care according to geographical area. It may help clinician to identify patients at risk of MCI and to initiate appropriate interventions earlier.

389 Patterns of Adherence and Impact on HIV RNA by Integrase Inhibitor-Based Therapy

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Background: In the era of simple, potent and well tolerated antiretroviral therapy such as integrase strand transfer inhibitor (INSTI), the importance of strict adherence is debated. Most of the data from INSTI therapy emerge from clinical trials, which may not be representative of real-world clinical practice.

Methods: We analyzed 124 individual data pooled from two prospective cohorts including first (raltegravir (RAL), n=81) and second generation INSTI - (NCT02878642 ongoing study with dolutegravir (DTG, n=43) based therapies. The relationship between MEMS defined adherence patterns (% adherence rate and longest treatment interruption) and HIV RNA outcome (in Log) after 3 to 6 months of follow-up was computed by generalized linear models and variance explained (R^2).

Results: The proportion of HIV RNA <4 0cp/mL at baseline was 62/81 (77%) for RAL and 17/43 (40%) for DTG. Median adherence rate [IQR] were: RAL, 97 [95-99]; DTG, 93 [90-97]. Adherence rate (+10%) was significantly associated with lower HIV RNA level (slope, p-value, R^2) for RAL (-0.46, p <0.0001, 0.67) but not for DTG (-0.11, p=0.12, 0.06). Longest interruption was significantly associated with higher HIV RNA level (slope, p-value, R^2) for RAL (1.6, p <0 .0001, 0.33) but not for DTG (0.52, p=0.49, 0.01). In multivariate analysis, DTG was associated with lower HIV RNA level (-0.18, p=0.043) compared with RAL, controlling for adherence rate (p <0.0001), baseline CD4 (p=0.41) and HIV RNA suppression at baseline (p=0.035). Similar results were observed among individuals with <95% adherence (n=46) but not among individuals with 95% adherence or more (n=78) in which neither DTG (p=0.20) nor adherence rate (p=0.46) were associated with HIV RNA outcome.

Conclusion: These preliminary findings suggest that variations in adherence patterns have a lower impact on HIV RNA in DTG- than in RAL-based therapy and are consistent with the long dissociative half-life for integrase and high genetic barrier of second generation INSTI.

390 Barriers to Retention in Care and ART Adherence among Pregnant and Postpartum Women in Uganda: Qualitative Results of the WiseMama Study

Lisa Messersmith (presenting)[1], Anna Larson Williams[1], Abigail Morrison[1], Nafisa Halim[1], Elizabeth Simmons[1], Harriet Chemusto[2], Julia Gasuza[2], Philip Aroda[2], Davidson Hamer[1], Allen Gifford[1], Rachael Bonawitz[1], Mary Bachman DeSilva[3], Seggane Musisi[4], Barbara Mukasa[2], Lora Sabin[1]

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Background: HIV-positive pregnant and postpartum women face numerous individual, interpersonal, structural, and social barriers to ART adherence and retention in HIV care. The Uganda 'WiseMama' Study explored these barriers in order to improve and understand intervention effects.

Methods: Between July 2015 and February 2016, we enrolled 133 HIV positive, ART-naïve pregnant women in antenatal care (ANC) at Mityana and Entebbe hospitals and followed them through 3 months postpartum. At the end of the study (postpartum month 3) women participated in in-depth interviews and focus group discussions regarding the major barriers to maintaining high ART adherence and completing routinely scheduled ante- and post-natal visits.

Results: Major barriers to adherence and retention from women who participated in individual interviews and focus group discussions included: forgetfulness; stress, fear, anxiety and exhaustion; fear of disclosure to partners; fear of her husband discovering she is HIV positive; limited food availability to take their medication; fear of social stigma; problems affording and arranging transport to the clinic; distance to the clinic; travel outside her home district; fear or dislike of medication side effects; and poor treatment by clinic staff. Lack of disclosure was a common theme, often connected to the fear of the consequences of disclosing to partners. In addition, some women talked about the need for husbands to be tested for HIV and to disclose their status, which would facilitate women being able to disclose and access care and treatment.

Conclusions: Retention in care and high ART adherence are critical to the health of mothers and newborns. Interventions that aim to improve retention and adherence among pregnant and postpartum women must address a range of individual, interpersonal, structural, and social barriers including gender power relations, poverty, food insecurity, quality of care, and stigma.

393 Lack of Disclosure of HIV Status to Partners: A Major Barrier to Retention in Care for Pregnant and Postpartum Women in the WiseMama Uganda Study

Lisa Messersmith (presenting)[1], Nafisa Halim[1], Elizabeth Simmons[1], Anna Larson Williams[1], Harriet Chemusto[2], Julia Gasuza[2], Philip Aroda[2], Davidson Hamer[1], Allen Gifford[1], Rachael Bonawitz[1], Mary Bachman DeSilva[3], Seggane Musisi[4], Barbara Mukasa[2], Lora Sabin[1]

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Background: HIV-positive pregnant and postpartum women (PPPW) face major challenges to retention in HIV care. One aim of the Uganda 'WiseMama' Study was to determine barriers to and correlates of retention.

Methods: Between July 2015 and February 2016, we enrolled 133 HIV positive, ART-naïve pregnant women in antenatal care (ANC) at Mityana and Entebbe hospitals. Pregnant women were interviewed at enrollment and again at 3 months postpartum. For this analysis, our measure of retention is the proportion of scheduled pre- and post-delivery visits completed.

Results: On average, women completed 85% of scheduled visits between enrollment and postpartum month 3 (entire study period), 93.3% in the pre-delivery period, but only 76.1% postpartum. 24.8% of women at enrollment (n=133) reported having disclosed to their partners, while only 56% had disclosed by postpartum month 3 (n=100). OLS regression found that women who disclosed their HIV status to their partners completed 8.6% more scheduled visits over the entire study period than women who did not disclose (p<0.028), Interestingly, women who had disclosed completed 18.5% more scheduled *postpartum* visits than women who did not disclose (p<0.002). Women with secondary or higher education completed 13.3% (p< 0.003) and 22.7% (p<0.001) more scheduled visits over the entire study and during the post-partum period, respectively, than women with lower levels of education. Major reasons for lack of disclosure at enrollment and at postpartum month 3 include fear husband will blame her for HIV (47% and 32%, respectively) and fear of divorce (68% and 16%, respectively).

Conclusions: Retention in care is critical to the health of mothers and newborns. Disclosure is positively associated with higher retention in care, especially in the postpartum period. Interventions that aim to improve retention must address gender power norms and women's fear and lack of disclosure to male partners.

394 Latent Trajectories of ART Adherence and Predictors of Classification in an ART Intervention Among Methamphetamine Users

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Background: Consistent adherence to antiretroviral therapy (ART) is central to the optimal health of people living with HIV (PLWH). Among substance-using PLWH, significant heterogeneity exists in longitudinal adherence, suggesting discrete subpopulations of individuals that are potentially identifiable by baseline characteristics.

Methods: In a 42-day ART intervention among 71 (22 control and 49 intervention) self-identified methamphetamine (meth) users, adherence was measured using the Medication Event Monitoring System (MEMS). Growth mixture modeling (GMM) was utilized to identify the number of latent classes and shape of adherence trajectories, accounting for known-class assignment to study arms.

Results: GMM revealed three overall trajectories of adherence among participants. The first was a class of consistently high adherence, the second characterized by initially high adherence that rapidly decreased over time, and the third class showed consistently low adherence. Baseline cognitive complaints, beliefs about ART utility, and intentions to comply with treatment predicted later classification trajectories. Specifically, on subscales of the Patient Assessment of Own Functioning Inventory, greater perceived impairment was associated with decreased odds of classification in both the high and decreasing trajectories, as compared to the low trajectory class, for cognitive/intellectual (B=-0.397, OR=0.672, p=0.002, and B=-0.334, OR=0.716, p=0.038, respectively) and memory functioning (B=-0.297, OR=0.743, p=0.009, and B=-0.497, OR=0.608, p=0.002, respectively). Furthermore, on the Adherence Determination Questionnaire, greater intentions to comply were associated with increased odds of classification in the decreasing vs. low group (B=0.296, OR=1.344, p=0.031) and marginally increased odds of being in the high vs. low group (B=0.265, OR=1.303, p=0.055) while greater perceived utility of ART was associated with increased odds of being in the high vs. low trajectory (B=0.162, OR=1.176, p=0.004).

Conclusion: In longitudinal interventions to improve ART adherence, differential trajectories of adherence can be identified and class membership predicted by baseline characteristics. As cognitive functioning and constructs of the Theory of Planned Behavior and the Health Belief Model were related to adherence trajectories, intervening upon these factors may have implications for improving ART adherence among substance-using PLWH.

396 e2MyHealth- Low Health Literacy Patient Portal, a Ryan White Bergen Passaic SPNS (Special Project of National Significance) Initiative

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Background: *e2MyHealth* is an innovative, mobile-responsive, web-based low-health literacy Patient Portal/ Personal Health Record for New Jersey's Bergen-Passaic Transitional Grant Area network designed to improve care engagement, retention, visits and medication adherence and Viral Load suppression for PLWHA (People Living with HIV AIDS). *e2MyHealth* provides access to health care information and is connected to federally-supported resource MEDLINE PLUS®, designed for low-health literacy. *e2MyHealth* is developed by a consortium of providers, consumers, industry representatives from HRSA/SPNS (Health Resources and Services Administration/Special Projects of National Significance), leveraging research, design, and outcomes of Columbia University's / New York Presbyterian Hospital & SelectHealth's *MyHealthProfile* that won New York City's Patient Portal design challenge. *e2MyHealth* uses advanced tethered, real-time Health Information Exchange to present data from eCOMPAS (electronic Comprehensive Outcomes Measurement Program for Accountability and Success). 18 funded Part A providers are participating and *e2MyHealth* is available to 6,000+ consumers.

Methods: Stakeholder engagements were conducted to demonstrate *MyHealthProfile* findings. A web-based consumer survey released. Results were presented to the Quality Management team and design changes made. Providers introduced *e2MyHealth* to consumers at their medical visit, assisted them with internet access and secure login accounts. Dr. Peter Gordon (previous investigator) provided research, findings, and feedback throughout.

Results: 85% of consumers who took the survey knew what a Patient Portal is. 54% believed having an alert notification of their next medical appointment in *e2MyHealth* will help them adhere to medical visits. Providers are recording medical appointment dates in eCOMPAS and *e2MyHealth* alerts the Consumers. To improve adherence, Providers expressed that lab results must be "released" to Consumers only after their medical visit. Only Providers can release lab data to *e2MyHealth*.

Conclusion: *e2MyHealth* is critical for PLWHA to gain access to their medical information, Viral Load data, medications and appointments to improve adherence leading to better individual health.

397 Syndemic Psychiatric Diagnoses Additively Associated with Condomless Sex and Health Care Utilization among MSM with Trauma Histories

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Background: Syndemic theory posits that co-occurring problems, such as substance use, trauma, and depression, synergistically increase HIV risk among men who have sex with men (MSM). However, syndemic investigation has tended to assess the cumulative impact of these problems using brief self-report measures, limiting ability to accurately assess these problems and potential interactions, and to determine which problem(s) should be prioritized clinically.

Methods: We test both additive and interactive effects of three formal clinical diagnoses consistent with previously identified syndemics (substance use disorder (SUD); Post-Traumatic Stress Disorder (PTSD), and Major Depressive Disorder (MDD)) on key health-related indicators, specifically episodes of condomless anal sex (accounting for PrEP use), sexually transmitted infections (STIs), and number of ER visits in the past 3 months in a sample of HIV-negative MSM with trauma histories (n=290).

Results: We found significant bivariate relationships between SUD and MDD (OR=1.79, p=0.028) and between PTSD and MDD (OR=4.93, p<0.001), and a trend between SUD and PTSD (OR=1.62, p=0.057). Additive syndemic diagnoses were associated with number of episodes of condomless sex (β=0.15, p=0.014) and ER visits (β=0.14, p=0.016). No additive effect of syndemic diagnoses was found for STIs. In multiple regression models, we found that only SUD was associated with episodes of condomless sex (β=0.13, p=0.04) and only MDD was associated with ER visits (β=0.19, p=0.004), which we confirmed was not attributable to suicidality. We did not find any interactions between syndemic diagnoses on any health-related indicators. Results did not differ substantially when we controlled for race, ethnicity, and education.

Conclusions: To our knowledge, this is the first study that demonstrates that cumulative burdens of syndemic diagnoses are associated with condomless sex and ER visits among MSM with trauma histories. Further, our results indicate the need to prioritize empirically supported treatments for SUD and MDD in this high-risk population.

399 HIV Testing Outcomes in a Multi-National Cohort of Latino Migrants with Substance Use and Mental Health Problems

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Background: Individuals with substance use disorders and migrants are at high risk for undiagnosed HIV and are key populations to achieve the United Nation's 90-90-90 targets.

Methods: We used HIV and sexually transmitted infection (STI) biomarkers from a multi-national randomized trial of a behavioral intervention for Latino migrants. Eligibility criteria were: age 18-70 years; positive screen for substance use and mental health problems; and not enrolled in substance or mental health care. Risk behaviors and clinical history were assessed at baseline. HIV and STI testing was offered at week-6 using rapid HIV testing (OraQuick, OraSure Technologies, Inc) and urine nucleic acid amplification for *Chlamydia trachomatis* and *Neisseria gonorrhea.* A multinomial logistic regression examined potential predictors of HIV or STI test decline or loss to follow-up (LTFU) compared with acceptance.

Results: Of the 341 participants, 252 (74%) accepted HIV/STI testing, 15 (4%) refused, and 74 (22%) were LTFU. Lifetime injection drug use was low (3%) and 16% (n=53) reported condomless anal sex. The multivariate model suggests a lower odd of test refusal when participants were recruited at a community agency or by personal referral compared with primary care site (OR=0.66 [95% CI 0.44-1.00]), and when the main partner had undergone HIV testing (OR=0.32 [95% CI 0.14-0.75]). LTFU prior to testing was lower in those with a college degree or higher (OR 0.14 [95% CI 0.13-0.15]) and higher in those who reported a high concern for HIV compared with no concern (OR=1.49 [95% CI 1.14-1.96].

Conclusions: Nearly three-quarters of Latino migrants accepted HIV/STI testing. Those most concerned for HIV and with lowest education were more likely to drop out prior to test offer. Mechanisms to personalize the delivery of testing, such as community-based delivery or referral by a known person, may help overcome these barriers to HIV/STI services in this population.

400 HIV Care Continuum Methodologies in 7 US Fast-Track Cities

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Background: As part of implementation strategies for accelerating their local AIDS responses, Fast-Track Cities (FTCs) are engaged in HIV care continuum optimization. Standardized measurement, monitoring, and reporting of continuum data is imperative for programmatic decision-making, comparison among cities, and accountability towards stakeholders, notably affected communities.

Methods: Local health department reports and FTC dashboards (www.fast-trackcities.org) for 11 US FTCs were reviewed to search for HIV care continuum data and methodologies. Inclusion criteria included: 1) being a US FTC; and 2) availability of continuum data and corresponding methodology, inclusive of at least two continuum indicators, in the public domain. Four cities were excluded from the assessment. For the remaining 7 cities, data and methodologies were compared to assess for consistency and metrics were reviewed in accordance with the 2015 *IAPAC Guidelines for Optimizing the HIV Care Continuum*.

Results: Five of the 7 FTCs included in the assessment reported the proportion of diagnosed people living with HIV (PLHIV), 7 reported the proportion of PLHIV retained in care, 2 reported the proportion of PLHIV on ART, and 7 reported the proportion of PLHIV virally suppressed. Four cities calculated the proportions using the estimated number of PLHIV as a common denominator. Three cities used the number of diagnosed PLHIV as the common denominator. Three cities did not include methods for calculating the estimated number of PLHIV and other cities used differing methodologies where the number of PLHIV was estimated based on data from surveys, program data, or modeling (back-calculation) of undiagnosed PLHIV. Diagnosis methodologies also differed with cities having varied inclusion strategies (i.e., location of diagnosis, in- and out-migration, diagnosis timeframe). Retention methodologies were defined with differing requirements (i.e., viral load test, CD4 count, office visit, pharmacy visit) and differing frequencies (i.e., annual, semi-annual). Two FTCs reported on ART inclusive of any time-period and the other within a 12-month timeframe. Viral suppression was defined by 6 cities as <200 copies/mL in the specified year, and as <100 copies/mL in the specified year by 1 city.

Conclusion: Methodologies for measuring, monitoring, and reporting continuum data differs greatly between US FTCs. The FTC initiative is working with local health departments to support the standardization of metrics to track progress in city HIV care continuum optimization.

402 Incidence and Predictors of "Lost to Follow-Up" among HIV-Positive Patients Receiving Care at a Tertiary Clinic in Harare, Zimbabwe

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Background: Adherence to therapy and ongoing monitoring is a cornerstone in realizing the remarkable benefits of HAART. Despite rapid scale-up of ART initiation, studies suggest a high proportion of patients drop out of care after initiation of HAART. Understanding how often and why patients drop out of treatment programs is essential for designing better retention strategies. We sought to determine the magnitude of LTFU and factors associated with LTFU at Zimbabwe's largest public tertiary HIV Clinic.

Methods: We performed a retrospective cohort study among patients enrolled into care between January 2012 to December 2015. The clinic's EMR system was reviewed and subsequent analysis was done using Stata. Subsequently, patients identified as LTFU were contacted by phone and interviewed to ascertain true outcome status and to determine reasons for LTFU.

Results: 1,705 patients were started on ART between January 2012 and December 2015 at our clinic, of which 307 (18%) had been LTFU for at least 6 months. We successfully traced 106 (35%) and established that 26 (8%) had died. Of the 80 found alive, 11 (14%) had defaulted therapy, 57 (71%) had transferred to another HIV clinic and were on treatment, 13 (16%) admitted to having at some point had treatment interruptions, and 12 (15%) had family contacts who were unsure of their treatment status as they had migrated. 4/11 (36%) who had defaulted therapy returned to the clinic after tracing.

Conclusions: There was a very high rate of LTFU among our cohort. Most patients who were identified as LTFU had either died or self-transferred to another clinic. A single telephone call resulted in re-initiation of care in 36% of patients who had defaulted therapy, suggesting that frequent tracing of LTFU patients can be useful for re-engaging these patients in care.

403 Acceptability and Efficacy of an mHealth Platform to Improve ART Adherence within Public Health HIV Clinics in Florida: A Pilot Study

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Background: Mobile health (mHealth) medication adherence platforms could help to improve viral suppression among people living with HIV (PLWH). We evaluated the acceptability and efficacy of an existing mHealth platform (Care4Today® Mobile Health Manager), as well as HIV providers' interest in receiving platform-generated adherence data.

Method: PLWH enrolled from three public health department clinics in Florida completed surveys and were invited to try the mHealth platform using the full application (app) or texting only. Self-reported ART adherence and mHealth platform use were obtained at baseline, 30-days and 90-days after enrollment, and HIV viral load (medical records) at baseline and 90-days. Providers were surveyed regarding interest in receiving platform-generated adherence data.

Results: Among 132 PLWH (mean age 46±11 years, 67% male, 60% black, 75% had a smartphone), 64% agreed to try the mHealth platform, and 36% used it at least once. Among initial platform users, 87% and 74% continued to use at 30- and 90-days, respectively. Among participants with <95% adherence at baseline (16 users, 29 non-users), ≥95% adherence at 30 days was 81% (users) and 59% (non-users) (p=0.12); and at 90 days was 47% (users) and 41% (non-users) (p=0.72). Among 50 persons with detectable HIV viremia at baseline (15 users, 35 non-users), follow-up viral loads were undetectable (<40 copies/ml) in 80% (users) and 69% (non-users), (p=0.41). Providers were generally interested in reviewing platform-generated adherence data during clinic visits, but few wanted real-time results.

Conclusion: In summary, approximately one-third of PLWH in public HIV clinics who were offered an mHealth adherence platform used it at least once, and 74% of these persons continued to use for at least 3 months. Although initial results suggest the possibility that the platform can help to improve HIV viral suppression in a clinic population, larger studies are needed to confirm the findings and optimize implementation into clinical settings.

404 Benchmarking Global 90-90-90 Targets in 11 US Fast-Track Cities

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Background: Fast-Track Cities (FTCs) are accelerating their AIDS responses by focusing on attaining the United Nations' 90-90-90 targets by 2020. The targets serve as a good framework to monitor progress towards urban HIV control objectives.

Methods: HIV care continuum indicators (2014 or later) were assessed to determine completeness and quality of 90-90-90 data in 11 US FTCs. Indicators included estimated number of people living with HIV (PLHIV), PLHIV aware of their status, diagnosed PLHIV on ART, PLHIV retained in care, and PLHIV on ART achieving viral suppression. Health department reports and literature were reviewed to collect continuum data and corresponding methodology. Baseline data were requested from city (or county) health departments. Where 90-90-90 data were not explicitly reported, they were calculated using continuum indicators.

Results: Three of the 11 cities reported neither 90-90-90 nor continuum data and were excluded from the assessment. Of the 8 cities included in the assessment, county data were considered in place of city data for 3 cities, 5 reported estimated number of PLHIV, all reported number of HIV diagnoses and number of PLHIV virally suppressed, and 2 reported number of PLHIV on ART. One city reported complete 90-90-90 data (New York City), 5 reported data for the first 90 (diagnosis), 1 reported data for the second 90 (on ART), and 2 reported data for the third 90 (viral suppression). All 8 cities reported retention in care data, but only 1 explicitly used these data as a proxy for PLHIV on ART. The retention in care methodology was defined with differing requirements (i.e., CD4 count, viral load test, office or pharmacy visit) and differing frequencies (i.e., annual, semi-annual).

Conclusion: Several US FTCs do not report baseline on ART data. In some cities, retention in care is considered a proxy for on ART due to the US test-and-treat policy, however differing calculation methodologies make it an unreliable indicator. Including an on ART indicator in the next update to the US National HIV/AIDS Strategy would facilitate the measurement, monitoring, and reporting of on ART data at city, county, and state levels.

405 Adherence Predicts Long-Term Viral Suppression with PI/INSTI Dual-Therapy and Preliminary Data Suggest that Dolutegravir Outperforms Raltegravir in this Setting

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Background: Dual-class antiretroviral regimens with protease-inhibitors(PIs) and integrase-strand-transfer-inhibitors(INSTIs) are an option for patients who cannot use nucleoside/tide-reverse-transcriptase-inhibitors. Previously we demonstrated that adherence and preexisting major PI resistance mutations are associated with virologic failure when using a PI with raltegravir. Here we follow up on long-term outcomes in this cohort and describe a new/modern cohort of patients on boosted darunavir(DRV) and dolutegravir(DTG) dual therapy.

Method: Records reviewed retrospectively for patients on dual therapy with PI/INSTI combinations to extract demographics, regimen start/stop dates, 6-month pharmacy-refill adherence, and viral suppression defined as HIV-RNA ≤200 or ≤50 copies/mL. For the modern cohort, boosted DRV (ritonavir or cobicistat) and DTG combinations were studied. Patients had to use our health-system pharmacy to be included in adherence analyses. Association between virologic success and adherence was determined using an unpaired T test.

Results: As previously reported in 39 patients, 92% achieved an HIV-RNA ≤200 copies/mL on a PI/RAL regimen. However, only 74% and 57% maintained suppression over 1 and 2 years respectively. There did not appear to be differential success based on the PI utilized. In 21 patients on DRV/DTG, 100% achieved an HIV-RNA ≤200 copies. After a median follow up of 539 days (IQR 368-658 days), 81% maintained an HIV-RNA <200 copies/mL and 76% had <50 copies/mL. In the PI/RAL cohort, 69% of patients had prior 3-class experience (NRTI/NNRTI/PI) vs 48% in the DRV/DTG cohort. Adherence assessment was done in 16 DRV/DTG treated individuals with median adherence of 96.7% (IQR 82.4-100%). Those with virologic success had a median adherence of 99.45% (IQR 88.1-100%) while those experiencing failure had a median adherence of 74.8% (IQR 61.7-87.8%, P=0.08).

Conclusion: Use of a contemporary dual-class regimen including DTG and DRV appears to have better rates of virologic success than older regimens of a PI and RAL. Medication adherence continues to be associated with virologic success. Further study of this potent, high-barrier dual-class regimen is warranted.

406 A Pre-Implementation Assessment: Disconnect between Black Women and their Providers on PrEP

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Background: Black women comprise a disproportionate segment of HIV-infected and at-risk populations in the U.S. Perspectives of women and their healthcare providers will inform PrEP implementation.

Methods: We conducted provider surveys (N=40), patient surveys (N=64), provider group interviews (N=24) and individual patient interviews (N=28) among clinicians and Black female HIV-uninfected patients at two publically funded primary care clinics in Houston TX, from April 2016 to March 2017. We asked about knowledge, perceptions and beliefs about PrEP.

Results: Providers (26 physicians, 11 nurse practitioners and 3 physician assistants) were on average 43 years old (SD=8.6), mostly females (80%), Black (53%) and averaged12 years (SD=6.6) post-medical training. Patients averaged 38 years old (SD=10.9) and most (91.1%) had at least 12th grade education. Most identified as heterosexual (78%), with a median of five lifetime sexual partners (Range 1, 300), 44% had recent unplanned sex, and 80% reported inconsistent condom use. Most (73%) preferred to be informed about PrEP by a healthcare provider instead of pamphlets, the media or peers; yet only 15% had discussed PrEP with their primary care provider. Most providers (90%) did not provide PrEP information to patients and had never prescribed PrEP (85%). However, 83% of providers reported that patient requests would motivate them to prescribe PrEP. Qualitative data indicates that most patients were unaware of PrEP but expressed confidence in providers. Providers want patients to initiate PrEP discussions and sought to defray educating patients to others. Providers were concerned about how specific cultural groups would respond to sexual health assessment. Providers also reported time constraints and perceived logistic barriers to PrEP prescription.

Conclusions: Black female patients assume providers can inform them. Providers prefer patients initiate PrEP discourse. PrEP implementation strategies for this population need to motivate providers to initiate PrEP discourse and facilitate knowledge transfer to at-risk patients.

407 Understanding Acceptance of HIV Diagnosis and its Relationship to Engagement in HIV Medical Care among Vulnerable Populations: A Qualitative Study of an Understudied Phenomenon

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Background: Current guidelines recommend persons living with HIV/AIDS (PLHA) engage in medical care and initiate antiretroviral therapy (ART) immediately after diagnosis. However, after HIV diagnosis it is common for vulnerable PLHA to evidence delays in linkage to care and ART initiation. Further, while greater acceptance of one's HIV diagnosis, in contrast to denial or avoidance, is associated with positive HIV outcomes, little is known about the phenomenon of "acceptance" of HIV among vulnerable PLHA and its relationship to engagement in medical care. The present study, guided by an ecological framework and Critical Race theory, uses qualitative methods to address this gap.

Methods: Black and Latino PLHA (N = 140) were recruited through peer referral in Brooklyn, NY in 2012-2015. A subset (N = 28) were purposively sampled for maximum variation for in-depth, semi-structured, qualitative interviews on psychological adaptation to HIV diagnosis and engagement in medical care. Data were analyzed using an Interpretive Phenomenological Analysis. Most participants were male (60.8%); Black (78.6%); aged 47-years (SD=7.12 years) on average; unemployed (92.9%); lacked basic necessities in the past year (75.0%); had histories of homelessness (71.4%) and incarceration (85.7); and met criteria for lifetime problematic substance use (78.6%).

Results: Analyses revealed that acceptance was a pre-requisite to engagement in medical care, yet acceptance was often a lengthy (>3 years), complex and non-linear process. We found five inter-related factors impeded acceptance of HIV status: (1) past history of trauma; (2) problematic substance use; (3) the experience of HIV as abstract in the absence of symptoms; (4) social isolation, which amplified feelings of stigma; and (5) receiving HIV testing in settings perceived as harsh and coercive.

Conclusions: In light of current HIV treatment guidelines, interventions that facilitate acceptance of HIV diagnosis, and consequent engagement in medical care and ART initiation for vulnerable PLHA are sorely needed.

408 Validation of Two Adherence Measures in Perinatally HIV-Infected Older Adolescents and Young Adults: Three-Item Self-Report Questionnaire and Unannounced Telephone Pill Counts

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Background: Older adolescents and young adults, including those who are perinatally HIV-infected (PHIVYA), are at great risk for sub-optimal adherence. With significant limitations of current measures, the use of multiple tools may be critical to understanding adherence behaviors to inform much needed evidence-based interventions. We evaluated the validity of unannounced telephone pill counts and a brief self-report questionnaire, not previously validated in PHIVYA.

Method: Data come from a sub-study of a longitudinal NYC-based cohort study (CASAH). Participants completed unannounced telephone pill counts and – within an average of six days – a three-item self-report adherence measure (number of missed doses, a rating of "how good a job" participants did at taking medications, and how often doses were taken in the past month) and blood draw for HIV RNA viral load (VL). Self-report items were examined as a linearly transformed adherence scale score (0-100%). T-tests were used to examine the relationship between a continuous self-report score, a continuous pill count score (% of prescribed doses taken), and VL (dichotomized at VL $\leq$20 vs. >20).

Results: Participants (N = 52) were 18-29 years old (M = 24), 58% female, 63% African- American/Black, 48% Hispanic/Latino. Average adherence measured by self-report and pill count was 80% and 75%, respectively. The adherence measures were significantly correlated with each other (r= 0.38, p<.02). Approximately half of participants had VL $\leq$ 20 copies/ml. Higher adherence as measured by pill counts was significantly associated with VL $\leq$20 (85% vs. 57%, p<.01). The self-report scale score was also associated with VL $\leq$20 (83% vs. 69%, p<.01). Unlike self-report, pill counts provided descriptive information about pill-taking habits.

Conclusions: Both pill count and self-reported adherence measures were significantly associated with VL and each other in PHIVYA. Pill counts provide unique information about pill-taking habits, yet self-report requires less staff, time and financial resources.

410 Intersectional Stigma and Psychological Distress among Young Black Men who have Sex with Men: Differences by HIV Status

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Background: Stigma related to sexuality and race have been found to independently contribute to the HIV disparities experienced by young Black men who have sex with men (YBMSM), including greater psychological distress and reduced social support. Using an intersectionality framework, we sought to examine whether stigma-related experiences synergistically create disparities in the psychological well-being of HIV-negative and HIV-positive YBMSM.

Methods: YBMSM (ages 18-30; N=474) completed an in-person baseline survey where they reported their experiences of intersectional stigma (i.e., racial and sexual discrimination), internalized homonegativity, social support, and anxiety and depression symptoms. We employed structural equation modeling to test the direct and indirect relationships between stigma and psychological distress, including testing whether social support mediated the relationship between internalized homonegativity and intersectional stigma and psychological distress. We then compared these models by self-reported HIV status (N=275 HIV negative/unknown; N=199 HIV positive).

Results: Intersectional stigma was positively associated with psychological distress and negatively associated with social support. Among HIV-negative YBMSM, internalized homonegativity and intersectional stigma were associated with anxiety and depression symptoms. Social support was negatively associated with anxiety and depression symptoms. Among HIV-positive YBMSM, however, intersectional stigma was associated with greater anxiety symptoms and diminished social support. Internalized homonegativity was not associated with social support or psychological distress among HIV-positive YBMSM. Social support was not associated with depressive symptoms among HIV-positive participants.

Conclusions: Although social support is posited to buffer the impact of stigma on psychological distress, HIV status might erode the protective effects of social support and create barriers to linkage to care and treatment adherence. These findings highlight the importance of stigma reduction interventions for YBMSM and suggest that tailored strategies by HIV status may be warranted.

413 Driving Systemic Change from the Institution to the City and Beyond – Homestead, FL, Miami-Dade County, FL

Bill Duquette (presenting)

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Background: The Florida DoH reports Miami-Dade County has the highest rate of new HIV cases in the country. The rate of new HIV diagnoses in South Florida spiked to more than three times the national average in 2015, according to the Centers for Disease Control and Prevention's annual HIV Surveillance Report.

Method: Homestead Hospital fully embraced the spirit of the 2015 HIV Testing legislation to become the first hospital in the state to implement a routine HIV/HCV screening program to help find the undiagnosed and reengage the lost to care.

Results: Since May 2016, Homestead Hospital has screened more than 8,000 Emergency Department patients and identified 76 HIV-positive individuals, including six acutely infected patients, and has linked 75% of patients to cre, including 100% of newly diagnosed patients. Distribution of positives: 64% of positives were in females aged 18-40 years. Of those, 48% were black females and three patients were also pregnant. New vs. Opportunities for Re-Engagement: 37% were new positives while 63% were previously diagnosed, but not in care.

Conclusion: In efforts to help prevent the spread of infection, the linkage to care infrastructure signaling the rapid response approach with every new positive will be enhanced to include a team to immediately reengage previous positives through an alert process facilitated by the Cerner EMR. Opportunities still exist for screening throughout the health system and employing a "test and treat" model. The rate of syphilis infections reported in Miami-Dade County has risen faster than the rest of the state and much of the nation. The FOCUS team is working with the DoH to overlay syphilis screening to identify high-risk HIV negatives for Comprehensive Prevention Services (CPS)

414 Effectiveness of Peer-To-Peer HIV Counseling in Myanmar: A Measure of Knowledge, Attitudes, and Barriers

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Background: In Myanmar, HIV counseling is free of charge but mandatory before antiretroviral initiation. The effectiveness of peer-to-peer HIV counseling has not been formally assessed in Myanmar.

Methods: We conducted a cross-sectional study utilizing questionnaires administered between May to October 2016 to 1,022 patients recruited from three different agencies across four cities in Myanmar. Approximately half of the study population received peer HIV counseling (PC) while the other half received standard counseling (SC). We conducted bivariate analyses comparing differences in knowledge, support, barriers to care, stigma, and adherence between the two groups. Significance was defined as p-value < 0.05.

Results: Of the 1,022 participants, 500 patients (49%) received PC and the remaining 51% (522) received SC. More individuals in the PC group (n=208, 41.5%) scored 90% or higher on the knowledge questions compared to the SC group (n=172, 33%, p=0.005), with higher mean knowledge scores in the PC group (14.4) compared to the SC group (13.9, p=0.015). Approximately 21.2% (106) in the PC group reported nonadherence compared to 27.1% (142) in the SC group (p=0.027). Level of stigma was 1.9 (±2.12) enacted and 18.5 (±2.5) internalized in the PC group, compared to 2.0 (±1.9) and 18.4 (±2.5) in the SC group (p=0.252 and 0.650, respectively). Interestingly, only 44.5% (n=219) of PC patients reported the highest level of satisfaction with their social support, compared to 62.7% (n=323) of SC patients ($p<0.001$). However, the PC group did also report a higher level of barriers to care (BTC) compared to the SC (32.6 vs. 20.9, $p<0.001$).

Conclusion: Peer HIV counseling is associated with a higher level of HIV knowledge, increased adherence to therapy, and lower stigma. Despite this, lower satisfaction with social support and higher levels of barriers to care are reported in the PC group.

415 HIV Screening Rate Automated Using a Best Practice Alert Allows for New and Previous Positives to be Linked into Care

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Background: A decade after CDC guidelines on non-targeted HIV screening emerged, screening rates remain low in many emergency settings. At our center, there had been difficulties in initiating non-targeted screening until automation using a Best Practice Alert (BPA) on adult patients (aged 18-64). By automating screening, new and previous positive patients were identified and linked into care.

Methods: From May 1, 2016 to September 18, 2016, before implementing our BPA, ED providers manually placed HIV screening tests. As of September 19, 2016, the BPA along with education on the current CDC guidelines, screening rates increased. Baseline data for screening rates and HIV positives were acquired from May 1, 2016 to September 18, 2016 and post-intervention data from September 19, 2016 to April 18, 2017.

Results: 66,398 unique patients were eligible for HIV screening between May 1, 2016 and March 31, 2017; 10,641 were screened for HIV. Before the BPA, 1 new positive HIV patient was identified, 4 previous positive patients were identified. After the BPA, 27 new positives were identified and 80 previous positives were identified. Of the new positive patient group, 82% linkage to care rate whereas amongst the previous positives there is a 66% linkage to care rate.

Conclusions: The BPA significantly improved screening rates and resulted in the identification of new and previous positive HIV patients and thereby linking them to care. Once a patient is identified, it is important to link the patient to care in a timely fashion, both to reduce the burden of disease to patient and to improve adherence to ARTs. The automated design of our ED screening program is increasing identification and linkage to care of both new and previous positives.

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