

Table 3: GO functional enrichment pathway analyses of down- and up-regulated clusters of DEGs

Up-regulated genes in HIV1 female	Down-regulated genes in HIV1 female
<b>GO pathway: BP</b> - Positive regulation of gene expression	<b>GO pathway: BP</b> - Translational initiation - Regulation of gene expression
<b>GO pathway: CC</b> - None	<b>GO pathway: CC</b> - Cytosolic small ribosomal subunit
<b>GO pathway: MF</b> - ATP binding	<b>GO pathway: MF</b> - Histone demethylase activity - rRNA binding

**Conclusion.** Aberrant DDX3X expression may contribute to sex-based differences in HIV disease. Drugs modifying DDX3X gene expression will be beneficial in the treatment of HIV especially resolving the HIV drug resistance problem because current anti-HIV drugs target viral components posed the risk of viral mutation.

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### 976. A Descriptive Retrospective Data Analysis of Maternal Sociodemographic Factors and Access of Healthcare Resources within the African Cohort Study, an Integrated Multicountry Preventative Mother to Child Transmission Program

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#### AFRICOS Study Group

**Session:** P-46. HIV: Prevention

**Background.** Global reduction in new infant HIV infections is largely due to the expansion of prevention of mother-to-child transmission (PMTCT) programs. Identification of gaps in healthcare services is paramount in targeting interventions that identify high-risk populations and healthcare barriers that could lead to increased risk of mother to child transmission (MTCT) of HIV.

**Methods.** HIV infected women from 5 regions of Africa enrolled in the African Cohort Study (AFRICOS) were followed prospectively with assessments performed every 6 months. Sociodemographic factors, pregnancy outcomes, and access of PMTCT resources were reviewed for retrospectively reported pregnancies and those followed prospectively from study enrollment. Statistical analysis compared the impact of clinical factors on infant mortality and preterm delivery.

**Results.** The study reported 5591 pregnancies from January 2013 to June 2019 of which 5363 were retrospectively reported prior to study enrollment and 228 occurred after enrollment. Pregnancies followed prospectively had higher rates of linkage to PMTCT services prenatally (92.5% vs 6.8%,  $P < 0.001$ ), intrapartum (64.5% vs 3.5%,  $P < 0.001$ ), and post-partum (64.5% vs 2.9%,  $P < 0.001$ ). This group had higher rates of delivery by a skilled birth attendant (93.4% vs 66.7%,  $P < 0.001$ ) and antiretroviral therapy (ART) prescribed antepartum (96.1% vs 5.5%,  $P < 0.001$ ) and post-partum (74.6% vs 3.6%,  $P < 0.001$ ). Both groups had similar rates of prescriptions for intrapartum ART (98.7% vs 97.9%). The majority of women reported ART adherence (96.5%,  $P < 0.001$ ) which was associated with a decrease in both preterm delivery and infant mortality (adjusted OR 0.24, 95% CI 0.15-0.39). A significant proportion of women followed prospectively reported their infants received ART with good adherence (51.8% vs 0.3% and 93.4% vs 6.3%, respectively  $P < 0.001$ ).

**Conclusion.** Participation in AFRICOS increased linkage to PMTCT programs which resulted in increased likelihood of skilled delivery and appropriate ART use for women and their infants. It highlights that linkage to care continues to be a crucial factor in limiting MTCT of HIV especially in resource-limited settings. Limitations in this study exist due to the low number of prospectively followed pregnancies.

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### 977. Bacterial STI Diagnoses as Missed Opportunities for HIV Pre-Exposure Prophylaxis

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**Session:** P-46. HIV: Prevention

**Background.** New HIV diagnoses in the United States have remained stagnant while the incidence has increased among certain groups; additional efforts towards HIV prevention are needed. Most adults who could benefit from HIV Pre-Exposure Prophylaxis (PrEP) in the United States are not receiving it. Many of these individuals present for healthcare visits for bacterial sexually transmitted infection (STI), an

indication for PrEP in both men who have sex with men (MSM) and heterosexual individuals; we sought to characterize these visits and identify missed opportunities for PrEP prescription to inform future PrEP expansion efforts.

**Methods.** A retrospective chart review was conducted for all healthcare encounters of adult patients newly diagnosed with a bacterial STI within the UC Davis Health electronic medical record between January 1, 2017 and December 31, 2017. A bacterial STI was defined as a positive test result for gonorrhea, chlamydia, or syphilis. Patients were excluded if they had HIV, were pregnant or a prisoner, or if they were a woman or heterosexual man with a positive test result for chlamydia (not an indication for PrEP per CDC guidelines). Patient demographic, clinical, and visit-specific data were recorded; characteristics were described using frequencies for categorical variables, and median and quartiles for quantitative variables.

**Results.** 205 encounters for bacterial STI were identified as potential opportunities for PrEP. The majority of PrEP candidates presented to the emergency department for their STI (44%), while 40% and 16% of encounters occurred in outpatient and inpatient settings, respectively. The majority of PrEP candidates were not offered PrEP within 6 months of their encounter for STI (86%). Of the 14% of PrEP candidates who were offered PrEP within 6 months of their STI diagnosis, the majority had presented to the outpatient setting for their STI (93%).

**Conclusion.** Visits to the emergency department for bacterial STI represent a disproportionate missed opportunity for PrEP discussion & prescription. Future PrEP expansion efforts should address emergency department visits as opportunities for linkage to PrEP and/or PrEP prescription.

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### 978. Barriers to Recruitment of Latino Men who Have Sex with Men and Transgender Women to Behavioral HIV Seroprevalence Studies

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**Session:** P-46. HIV: Prevention

**Background.** Chicago's HIV epidemic disproportionately affects people of color. Almost a quarter (23%) of these infections occur in Hispanics. It is important to understand sexual behaviors and HIV risk in Latino MSM and transgender women (TGW) to create targeted culturally sensitive harm reduction interventions. However, participation of minority MSM and TGW in survey-based studies is low. The main objective of the study was to understand the sexual health and of Latino MSM and TGW residing in Chicago, Illinois, United States. We herein report subject's attitudes towards participating in the study and qualitative observations about perceived barriers to enrollment of this population.

**Methods.** This study was a cross sectional analysis of a behavioral/HIV seroprevalence survey administered during 2017-2020 to presumed HIV negative, Latino identifying, MSM and TGW individuals. The survey included questions on sexual risk, HIV knowledge and depression scores. We categorized recurrent themes of the most common reasons participants provided for declining to participate in the study. We generated descriptive statistics.

**Results.** A total of 48 community organizations assisted with recruitment. Of 149 participants screened, only 18 (12%) agreed to complete the survey. Among those who declined to complete the survey (n=131), the most common reasons given were: participants were uncomfortable answering some questions (n=59, 45.0%), participant's did not have the time to initiate or complete the survey (n=41, 31.3%) and survey was deemed long (n=16, 12.2%).

We categorized barriers to successful recruitment into the following general themes: 1) Participants were unwilling to discuss their sexual history; 2) Participant's felt uncomfortable taking a rapid oral HIV test; 3) Participant's lacked transportation; and 3) Participants didn't have time to complete the survey or thought it was too long.

**Conclusion.** Despite extensive community networking, we found barriers to recruitment of high-risk Latino MSM and TGW into an HIV seroprevalence study. Further research is needed to better understand and address these barriers, and thus, increase representation of this key population in prevention studies.

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### 979. Disparities in PrEP uptake and adherence among cisgender women using a pharmacologic measure

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**Session:** P-46. HIV: Prevention

**Background.** HIV pre-exposure prophylaxis (PrEP) is 99% effective at preventing new HIV infections if taken daily. To be successful, PrEP requires concurrent efforts to optimize uptake, persistence, and adherence.

In 2018, cisgender (cis) women accounted for 19% of new HIV infections in the US but comprised only 7% of all PrEP users. Studies show poor PrEP adherence amongst cis women, but there is a paucity of real-world clinical data describing PrEP adherence among cis women and gender minority people.

**Methods.** An adherence test that measures the concentration of tenofovir in urine samples using a liquid chromatography mass spectrometry (LC-MS/MS) was used to

assess recent PrEP adherence at 8 clinics. Urine samples were collected during routine visits and analyzed using the LC-MS/MS assay. Test results were retrospectively paired with gender data, when available, and sex assigned at birth (SAAB) data. Adherence data were aggregated and analyzed to assess non-adherence proportions by sub-population.

**Results.** Gender data were available from 1,461 patients at 5 clinics, 1,344 (92%) of whom were cis males (Figure 1).

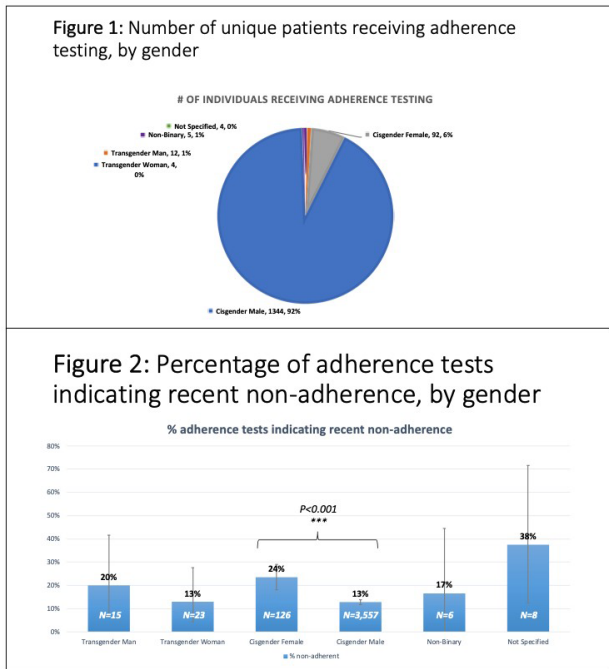
From the 5 clinics where gender and SAAB data were available, 3,835 tests were conducted and 517 (13.5%) indicated non-adherence (Figure 2).

3 additional clinics conduct routine adherence testing and collect SAAB data (gender data not available). At these 8 clinics, SAAB data were available for 2,773 PrEP patients, totaling 5,602 urine tests (Figure 3).

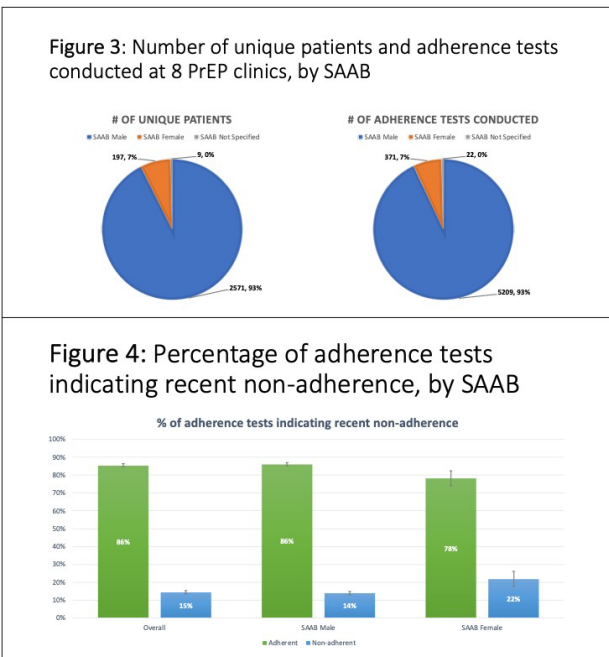
Among these 5,602 adherence tests, 813 (14.5%) indicated non-adherence (Figure 4). SAAB females demonstrated significantly higher non-adherence than SAAB males (22% vs 14%,  $p < 0.001$ ).

Across clinics, 89%-98% of PrEP patients are SAAB male (Figure 5). Within these 8 clinics, SAAB female demonstrated consistently higher non-adherence (17%-44%, vs 12%-17% for SAAB males) (Figure 6).

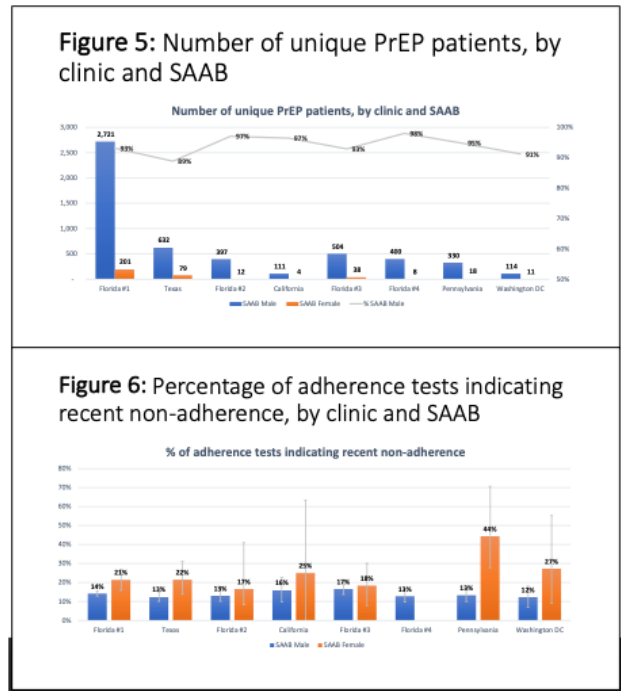
Figures 1 and 2



Figures 3 and 4



Figures 5 and 6



**Conclusion.** Real-world data align with nationwide trends in PrEP utilization and show that the majority of PrEP patients are cis men. When initiated on PrEP, cis women exhibit higher rates of non-adherence than cis men. These data underscore the need to collect gender-identity data to monitor PrEP disparities and suggest that greater efforts are needed to target PrEP access, utilization, and accompanying support services to cis women and gender minority groups.

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### 980. Drexel Medicine Resident Knowledge, Practices and Attitudes Regarding Pre-exposure prophylaxis (PrEP)

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Session: P-46. HIV: Prevention

**Background.** Pre-exposure prophylaxis (PrEP) is a highly effective daily oral antiretroviral medication that was approved by the FDA in 2012 and has been shown to reduce the risk of HIV by 95% in real-world studies. Despite this, many healthcare providers are not offering PrEP to their patients who are at risk for HIV.

**Methods.** We performed a cross-sectional study among Drexel Internal Medicine, Family Medicine, and Obstetrics and Gynecology residents. The survey included questions about experience, knowledge, attitudes toward and barriers to using PrEP. The survey was adapted from previous studies regarding medical providers' attitudes and knowledge about PrEP (Petroll, 2016; Seifman, 2016; Blumenthal, 2105). A Likert 5-point scale was used for attitude and barriers questions.

**Results.** Among 143 participants, 80% specialized in Internal Medicine. 43% of participants were in their first year of training and the mean age (+ SD) was 28.8 + 2. 76% reported never initiating a conversation about PrEP with a patient and only 18% reported ever prescribing PrEP to their patients. 92% reported being very or extremely willing to prescribe PrEP to a male with a current male partner known to be HIV positive. Only 43% of residents reported being moderately likely to prescribe PrEP to a patient coming in for a STI exposure. 68% of residents reported their knowledge about PrEP was a major barrier to prescribing PrEP.

**Conclusion.** We found that most residents have minimal experience with prescribing PrEP, and knowledge was identified as the largest barrier. Additional education and a better understanding of PrEP indications is necessary to ensure eligible PrEP patients have access to this highly effective HIV prevention method.

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### 981. Extended Adherence and Persistence to HIV PrEP in a Multidisciplinary PrEP Clinic

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