Drexel University – Camden AHEC

Report of Study Results

A Collaboration to Expand Sexually Transmitted Infection Screening to Persons Who Inject Drugs in Camden, New Jersey

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A report submitted to community partners

at

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Why Pilot An Outreach Program to Detect Sexually Transmitted Infections among Persons Who Inject Drugs?

STI are an objective measure of inconsistent condom use and belonging to a sexual network where disease transmission is occurring. Further, untreated STI can lead to adverse health outcomes (i.e., pelvic inflammatory disease, low birth weight or pre-term delivery, cancers of the cervix or rectum) and increase the likelihood of acquiring and transmitting HIV infection.[1, 2] In New York City, 1 in 20 MSM diagnosed with syphilis tested positive for HIV within a year.[2] In Uganda and Zimbabwe, women diagnosed with trichomoniasis had a higher likelihood of acquiring HIV within 30 months compared to women without STI.[3] Other studies show similar associations between STI and HIV.[1, 3-7] Thus, among networks with high levels of sexual risk behaviors, STI prevalence may increase HIV transmission.[2]

Pairing STI control with syringe exchange could not only decrease morbidity, by detecting and treating STI, but could also serve to identify priority populations for pre-exposure prophlaxis (PrEP) a new tool in the HIV prevention arsenal. Results of the Bangkok Tenofovir Study showed a 49% reduction in HIV acquisition among persons who inject drugs (PWID) taking once daily tenofovir as PrEP and up to 74% among those with highest adherence.[8] In 2014, the Centers for Disease Control and Prevention (CDC) recommended that PrEP be considered as one of several prevention options for PWID.[9] However, research and programs to bring PrEP to scale have yet to focus on PWID. The high cost of PrEP, up to $10,000 per year, and the potential for the development of drug resistant HIV strains make it unfeasible for public programs to cover all PWID. Thus, research that identifies (1) individuals at highest risk for HIV, (2) the acceptability of PrEP among highest risk individuals, and (3) barriers to uptake are central to the development of HIV prevention interventions that include PrEP.

The goal of this project was to assess the impact of offering expanded STI screening to men and women accessing Camden Area Health Education Center's (AHEC) syringe access program. Specific objectives, or aims, were to:

1. Identify risk factors for STI among PWID in Camden.
2. Estimate prevalence of STI among PWID in Camden.
3. Assess the impact of extra-genital STI testing on case finding.
4. Describe participant preferences for future STI screening.
5. Explore factors impacting PrEP acceptability among PWID in Camden.
6. Estimate PrEP eligibility among PWID in Camden.

Methods

Subjects

Participants were English-speaking PWID accessing syringe exchange services at Camden AHEC who reported: 1) age ≥18 years, 2) injecting illicit drugs in the past

month, 3) engaging in vaginal or anal sex in the past month and 4) were willing and able to provide informed consent.

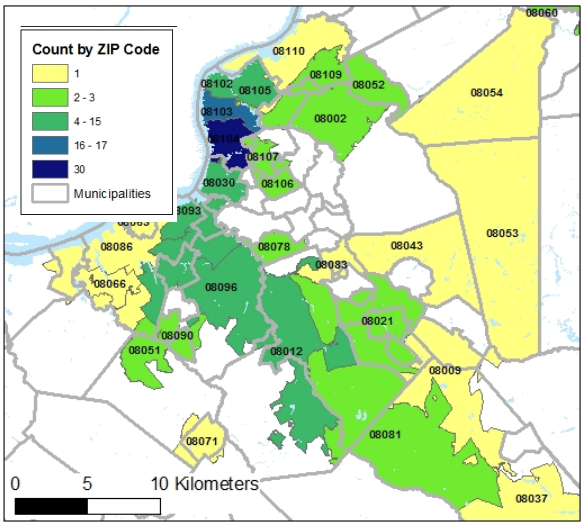
Data Collection Methods and Procedures

Participants completed an anonymous survey on an iPad that assessed factors relating to socio-demographics, mental health status, frequency of alcohol and drug use, drug-related and sexual risk behavior for HIV/STI (i.e., syringe/paraphernalia sharing and condom use), PrEP knowledge, attitudes, and acceptability. After completing the survey, research staff directed participants to the ARCH Nurse who instructed them to obtain first catch urine, oropharyngeal and anorectal swabs for chlamydia (CT) and gonorrhea (GC) screening. Participants then completed a brief exit survey assessing their preferences for future STI screening. Participants received a $20 gift card for completing the survey. Additionally, they were directed to return one week later for their results at which time they received an additional $10 gift card.

Results

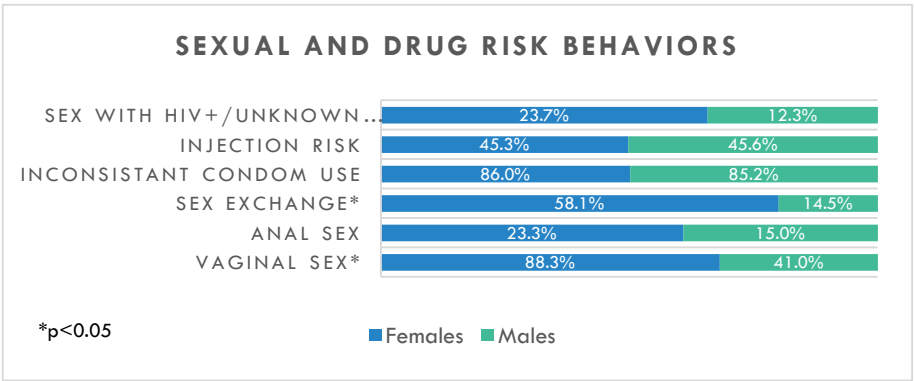
Demographics and Geographic Distribution of Participants

The study population included 138 PWID; 47.1% of which were women. Participant median age was 32 years old (IQR=28,41). Most reported White non-Hispanic race/ethnicity (73.2%), were homeless (75.0%), and had an income below the 2015 federal poverty guidelines of <$11,770 per one person (72.1%). Participants travelled an average of 6 miles – and up to 30 miles – to receive syringe exchange services. While most participants reported zip codes within Camden city, many participants lived in cities and counties contiguous to Camden.



Behavioral Risk Factors

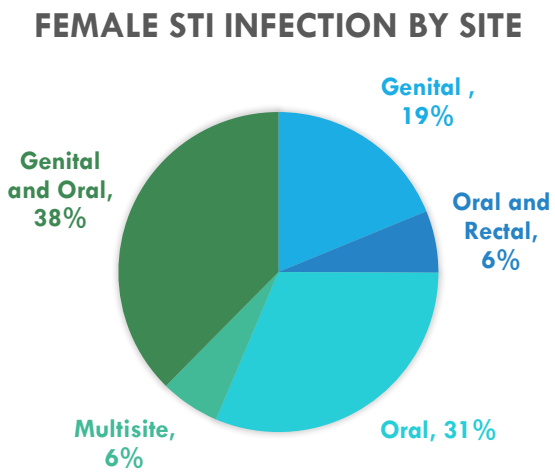
Most (86.9%) participants reported engaging in sexual and drug behaviors associated with STI/HIV. Nearly all of the participants (87.0%) were sexually

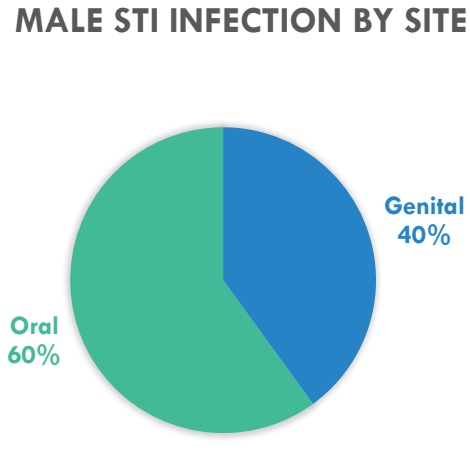


active and reported having sex with a partner of known or unsure positive HIV status (15.6%), syringe sharing (45.5%), inconsistent condom use (85.6%), and sex in exchange for drugs or money (35.1%). Females were statistically more likely than males to have a higher number of sexual partners (median = 5 vs. 2), and report sex exchange (58.1 vs 14.5%; p<0.01).

STI Prevalence

More than one-quarter (26.7%; 16/60) of sexually active females and 8.3% (5/60) of sexually active males screened positive for chlamydia or gonorrhea. Most had multiple infections (either by organism or site). Among females, 37.5% of infections would have been missed if only genital screening was performed. Among males, 60.0% of infections would have been missed if only genital screening was performed.

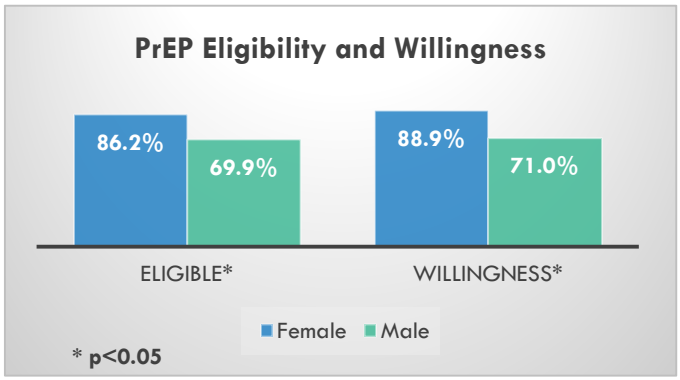




Participant Preferences for Future STI Screening

Nearly all participants (98.3%) reported they would want to get tested for STI in the future. Most (86.6%) preferred to access STI testing at the SAP site as opposed to a traditional STI clinic or doctor's office.

PrEP Eligibility & Willingness to Take PrEP



More than three-quarters of participants (107/138) screened eligible for PrEP using current Centers for Disease Control and Prevention clinical guidelines for PrEP. Eligibility was calculated using a composite score accounting for recent drug and sexual risk behaviors, current and recent STI positivity, and recent drug

treatment (inpatient detox or receiving opioid substitution therapy). Females were significantly more likely to screen eligible for PrEP than males (86.2% vs 51%; p<0.02). Most participants (79.3%) indicated they would be willing to take PrEP, though females were significantly more likely than males to report willingness (88.9% vs 71.0%; p<0.01). Participants also indicated they would take PrEP even if there were mild side effects (68.8%) and that they would be willing to get quarterly HIV screening as part of PrEP care (88.7%). Females were more likely than males to report willingness to tolerate mild side effects (80.5% vs 60.0%; p<.03) and quarterly HIV testing (95.9% vs 82.5%; p<.03). However, participants reported a variety of factors that may adversely impact adherence including: heavy drug dependence (88.4%), homelessness (75.0%), and willingness to give PrEP (45.7%) or sell PrEP (13.8%) to someone perceived to be at higher need for PrEP.

Discussion:

Participants reported a variety of high-risk sexual and drug practices. These behaviors are likely associated with the high burden of infections we detected. One in four females and one in ten males tested, had an STI. Prevalence was equal to or higher than other priority populations for STI control (including MSM[11] and adolescent females[12]). While co-locating STI testing with syringe exchange services resulted in case finding, extra-genital testing increased case finding by 66%, overall and should be incorporated into the standard of care for Camden AHEC's and other STI outreach programs targeting PWID. In this population at high-risk for HIV, PrEP was acceptable and most participants were eligible for PrEP. Additional research is needed to assess whether co-locating PrEP at the SAP site could decrease barriers to uptake in this population.

Recommendations:

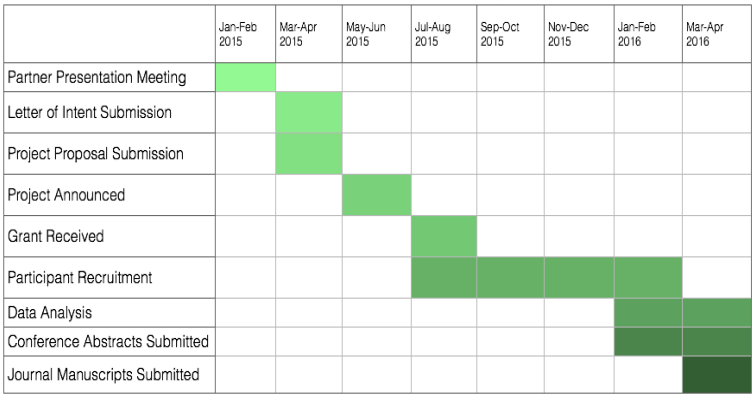
1. Participants travelled up to 30 miles to access syringe exchange services. **Implementation of satellite exchange sites could increase the reach of Camden AHEC's services**. According to findings, communities southwest of the current SAP site may be in need of satellite services.
2. Fifty-seven percent of cases would have been missed without extra-genital screening, therefore **expanded screening should be adopted as the standard of care** to increase case finding, reduce morbidity, and prevent HIV.
3. Females were four-times more likely than males to screen positive for STI and almost eight-times more likely to report transactional sex. As such, **females should be prioritized for STI/HIV prevention interventions** (educational, condom provision, and PrEP) to prevent disease and curb transmission to lower risk populations vis-à -vis their clients.
4. **Additional research is needed to assess factors associated with participant return for STI results to increase utilization of treatment.**

5. Due to high eligibility and acceptability in this sample (especially among females), **PrEP education and referrals to PrEP care should be offered** through the exchange to promote PrEP uptake among highest risk PWID.

Project History & Timeline

This study was implemented as a joint effort of Camden AHEC and faculty and students at the Drexel University Dornsife School of Public Health and the University of Alabama Birmingham School of Medicine. The collaboration began in January 2015, when Mr. Sam Myers and Dr. Alexis Roth met and agreed to work on a project that could further the goals of both. Following further discussion about what exactly was needed by AHEC clients, Mr. Meyers and Dr. Roth presented a poster at Community Driven Research Day, and were selected to receive a pilot grant to fund this collaborative effort. Support for this project was provided by the New Jersey Department of Health, Division of HIV/AIDS, TB and STD Services via the ARCH program including the nurse, testing, and treatment and well as Community Driven Research Day; a joint effort of Drexel University, the University of Pennsylvania, Temple University and The Children's Hospital of Philadelphia.

Camden AHEC - Drexel Partnership Timeline



Team

Team members included: Assistant Professor at Drexel's School of Public Health, Principal Investigator **Dr. Alexis Roth**. Her work includes 23 peer-reviewed publications; the majority assessed mechanisms for increasing uptake of STI screening services among high-risk populations. **Dr. Barbara Van Der Pol**, is a STI diagnostics expert and behavioral epidemiologist at University of Alabama Birmingham with over 30 years of research experience. **Dr. Seth Wells**, Professor in the Department of Biostatistics and Epidemiology at Drexel, who studies psychosocial risk for HIV infection and STI among sexual minority adults and adolescents. **Ms. Martha Chavis, MA**, Executive Director of Camden AHEC (Co-Principal Investigator) who has over 30 years of experience working in the field of HIV/AIDS education and prevention. **Mr. Sam Myers, MA**, HIV Services Team Leader since 2013. **Ms. Ruth Williams, RN,** ARCH Nurse from 2012-2016. Research Assistants were **Brenna Aumaier, MPH CPH** and **Jesse Goldshear MPH,** both 2nd year Master of Public Health students who worked to help design and implement the study as well as manage various other research

assistants, as well as **Marisa Fleisher MPH, Samantha Richardson, Stephanie Simmons** and **Tiana Robb** who assisted with participant recruitment and data collection.

Team accomplishments

AM Roth, JL Goldshear, AP Martinez-Donate, S Welles, M Chavis, & B Van Der Pol. Reducing Missed Opportunities: Pairing STI Screening with Syringe Exchange Services. (Under Review).

Roth AM, Aumaier BL, Szep Z, Martinez-Donate AP, Chavis M, Welles S,Van Der Pol,B. Prepping for PrEP: Applying a PrEP Continuum of Care for Persons Who Inject Drugs. (In Progress)

Goldshear JL, Van Der Pol B, Wells S, Martinez-Donate AP, Williams R, Roth AM. Prevalence and Correlates of Chlamydia and Gonorrhea among Persons Who Inject Drugs in Camden, New Jersey. Poster Presentation at: Building HIV Research Collaborations in Philadelphia conference; January 2016; Philadelphia, PA.

Aumaier BL, Szep Z, Martinez-Donate AP, Chavis M, Welles S, Roth AM. Acceptability of pre-exposure prophylaxis (PrEP) among persons who inject drugs. Poster Presentation at: Building HIV Research Collaborations in Philadelphia conference; January 2016; Philadelphia, PA.

Goldshear JL, Van Der Pol B, Wells S, Martinez-Donate AP, Williams R, Roth AM. Prevalence and Correlates of Chlamydia and Gonorrhea among Persons Who Inject Drugs in Camden, New Jersey. Poster Presentation at: College of Physicians of Philadelphia 2016 Student Public Health Poster Session conference; May 2016; Philadelphia, PA. *Presentation won an award for exemplary student research (of 3 awards given).

Aumaier BL, Szep Z, Martinez-Donate AP, Chavis M, Welles S, Roth AM. Acceptability of pre-exposure prophylaxis (PrEP) among persons who inject drugs. Poster Presentation at: College of Physicians of Philadelphia 2016 Student Public Health Poster Session conference; May 2016; Philadelphia, PA. *Presentation won an award for exemplary student research (of 3 awards given).

Abstracts under review for the American Public Health Association Conference (November 2016, Denver), CDC STD Conference (September 2016, Atlanta) Harm Reduction Conference (November 2016, San Diego).

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References

1. Marx, G.E., R. Bhatia, and C.A. Rietmeijer, *An Opportunity Too Good to Miss: Implementing Human Immunodeficiency Virus Preexposure Prophylaxis in Sexually Transmitted Diseases Clinics.* Sexually transmitted diseases, 2016. **43**(4): p. 266-267.
2. Pathela, P., et al., *The High Risk of an HIV Diagnosis Following a Diagnosis of Syphilis: A Population-level Analysis of New York City Men.* Clinical Infectious Diseases, 2015. **61**(2): p. 281-287.
3. Van Der Pol, B., et al., *Trichomonas vaginalis infection and human immunodeficiency virus acquisition in African women.* J Infect Dis, 2008. **197**(4): p. 548-54.
4. Laga, M., et al., *Non-ulcerative sexually transmitted diseases as risk factors for HIV-1 transmission in women: results from a cohort study.* AIDS, 1993. **7**(1): p. 95-102.
5. Fleming, D.T. and J.N. Wasserheit, *From epidemiological synergy to public health policy and practice: the contribution of other sexually transmitted diseases to sexual transmission of HIV infection.* Sexually Transmitted Infections, 1999. **75**(1): p. 3-17.
6. Bernstein, K.T., et al., *Rectal gonorrhea and chlamydia reinfection is associated with increased risk of HIV seroconversion.* J Acquir Immune Defic Syndr, 2010. **53**(4): p. 537-43.
7. Zetola, N.M., et al., *Exploring the relationship between sexually transmitted diseases and HIV acquisition by using different study designs.* J Acquir Immune Defic Syndr, 2009. **50**(5): p. 546-51.
8. Choopanya, K., et al., *Antiretroviral prophylaxis for HIV infection in injecting drug users in Bangkok, Thailand (the Bangkok Tenofovir Study): a randomised, double-blind, placebo-controlled phase 3 trial.* The Lancet. **381**(9883): p. 2083-2090.
9. Centers for Disease Control and Prevention. Sexually Transmitted Diseases Treatment Guidelines, M.N.R.-.-. *Update to Interim Guidance for Preexposure Prophylaxis (PrEP) for the Prevention of HIV Infection: PrEP for Injecting Drug Users.* MMWR 2010;, 2013. **62**(23): p. 463-465.
10. *Camden, NJ.* 2010 April 9, 2015]; Available from: http://www.usa.com/camden-nj.htm.
11. Kent, C. K., Chaw, J. K., Wong, W., Liska, S., Gibson, S., Hubbard, G., & Klausner, J. D. (2005). Prevalence of rectal, urethral, and pharyngeal chlamydia and gonorrhea detected in 2 clinical settings among men who have sex with men: San Francisco, California, 2003. *Clinical Infectious Diseases*, *41*(1), 67-74.
12. Forhan, S. E., Gottlieb, S. L., Sternberg, M. R., Xu, F., Datta, S. D., McQuillan, G. M., ... & Markowitz, L. E. (2009). Prevalence of sexually transmitted infections among female adolescents aged 14 to 19 in the United States. *Pediatrics*, *124*(6), 1505-1512.