

proportion of ZIKV cases due to sexual transmission: 0.03 (95% CI: 0.001–0.46) and 0.23 (0.01–0.47). One publication about possible sexual transmission of West Nile virus has been identified so far.

**Conclusion** Sexual transmission of ZIKV can occur but is likely not sufficient to sustain an epidemic. In high risk groups with frequent sexual partner change, it might contribute more to secondary transmission. We are tracking this fast-moving research field in a living systematic review to fill gaps in the evidence about the risks and prevention of sexual transmission of flaviviruses.

## Oral Presentation Session 15

### STI/HIV Testing and Management

#### 015.1 EXAMINING THE ROLE OF LOCATION IN STI PREVENTION AMONG MEN WHO HAVE SEX WITH MEN USING MOBILE APPLICATIONS

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**Introduction** Due to the disproportionate impact of HIV on men who have sex with men (MSM), public health messaging encourages routine STI and HIV screening among this population. While STI testing services are often situated within high prevalence areas, providing accurate population estimates of MSM, and their subsequent movements, remains limited. This study sought to explore the relationship between STI clinic locations and operating hours and real time locations of MSM using mobile applications.

**Methods** Using global positioning system (GPS) coordinates, location data were collected over a 7 day period from MSM in a mid sized US city who used a mobile phone application for the purpose of engaging in social and sexual interactions with other men. Data points were collected hourly for all men online, including their GPS position and self reported profile demographics (i.e. race/ethnicity and age). Aggregated data points were plotted onto a map of the city along with the position of Health Department STI testing locations.

**Results** Data were collected from a total 5083 individual men. Young men accounted for nearly half of all participants, with 45.4% indicating they were between the ages of 18–24% and 54.6% being 25 years of age or older. Ethnicities included Latino (49.1%), white (30.4%), African American (6.4%), and Other (14.1%). During a 24 hour period 85.3% of all online activity occurred between 7pm and 7am, with 8pm being the hour of the day in which the most people were online (22.9%). The median distance between an individual and a STI clinic was 3.8 miles. Latino and African American men and those under the age of 25 were significantly more likely to be farther away from STI testing services than men who were White or older ( $p < 0.05$ )

**Conclusion** Findings highlight location differences among MSM based on age and race, and suggest the need to further explore how these differences influence MSM sexual health. Additional examination of the integration of real time GPS data into STI prevention programming is warranted.

#### 015.2 FINDINGS FROM THE NATIONAL ONLINE HIV SELF-SAMPLING SERVICE IN ENGLAND: A NATION-WIDE JOINED APPROACH TO INCREASE HIV TESTING ACCESS AMONG MOST AT-RISK POPULATIONS

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**Introduction** Higher effectiveness in HIV testing programmes is needed in order to achieve the WHO target of diagnosing 90% of people living with HIV. Based on the success of two national pilots, Public Health England (PHE), with support of Local Authorities, launched a nation-wide HIV self-sampling service for most at-risk populations for HIV acquisition in November 2015. The service delivers reactive results through a community organisation that provides emotional support while linking individuals into the clinical pathway for confirmatory testing and care. Self-sampling is distinct from self-testing in which the individual performs the test themselves and receives the results there and then. The aim of this analysis was to determine who is accessing the service and whether it reached most at-risk groups (including MSM and Black African communities) and first-time testers.

**Methods** Disaggregated anonymised data was collected from all service users requesting a HIV self-sampling kit from the national service ([www.freetesting.hiv](http://www.freetesting.hiv)). Data included ethnicity, gender, sexual orientation, local authority residency, and HIV testing information from 28 657 service users between 11 November 2015 and 31 December 2016.

**Results** During this time period there were 55 726 kits ordered of which 52.5% ( $n=29,233$ ) were returned. 28 657 kits were tested with a 1.1% reactive rate ( $n=311$ ); 67% ( $n=19079$ ) of users returning their kits, reported never testing or testing over a year ago. 74% of kits tested were from MSM ( $n=21,309$ ) with 1.4% reactive rate ( $n=291$ ) of kits tested by heterosexuals ( $n=6,689$ ), 50% ( $n=3316$ ) were from ethnic minority communities showing a reactivity rate of 1.3% ( $n=43$ ).

**Conclusions** The service has been successful at engaging most at-risk populations for HIV acquisition. Service users in their majority were different from those attending clinical settings as reported in the high numbers of first time testers and those not testing regularly. A joined commissioning model allowed for a cost-efficient service that increases access to testing for those in higher need.

#### 015.3 COST-EFFECTIVENESS OF ANTIMICROBIAL RESISTANCE POINT-OF-CARE TESTING FOR OPTIMISING THE TREATMENT OF GONORRHOEA

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**Introduction** Antimicrobial resistance (AMR) threatens successful *Neisseria gonorrhoeae* (NG) treatment and WHO recommends specific NG treatments be used only if  $\leq 5\%$  circulating strains are resistant to them. Ceftriaxone plus azithromycin dual therapy, currently recommended, has few practical alternatives should ceftriaxone resistance become widespread, and azithromycin use is undermined also by AMR emergence.

Point-of-care tests for AMR (POCTR) at NG diagnosis may enable a significant proportion of NG infections to be successfully treated using previously abandoned regimens, thereby sparing ceftriaxone use. We assess cost-effectiveness of British standard of care (SC) *vs* hypothetically accurate POCTR strategies used to either optimise dual therapy or allow monotherapy in patients diagnosed with NG.

**Methods** A decision tree was constructed to simulate a hypothetical cohort of 38,870 NG-diagnosed GUM clinic attendees, representing 2015 annual numbers in England. Costs of AMR testing, NG treatment and return attendances were considered for SC and dual therapy optimisation strategies: A) POCTR for ciprofloxacin only; B) POCTR for azithromycin followed by POCTR for ciprofloxacin; C) POCTR for ciprofloxacin followed by POCTR for azithromycin; and monotherapy POCTR strategies for: D) azithromycin; E) ciprofloxacin; F) amoxicillin/probenecid.

**Results** Total costs for all POCTR strategies were more expensive than SC. Strategy B (where azithromycin-ceftriaxone remains largely first-line) was most cost-effective for avoiding sub-optimal treatments, costing £4532 per optimal treatment gained. Strategy D was most cost-effective for ceftriaxone use avoidance (98% decrease [713 *vs* 38 870] compared to SC), costing £16.27 per ceftriaxone-sparing treatment gained, but resulting in 7 treatment failures (*vs* 0 in SC) due to false AMR POCTR results.

**Conclusion** Specific POCTR strategies enable optimal treatment and ceftriaxone use avoidance, thus promoting antibiotic stewardship. The public health impact of sparing ceftriaxone whilst increasing treatment failures must be investigated.

#### 015.4 INVESTIGATING SELECTION BIAS: CROSS-SAMPLE COMPARISON OF GAY AND BISEXUAL MEN CONCURRENTLY RECRUITED FROM AN STI CLINIC, SEX-SEEKING APPS, AND A PRIDE EVENT IN BRITISH COLUMBIA, CANADA

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**Introduction** Most research on the sexual health of gay, bisexual, and other men who have sex with men (MSM) relies upon convenience samples, which may not fully represent the MSM population. To investigate this form of selection bias, we concurrently sampled MSM from three distinct venue types, compared sociodemographic, behavioural, and STI testing characteristics across samples, and characterised the degree of overlap between them.

**Methods** MSM 18+ years of age from British Columbia, Canada completed an anonymous survey during July-December 2016. Participants were recruited from: mobile sex-seeking apps (n=662); a MSM-branded STI clinic (n=303); and in-person at the Vancouver Pride Festival (n=307). Cross-sample comparisons with >10% relative difference and  $p < 0.05$  are shown. Sample overlap was measured by self-reported use of other recruitment venue types.

**Results** MSM recruited from apps included more bisexual men (24%) than those recruited from the clinic (9%) or from Pride (7%), while MSM recruited from the clinic included more East Asian and Latino men (14% and 13%, respectively, *vs.* 13% and 6% from Pride, and *vs.* 5% and 3% recruited from apps). More 18–29 year-olds were recruited from the clinic (47%, *vs.* 29% Pride, 16% apps). A larger proportion of MSM recruited from apps reported >10 sex partners in the past year (35%, *vs.* 28% clinic, 21% Pride). Finally, more clinic participants tested for STI/HIV in the past year (82%) as compared with participants recruited from apps (75%) or Pride (73%). When asked which other venues they frequented, 19% of the total sample reported using all 3 recruitment venue types, while 11% of Pride participants, 7% of apps participants, and 4% of clinic participants reported only using the recruitment venue where sampled.

**Conclusion** We found large differences between MSM sampled from apps, an STI clinic, and Pride, with 22% unlikely to be sampled if relying on a single venue type for recruitment. Our results underscore the importance of multiple sampling strategies in MSM research and provide specific cross-sample differences.

#### 015.5 AWARENESS AND INTEREST IN PRE-EXPOSURE PROPHYLAXIS (PREP) AMONG YOUNG MEN ATTENDING A PUBLIC SEXUALLY TRANSMITTED DISEASES (STD) CLINIC IN A HIGH PREVALENCE URBAN SETTING

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**Introduction** Young men who have sex with men (YMSM), especially African Americans, are disproportionately affected by HIV. Pre-Exposure Prophylaxis (PrEP) is a highly effective intervention that could help prevent new HIV infections among YMSM. We assessed awareness and interest in PrEP among young men receiving care at the Baltimore City Health Department (BCHD) Sexually Transmitted Diseases (STD) Clinics.

**Methods** We surveyed a convenience sample of 252 men ages 18–24 who attended BCHD clinics between 4/12/2016 and 10/3/2016. Participants were provided a self-administered survey that assessed awareness and interest in PrEP. Univariate and multivariable logistic regression analysis examined predictors of awareness and interest. Data collection will continue in 2017 to determine if awareness and interest change over time.

**Results** Mean age of participants was 21.5 (SD=1.98) and the majority (93.7%) self-identified as African American. Thirty-three participants (13.1%) reported sex with other men. Among all participants, 19.4% were aware of PrEP, but 44.4% were interested in learning more about PrEP. Among YMSM, 72.7% were aware of PrEP, 63.6% were interested in learning more about PrEP, and 9.1% reported current PrEP use. None of the young men who did not report prior sex with men reported current PrEP use. In multivariable analysis adjusting for race, YMSM were more likely to be aware (AOR=19.9,  $p < 0.001$ ) and interested in PrEP (AOR=2.5,  $p = 0.023$ ) than young men who did not report sex with other men. Among YMSM, 37.5% reported learning about PrEP from healthcare