

adversely affect home-based male partner HIV testing during pregnancy among 260 men, as HIV test uptake was 96% before (of 180), 95% after (of 80) syphilis test introduction, and remained 2-times greater than clinic-based HIV testing alone within the RCT (39%). Finally, men intended to seek clinic treatment if they received a positive test result during pregnancy and postpartum (94% and 95%, respectively).

Conclusion Men were likely to accept both syphilis and HIV tests when offered at home without adversely affecting HIV testing approaches. POC diagnostics can work well outside facilities and increase testing of male partners who rarely accompany women to antenatal clinics.

P3.107 RATES OF PRIMARY AND SECONDARY SYPHILIS BY STATE AND RACE/ETHNICITY AMONG MEN WHO HAVE SEX WITH MEN: UNITED STATES, 2014

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Introduction Men who have sex with men (MSM) accounted for 61.1% of reported primary and secondary (P and S) syphilis cases in the United States in 2014. Of P and S syphilis cases among MSM with known race/ethnicity, 94.7% were either White (40.3%), Black (32.2%), or Hispanic (22.2%). To examine rates of P and S syphilis among racial/ethnic categories of MSM, national and state-level estimates of the number of MSM of each race/ethnicity are needed.

Methods We calculated race/ethnicity-specific rates of P and S syphilis among adult MSM (age ≥ 18) in 49 states that reported sex of partners and race/ethnicity for syphilis cases in 2014. Case counts of P and S syphilis were from national case report data, which are submitted from states to CDC. For rate denominators, we amended our previously published method to produce stratified estimates and 95% confidence intervals (CI) for seven racial/ethnic groups: Hispanic MSM of any race and non-Hispanic MSM who were White; Black; American Indian; Asian; Pacific Islander; or multiple races.

Results The rate of reported P and S syphilis among MSM in the US was 255.4 (95% CI: 229.1–284.7) per 1 00 000 in 2014. The rates of P and S syphilis per 1 00 000 among the three racial/ethnic groups most represented among MSM cases were 170.0 (151.1–191.0) for White MSM, 286.4 (250.1–329.5) for Hispanic MSM, and 604.3 (525.0–700.8) for Black MSM, the highest of all racial/ethnic groups. Asian MSM had the lowest rate at 106.9 (91.4–125.4) per 1 00 000. Comparing the 3 most-represented racial/ethnic groups, the rate was highest among Black MSM in 37 states, Hispanic MSM in 7 states, and White MSM in 5 states. Of states with ≥ 100 cases among Black MSM, South Carolina had the highest rate at 1,398.1 (941.6–2,119.0) per 1 00 000.

Conclusion These are the first race/ethnicity-specific estimates of P and S syphilis rates among MSM for states with reported sexual behaviour of cases. Although more cases of P and S syphilis were reported among White MSM in 2014, the rate among Black MSM was higher than White or Hispanic MSM in most states and was over 3.5 times that of White MSM in the US.

P3.108 ANTIRETROVIRAL THERAPY USE DURING PREGNANCY AND ADVERSE BIRTH OUTCOMES AMONG HIV-INFECTED WOMEN IN LOW AND MIDDLE-INCOME COUNTRIES: A SYSTEMATIC REVIEW

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Introduction Children born to HIV-infected women are at increased risk for adverse birth outcomes including preterm birth (PTB) and low birthweight (LBW). While antiretroviral therapy (ART) during pregnancy drastically reduces risk of vertical HIV transmission, LBW and PTB among HIV-exposed infants remains elevated. Exposure to certain ART regimens *in utero* may increase risk of adverse birth outcomes, in particular protease inhibitor (PI)-based regimens. Given the high burden of LBW and PTB in low- and middle-income countries, and efforts to increase ART use by HIV-infected pregnant women, it is critical to understand the precise effects of ART on adverse birth outcomes.

Methods We conducted a systematic review of the effects of different ART regimens used during pregnancy on LBW or PTB in low and middle income-countries. We searched electronic databases Medline, COCHRANE, Web of Science and SCOPUS, and CPCIS for relevant papers published on or before 10 April 2016.

Results Our final review included 19 studies and assessed many ART regimens. Results were often heterogeneous. We observed no clear pattern for the effect of PI-based highly active antiretroviral therapy (HAART) on PTB compared to no therapy, or compared to non-PI-based HAART. We similarly saw no clear trends for the effect of non PI-based HAART on LBW compared to no therapy. In contrast, PI-based HAART was generally protective against LBW when compared to non-PI-based HAART and no therapy, and non PI-based HAART was generally associated with an increased risk of LBW when compared to monotherapy. Results were similar in unadjusted studies and those that controlled for maternal disease severity and other confounders.

Conclusion There is a wide array of ART regimens used by HIV-positive pregnant women in low- and middle-income countries, as well as the heterogeneity of results related to the adverse birth outcomes of PTB and LBW. Nonetheless, we found that PI-based HAART was generally protective against LBW when compared to non-PI-based HAART.

P3.109 POINT-OF-CARE TESTING FOR SEXUALLY TRANSMITTED INFECTIONS IN HIV PREVENTION TRIALS

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Introduction Accurate HIV risk assessment is essential when screening volunteers for HIV prevention studies. STI testing plays a key role, but has traditionally been conducted in central laboratories resulting in reporting delays, which can impact on screening and enrolment decisions, and on participant care during follow-up. Here, we outline the

implementation of a 2 hour point-of-care (POC) STI care model for clinical trial participants.

Methods As part of a Phase I/IIa vaccine study, CAPRISA implemented POC STI testing for chlamydia, gonorrhoea (Xpert CT/NG, 90 min) and trichomonas (OSOM, 15 min) at a site laboratory of a research clinic in Durban, South Africa, in July 2015. Since then, the POC model has been adopted by 5 other prevention studies, becoming the main STI testing model at CAPRISA.

Results A total of 1426 Xpert CT/NG assays were run on two 4-module Genexpert machines between July 2015 and November 2016. Chlamydia was detected in 206 (14.4%), gonorrhoea in 79 (5.5%) samples, and 52 (3.6%) samples showed both infections. No infection was detected in 1070 (75.0%) samples. 143 (8.6%) samples showed either an error message (5.0%), an invalid result (3.0%) or no result (0.6%) requiring repeat testing, either on the same or next convenient visit. Trichomonas testing was conducted simultaneously on all female participants (n=1093, prevalence 2.7%). Gram staining to diagnose bacterial vaginosis and candida infection was performed on-site in one of the studies. Implementation of this model allowed early detection of screen failures for Phase I/IIa vaccine studies. During follow-up, participants with STIs received enhanced risk reduction counselling and immediate treatment on the day of sample collection. This resulted in improved care, early partner notification, and cost-savings by avoiding unnecessary screening procedures and repeat visits.

Conclusion A 2 hour POC STI testing model can streamline screening and follow-up of participants in HIV prevention studies, and should be considered for implementation by other research sites.

Support: *Cepheid loaned two 4-module Genexpert machines to the study team free-of-charge, but did not contribute to the preparation of this abstract*

P3.110 HOW SHOULD WE MONITOR CHLAMYDIA CONTROL PROGRAMME EFFECTIVENESS? COMPARING PERFORMANCE INDICATORS USING EVIDENCE SYNTHESIS TO ESTIMATE LOCAL INCIDENCE AND PREVALENCE FROM SURVEILLANCE DATA

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Introduction Understanding patterns of chlamydia incidence and prevalence is important for addressing inequalities, planning cost-effective control programmes and defining performance indicators. Population-based surveys are costly; the best data for England come from the Natsal surveys which are only available once per decade, and are nationally representative but not powered to compare localities. Estimates at finer spatial and temporal scales are required.

Methods We present a method for estimating local incidence and prevalence by modelling the infection, testing and treatment processes. Parameters describing natural history and treatment-seeking behaviour are informed by the literature or calibrated using national prevalence estimates. By combining them with local-level surveillance data on numbers of chlamydia tests and diagnoses in England, we estimate local screening rates, incidence and prevalence.

Results There is substantial local-level variation in infection burden. Highest infection rates are in the most-deprived

areas – but deprivation is a poor predictor of prevalence, with large variation within each deprivation quintile. Importantly, positivity is not a reliable proxy for prevalence. Most localities that meet the current performance target of 2300 annual diagnoses per 1 00 000 population have higher incidence and prevalence than most that do not, and the target may be unrealistic for many localities.

Conclusion Our approach provides local estimates of chlamydia incidence and prevalence from surveillance data, which can be used to inform analysis of local variation and assess local control programmes. Many localities are unlikely to be able to meet the current annual diagnosis rate target, and successful prevention interventions like condom promotion make the target harder to reach. A better performance indicator could be the proportion of incident infections that are treated, as estimated by our model, since a higher value is always better for public health and other prevention activities make a higher value easier to achieve.

P3.111 OPTIMISING STI SCREENING IN HIV-INFECTED MEN WHO HAVE SEX WITH MEN (MSM)

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Introduction Current CDC guidelines recommend screening “at least annually” for *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (GC) at sites of exposure using nucleic acid amplification tests (NAAT) in HIV-infected MSM. National screening rates remain suboptimal in this high-risk population, particularly at extra-genital sites.

Methods We enrolled HIV-infected MSM from a routine care visit at the 1917 HIV clinic in Birmingham, Alabama. Inclusion criteria included age >18, receptive anal intercourse in the past 30 days and lack of antibiotic exposure. Participants provided four self-collected rectal swabs and a urine sample. A pharyngeal sample was provider-collected. Samples from the rectal and genital sites were run on four testing platforms with the composite infection standard (≥ 2 NAAT positive) defining a positive result. Pharyngeal samples were run on two platforms and the patient infection standard (2 NAAT positive) was used to define positivity.

Results A total of 175 unique HIV-infected MSM were enrolled between December 2014 and November 2016. Overall, 34 men (19.4%) had CT or GC infection detected. CT infection rates by site were: 13.1% rectal, 3.4% urogenital, 0% pharyngeal. GC infection rates by site were: 8.6% rectal, 3.4% urogenital and 2.3% pharyngeal. In addition, 5.7% of men had co-infection with CT and GC at the rectal site and 1.7% had simultaneous CT or GC infection at genital and rectal sites. Most infections (79.4%) would have been missed by genital screening alone.

Conclusion Sexually active, HIV-infected MSM in Birmingham, Alabama have high prevalence rates of CT and GC infection, particularly at the rectal site. This has public health implications since CT/GC coinfection may increase HIV transmission rates. Clinics that provide care for HIV-infected MSM should streamline extragenital testing; this may include the incorporation of patient-collected rectal swabs into routine care.