

Incidence trends and inequalities among GBMSM have not been described across multiple jurisdictions.

Methods A random sample of reported gonorrhoea cases was interviewed and weighted to estimate GBMSM status of all cases reported in 12 geographically disparate states and/or cities collaborating in SSuN. Census and Gallup opinion polling data were used to estimate size of GBMSM, heterosexual male and female populations by age group at the state, county and city level for 2010–2013. Incidence rates and rate-ratios were calculated comparing incidence trends among GBMSM, heterosexual males and females.

Results The estimated size of GBMSM population varied across SSuN jurisdictions from 2.8% of males in Alabama to 15.4% in San Francisco. The proportion of male gonorrhoea cases attributable to GBMSM also varied by jurisdiction (range: 13.6% to 92.4%). GBMSM incidence increased in SSuN sites from 1,169.7 cases per 100,000 in 2010 to 1,474.4 in 2013, increased modestly among heterosexual men and remained stable among females at 106 cases per 100,000. The rate-ratio of GBMSM to females and to heterosexual men during the study period ranged from 10.7 to 13.9. The highest incidence among GBMSM across all sites was observed for those aged 25–29 years with estimated annual incidence exceeding 3,400 cases per 100,000 across the study period.

Conclusion Gonorrhoea incidence among GBMSM is increasing in a sentinel network of US jurisdictions. Estimates of the size of this population and ascertainment of GBMSM status for reported cases are essential first steps for better understanding the changing epidemiology of gonorrhoea.

Disclosure of interest statement The STD Surveillance Network (SSuN) is funded by the US Centres for Disease Control and Prevention (CDC). No pharmaceutical grants were received in the development of this study.

P11.17 INTENSIFICATION OF A SHIGELLOSIS EPIDEMIC ASSOCIATED WITH SEXUAL TRANSMISSION BETWEEN MEN: DIAGNOSES OF *SHIGELLA FLEXNERI* AND *S. SONNEI* IN ENGLAND, 2004 TO 2015

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Introduction Although Shigellosis is often associated with travel to high incidence regions, outbreaks of *Shigella flexneri* and *S. sonnei* associated with sexual transmission between men have been reported in the UK, Australia and elsewhere. We examined national trends in Shigella spp. diagnoses to explore the evidence for on-going sexual transmission of *S. flexneri* 3a and transmission of other Shigella serotypes or species between men in England.

Methods Local hospital laboratories submit presumptive strains of Shigella spp. to the Public Health England national reference laboratory for confirmation and typing. We report trends in diagnoses in men and women aged 16 to 60 years old, excluding cases with recent travel outside the UK.

Results Between January 2004 and February 2015, 53% (5,051/9,534) of Shigella spp. diagnoses made in England were not travel-associated, and diagnoses of *S. flexneri* 3a, *S. flexneri* 2a, and *S. sonnei* accounted for 78% of these cases. *S. flexneri* 3a

diagnoses in men increased steadily from 2004 (3 cases) and peaked in 2013 (154 cases). Diagnoses of *S. flexneri* 2a in men followed a similar pattern, although increases emerged later, rising from 9 cases in 2004 to 220 cases in 2014. In 2010, diagnoses of *S. sonnei* in men began to exceed those in women (147 compared to 133 cases), and have since risen steadily in men (267 cases in 2014). Diagnoses in women remained low/stable throughout the study period, and the male to female gender ratios increased substantially, peaking in 2014 at 59:1, 17:1 and 3:1 for *S. flexneri* 3a, *S. flexneri* 2a, and *S. sonnei*.

Conclusion Surveillance data suggest an intensification of the shigellosis epidemic associated with sex between men in England. The timing and heterogeneity in species and serotypes implies separate introductions into the population. These data raise the possibility of new shigellosis outbreaks occurring elsewhere.

Disclosure of interest statement No pharmaceutical grants were received in the development of this study.

P11.18 RELATIONSHIP BETWEEN ANAL SEX BEHAVIOURS AND INCIDENT SYPHILIS INFECTION AMONG MSM AND TRANSGENDER WOMEN FROM TWO CLINICS IN LIMA PERU

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Background Cross-sectional studies have shown an independent association between receptive anal sex and active syphilis among men who have sex with men (MSM) and transgender women (TW). This study sought to evaluate the relationship between role in anal sex and incident syphilis in a cohort of MSM/TW in Lima, Peru.

Methods We are conducting an observational cohort study of MSM/TW recruited from two STI clinics. In quarterly follow-up visits, participants provide behavioural data, and serologic testing is performed for HIV and syphilis. Participants' roles in anal sex reported at baseline were categorised as insertive, receptive or versatile. Participants with active syphilis (i.e. RPR titer $\geq 1/16$ and TPPA $\geq 1:80$) were treated according to CDC guidelines. We evaluated the relationship between anal sex role and incident syphilis with a multivariate logistic regression model using generalised estimating equations for longitudinal data.

Results At baseline, among the 401 participants, mean age was 31.6 years (SD 9.6); when asked about their role in anal sex, 32%, 46% and 22% reported being receptive, versatile and insertive, respectively. Prevalence of active syphilis was 22% at baseline; incidence was 18% and 23% at the third and sixth follow-up visits, respectively. In multivariate analysis, after controlling for age, education, employment, income, gender identity, number of sexual partners, alcohol/drug use, unprotected sex, and HIV, the odds for incident syphilis were higher among people who had defined their anal sex role as receptive (aOR = 2.48 (95% CI 1.23–5.02)) or versatile (aOR = 2.38 (95% CI 1.27–4.47)) as compared to the insertive role.

Conclusions MSM/TW who defined their role in anal sex as receptive or versatile showed a significantly higher syphilis incidence in this longitudinal analysis. Further research is needed to

assess whether this association can be explained by behavioural/sexual networking patterns, the existence of a biological substrate, or both.

Disclosure of interest statement All authors declare no conflicts of interest.

P11.19 **SYPHILIS INCIDENCE AND ASSOCIATED RISK FACTORS AMONG MEN WHO HAVE SEX WITH MEN IN BANGKOK, THAILAND, 2006–2015**

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Introduction Syphilis infection has been increasing among men who have sex with men (MSM) in Thailand. We assessed syphilis incidence and associated risk factors in the Bangkok MSM Cohort Study (BMCS).

Methods We enrolled Thai MSM age ≥ 18 years old in the BMCS from April 2006 to January 2008 (Period1) and September 2009 to December 2010 (Period2), and followed participants every 4 months for up to 60 months. *Treponema pallidum* (TP) screening was performed at enrollment, annually and at any unscheduled study visits if indicated, using the rapid plasma reagin (RPR). If the RPR was reactive, we confirmed with a TP-specific antibody test. We defined incident syphilis as a RPR titer $\geq 1:8$ and a reactive treponemal test. We calculated risk factors for incident syphilis in all participants using a Cox proportional hazard model, adjusting for baseline demographic and behavioural characteristics, and prevalent HIV infection.

Results Among 1,502 participants who had no syphilis at baseline and had more than one follow-up visit, 54.7% reported unprotected anal intercourse (UAI). The overall syphilis incidence was 2.7 (95% CI 2.3–3.1) per 100 person-years (/100PY). There was a significant difference in syphilis incidence in the two periods (2.5/100PY in Period1 vs. 3.3/100PY in Period2, $p = 0.003$). Factors independently associated with incident syphilis were enrollment in Period2 (Adjusted HR [AHR] 1.7; 95% CI 1.2–2.4), UAI (AHR 1.4; 95% CI 1.0–2.0), amyl nitrate use (AHR 1.9; 95% CI 1.2–2.8), Viagra use (AHR 1.6; 95% CI 1.1–2.5), and prevalent HIV infection (AHR 2.3; 95% CI 1.6–3.1).

Conclusion In the BMCS, statistically significant differences in incident syphilis by enrollment period may be due to recent increases in syphilis among urban Thai MSM. Syphilis screening identifies MSM at high risk for HIV, and syphilis screening and treatment are necessary for comprehensive HIV VCT services.

Disclosure of interest statement The Bangkok MSM Cohort Study (BMCS) is funded by the Thailand Minister of Public Health (MOPH) – US Centres for Disease Control and Prevention (CDC) Collaboration. No pharmaceutical grants were received in the development of this study.

P11.20 **RESURGENCE OF SYPHILIS AMONG HIV-INFECTED MEN WHO HAVE SEX WITH MEN ATTENDING STI CLINICS IN THE NETHERLANDS**

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Introduction In the Netherlands, approximately 90% of all infectious syphilis (syphilis) and 70% of all new HIV infections are among men who have sex with men (MSM). As the relation between syphilis and HIV is characterised by a bidirectional synergy, we assessed syphilis trends among MSM stratified by HIV status.

Methods The national STI/HIV surveillance contains epidemiological, behavioural and clinical data from STI clinics, which provide low threshold STI/HIV testing and care for high-risk groups. We descriptively examined syphilis positivity rates between 2007 and 2014.

Results The number of MSM consultations increased each year from 11,048 in 2007 to 29,939 in 2014. Of all MSM, 83% were HIV-negative. The number of syphilis diagnoses was lowest in 2011 ($n = 426$) and highest in 2014 ($n = 693$), of which around 40% was among HIV-infected MSM each year. Among known HIV-infected MSM, the syphilis positivity rate decreased between 2007 (12.3%) and 2011 (4.5%), followed by an increase in recent years (2014: 6.6%). Among MSM newly diagnosed with HIV, this trend was roughly similar to that of known HIV-infected MSM. Among HIV-negative MSM, the syphilis positivity rate decreased between 2007 (2.8%) and 2011 (1.4%), and remained stable thereafter.

Conclusion The observed rebound in syphilis rates in a high-risk group of HIV-positive MSM is concerning at individual level, given the adverse effects on both syphilis and HIV disease progression. At public health level, this is worrisome as syphilis facilitates transmission and acquisition of HIV. Therefore, syphilis infection could be indicative to offer HIV pre-exposure prophylaxis (PrEP) among HIV-negative MSM. On the other hand, offering PrEP to a high-risk core group could promote syphilis transmission if it leads to reduced perceived vulnerability and subsequent increased risk behaviour, as seen after the introduction of cART.

Disclosure of interest statement The authors declare that they have no competing interests.

P11.21 **CHARACTERISING THE EPIDEMIOLOGY OF ACTIVE HEPATITIS B VIRUS INFECTION AMONG HIGH-RISK MEN WHO HAVE SEX WITH MEN AND TRANSGENDER WOMEN IN LIMA, PERU**

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