processes for GC collection, culture, sensitivity testing were implemented.

Results Six MTF clinics were included with geographic representation (Colorado, California (CA), North Carolina, Texas, Virginia, Washington) and project expanded to include a GC reference laboratory and respository. Study participants (n=253): 73% male, 31% white, 48% black, 18% married, 21% had STI diagnosis within the last year. At last sexual encounter, 70% was with a civilian partner, 29% met on the internet, and 66% did not use a condom. 90 plates had growth, 29 tested positive for GC. Sensitivity of GC culture testing from urine was 66%, 82.8% of isolates had resistant or decreased susceptibility profiles. Reduced susceptibility to Cefixime and Azithromycin was indentified in CA. Ceftriaxone MICs remain within susceptible ranges, but the have begun to rise. Slightly elevated MICs to Ceftriaxone have been identified at Navy sites. 3/5 (60%) of these isolates also have reduced susceptibility to Azithromycin. 10 new NG-Multi Antigen Sequence Typing types were identified.

Conclusion We successfully established a U.S. DoD GC resistance surveillance and repository. Urine culture testing for GC may be acceptable for identifying population level resistance. While U.S. dual therapy is currently effective, the slow rise in MICs highlights the need for novel therapeutics and continued surveillance.

O12.2 CO-INFECTION AND MACROLIDE ANTIMICROBIAL RESISTANCE (AMR) OF *MYCOPLASMA GENITALIUM* WITH *NEISSERIA GONORRHOEAE* AND *CHLAMYDIA TRACHOMATIS*, IN FEMALES, HETEROSEXUAL MALES, AND MEN-WHO-HAVE-SEX-WITH-MEN

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Introduction Population-based prevalence estimates of *Mycoplasma genitalium* (MG), *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG) in men and women in England are: 1.2% and 1.3%; 1.1% and 1.5%; and <0.1%, respectively. In sexual health clinics (SHCs), NG and CT are routinely tested for, whereas MG is not. Undiagnosed MG co-infection threatens and complicates empirical therapy of CT and NG, where azithromycin use may aid further spread of macrolide antimicrobial resistance (AMR). We assessed co-infection and macrolide AMR prevalence in symptomatic patients accessing three London SHCs.

Methods Patients aged ≥16 years with symptoms of an STI provided samples: vulvovaginal swab (females), first void urine (men-who-have-sex-with-women (MSW) and men-who-have-sex-with-men (MSM)), pharyngeal and rectal swabs (MSM). Routine clinic CT/NG results were obtained and FTD Urethritis Plus kit used for MG detection. Resistance was determined using Sanger sequencing.

Results Prevalence of NG only infection in females, MSW and MSM was 0.3% (95%CI 0–1.8), 3.5% (1.6–7.3) and 31.0% (21.4–42.5), respectively. MG only prevalence was 5.3% (3.3–8.4), 14.9% (10.4–21.0) and 11.3% (5.8–20.7), respectively. CT only prevalence was 5.6% (3.5–8.7), 15.5% (10.9–20.6) and 5.6% (2.2–13.6), respectively. MG-NG co-infection was in MSW only (0.6%, 0.1–3.2), representing 2.4% (0.4–12.3) of NG infections. CT-MG co-infection was in females and MSW (1.6%, 0.7–3.8% and 2.3%, 0.9–5.8, respectively), together representing 13.0% (7.0–23.0) of CT infections. CT-NG co-infection was in all groups (females: 0.3%, 0–1.8; MSW: 2.3%, 0.9–5.8; MSM 7.0%, 3.1–15.5). MG-NG-CT infection was found in females (0.7%, 0.2–2.4), representing 16.7% (4.7–44.8) of NG-CT infections. 64.9% (37/57) of MG samples sequenced were macrolide resistant (67.0% (21/31) from MSW).

Conclusion With 13.0% and 2.4% of CT and NG infections respectively being co-infected with MG, and two-thirds MG infections displaying macrolide AMR, use of azithromycin for symptomatic CT/NG treatment in the absence of MG testing should be reconsidered.

O12.3 THE EMERGENCE AND SPREAD OF ANTIMICROBIAL RESISTANT *NEISSERIA GONORRHOEAE* IN HIV POSITIVE MEN WHO HAVE SEX WITH MEN

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Introduction In England, men who have sex with men (MSM) who are HIV-positive are disproportionately affected by STIs, in part probably due to HIV sero-adaptive behaviours. *Neisseria gonorrhoeae* (NG) is of particular concern because treatment is threatened by antimicrobial resistance (AMR). In England, AMR NG has typically spread rapidly within sexual networks of MSM. We investigated whether the emergence and/or spread of AMR NG was associated with HIV-positive status.

Methods The prevalence of NG decreased susceptibility (DS) to ceftriaxone (MIC (mg/L)≥0.015), cefixime (≥0.125), and azithromycin AMR (≥1) from 2004–2015 was plotted by HIV status to investigate the emergence of DS/AMR using data from England and Wales collected within the Gonococcal Resistance to Antimicrobials Surveillance Programme. Differences were assessed using the Kolmogorov-Smirnov (KS) test. Logistic regression was used to model the association between HIV status and susceptibility to these antimicrobials in separate models adjusting for year.

Results Among all 5,630 MSM with NG, 25% of samples had DS/AMR to ceftriaxone, 8% to cefixime and 3% to azithromycin. A third (2024/5630) of MSM were HIV-positive. The distribution of prevalence of NG DS/AMR to ceftriaxone, cefixime and azithromycin was similar in HIV-positive and HIV-negative MSM across 2004–2015 ($p>0.05$ for each antimicrobial). In the logistic regression models, HIV-positive MSM were as likely as HIV-negative MSM to be infected with NG DS to ceftriaxone (DS/AMR prevalence in HIV-positive MSM vs HIV-negative MSM, adjusted odds ratio [95% confidence interval]) 25% vs 25%, 1.0 [0.9–1.1], cefixime 7% vs 8%, 1.1 [0.9–1.4] or azithromycin: 3% vs 3%, 0.9 [0.6–1.2].

Conclusion From these epidemiological data there is no evidence that MSM with HIV are at greater risk of DS/AMR NG compared to those without HIV. Whole genome sequencing will assist further investigations to explore relatedness of isolates and understand whether distinct populations of NG are spread more efficiently within sexual networks of HIV-positive MSM.

O12.4 PREVALENCE OF *MYCOPLASMA GENITALIUM*AND MACROLIDE RESISTANCE IN ASYMPTOMATIC MEN WHO HAVE SEX WITH MEN (MSM) ATTENDING A SEXUAL HEALTH CENTRE

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Introduction There are limited data on the prevalence of *M. genitalium* and macrolide resistance in asymptomatic MSM. Due to limited availability, testing for *M. genitalium* has generally been for symptomatic patients, such as men with non-gonococcal urethritis (NGU) and proctitis. Recent data from Melbourne Sexual Health Centre (MSHC) show MSM are over-represented among men with *M. genitalium* urethritis and that macrolide resistant *M. genitalium* is almost twice as common among MSM, as among heterosexual men (76% vs 39%). In order to inform practice guidelines we undertook a screening study in asymptomatic MSM, to obtain accurate prevalence and resistance estimates.

Methods One thousand consecutive consenting MSM attending MSHC without symptoms of NGU or proctitis, not known to be contacts of MG, are tested and given a short questionnaire on behavioural risk factors and recent antimicrobial therapy. First pass urine and an anorectal swab are tested by polymerase chain reaction (ResistancePlus MG test, SpeeDx, Australia) for the presence of *M. genitalium* and for macrolide resistance mutations (MRM).

Results From 23 August to 15 December 2016, 401/1000 (40%) MSM have been recruited. *M. genitalium* was detected in 30 of 401 MSM [prevalence 7.5% (95% confidence interval (CI): 5.1%, 10.5%)]; 20 rectal [rectal prevalence 5.0% (95%CI: 3.1%, 7.6%)] and ten urethral infections [urethral prevalence 2.5% (95%CI: 1.2%, 4.5%)]. MRM were detected in 25 of 30 infections [83.3% (95%CI: 65.3%, 94.4%)]. MRM were detected in 18/20 rectal [90% (95%CI: 68.3%, 98.8%)] and 7/10 urethral [70% (95%CI: 34.8%, 93.3%)] infections. Estimates will be updated in June 2017.

Conclusion MSM without urethral and rectal symptoms attending a sexual health centre in Melbourne have a high prevalence of *M. genitalium*, and over 80% have macrolide resistance mutations. Rectal infections are twice as common as urethral. To our knowledge this study will provide the largest urethral and rectal estimates of M. genitalium infection and macrolide resistance in MSM and will inform future screening guidelines.

O12.5 FACTORS ASSOCIATED WITH ANTIMICROBIAL RESISTANT GONORRHOEA INFECTIONS IN MEN WHO HAVE SEX WITH MEN: CASE-CONTROL STUDY

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Introduction Strategies to identify antimicrobial resistance (AMR) and improve antibiotic stewardship to control the spread of AMR in *Neisseria gonorrhoeae* (NG) are urgently needed. As part of a project to develop a point-of-care (POC) test for AMR in NG, we investigated factors that could help identify infections due to antibiotic resistant NG.

Methods We enrolled men who have sex with men (MSM) at sexual health centres in Zurich and Bern, Switzerland, from May 2015 to June 2016. All had samples taken for NG detection from urethra, rectum and pharynx. In culture positive specimens we obtained minimum inhibitory concentrations (MICs) using Etest for ciprofloxacin, ceftriaxone, cefixime and spectinomycin (EUCAST AMR breakpoints) and azithromycin (EuroGASP, >2 mg/L). We collected clinical data and patients completed an online questionnaire. We compared cases (positive NG culture and AMR) with controls (NG and no AMR) with odds ratios (OR) and 95% confidence intervals (CI). We used multivariable logistic regression in MSM with complete data for all included variables.

Results Of 230 MSM enrolled, 117 had a positive NG culture. There were 46 (39%) cases with resistant NG (ciprofloxacin, n=45, azithromycin, n=1) and 71 controls. Clinical findings did not differ between cases and controls. Cases were more likely than controls to have had sex outside Switzerland in the previous 3 months (OR 2.2, 95% CI 1.0–4.7, p=0.05), to have received oral sex (OR 5.6, 95% CI 0.7–46.8, p=0.08) and to have concurrent partnerships (OR 2.2, 95% CI 0.8–6.5, p=0.11). In multivariable analysis (39 cases, 54 controls), the association with sex abroad remained (OR 2.0, 95% CI 0.9–4.8, p=0.10), controlling for concurrency.

Conclusion In this population of MSM in Switzerland, AMR in NG might be more common in MSM who have sex abroad and who receive oral sex, possibly from asymptomatic pharyngeal NG. No clinical factors distinguished AMR from non-AMR NG infections in MSM. Strategies such as development of POC tests that detect AMR are needed to conserve last-line antibiotic treatment for NG.

O12.6 QUALITY ASSESSMENT OF THE ENHANCED GONOCOCCAL ANTIMICROBIAL SURVEILLANCE PROGRAM IN THAILAND, 2015–2016

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