CO-INFECTION AND MACROLIDE ANTIMICROBIAL
THE EMERGENCE AND SPREAD OF ANTIMICROBIAL RESISTANCE (AMR) OF MYCOPLASMA GENITALIUM WITH NEISSERIA GONORRHOEAE AND CHLAMYDIA TRACHOMATIS, IN FEMALES, HETEROSEXUAL MALES, AND MEN-WHO-HAVE-SEX-WITH-MEN

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 may be acceptable for identifying population level resistance. Reduced susceptibility to Ceftriaxone and Azithromycin was identified in CA. Ceftriaxone MICs remain within susceptible ranges, but the rise have begun to rise. Slightly elevated MICs to Ceftriaxone have be 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 MG should be reconsidered.

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 repository. 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 samples sequenced were macrolide resistant (67.0% (21/31) from CA. Ceftriaxone 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; MSW 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.

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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 (≥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.

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 these antimicrobials in separate models adjusting for year.

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