The platform was validated by testing *Chlamydia trachomatis* infection from patient-collected vaginal swab samples. Volunteers enrolled in an internet-based Chlamydia screening program, where two sets of swabs were self-collected and mailed back to our lab. One set of swabs was analysed using the gold standard Gen-Probe AC2 CT assay. The second set of swabs was tested using the mobiLab platform. The two results were in agreement for 20 out of 20 samples at a time threshold of 30 min, demonstrating that the droplet assay performance is comparable to the gold standard for the samples tested. To our knowledge, this abstract presents the first smartphone-based NAAT platform that integrates sample preparation, amplification and data processing.
Disclosure of interest statement None to disclose.

O03 - Extragenital STIs

O03.1 CORRELATES OF REPEAT ANORECTAL INFECTIONS AMONG MEN WHO HAVE SEX WITH MEN

[1]FYS Kong*, [2]S Tabrizi, [3]CK Fairley, [2]S Phillips, [4]W Huston, [1,3]LA Vodstrcil, [3]G Fehler, [3]M Chen, [3]CS Bradshaw, [1]JS Hocking. *[1]Melbourne School of Population and Global Health, University of Melbourne, Victoria, Australia; [2]Royal Women's Hospital, Victoria, Australia; [3]Melbourne Sexual Health Centre, University of Melbourne, Victoria, Australia; [4]Queensland University Technology, Queensland, Australia*

10.1136/sextrans-2015-052270.91

Introduction There is increasing concern about azithromycin treatment failure for rectal chlamydia. Higher organism loads have been reported at the rectal site compared to other sites (genital/oral) and higher organism load may be associated with treatment failure in women, but little data are available among men who have sex with men (MSM). This study examined the association between organism load and repeat rectal chlamydia infection in order to investigate possible mechanisms for treatment failure.
Methods Stored rectal chlamydia positive samples from men attending Melbourne Sexual Health Centre between July 2008 to October 2013 were analysed for organism load and chlamydia serovar. Men were included if they had a follow-up test within 100 days of the index infection.
Results There were 292 chlamydia positive index rectal swabs available for analysis. Organism load and serovar were assessable for 284 swabs –– 44 cases had one repeat positive result, 5 cases had two repeat positives and 181 MSM had a negative result within 100 days of their index positive result. Among the 230 index infections, 33% were serovar G, 30% were D, 15% were J, 9% were E, 7% were L2, 3% were B and 2% were F. The cumulative incidence of repeat rectal chlamydia within 100 days was 21%. Among those men who had a repeat positive result, all but three (3%) were the same serovar. Organism load was higher in index cases of men who had a repeat infection compared with those who did not ($p < 0.01$).
Conclusion Repeat rectal chlamydia is common within 100 days among MSM attending MSHC. Most repeat infections were of the same serovar suggesting these infections were either treatment failure or re-infection from an infected partner. High organism load was associated with repeat infection suggesting a possible role in treatment failure.
Disclosure of interest statement None.

O03.2 THE CONTRIBUTION OF *MYCOPLASMA GENITALIUM* TO THE AETIOLOGY OF SEXUALLY ACQUIRED PROCTITIS IN MEN WHO HAVE SEX WITH MEN

[1,2]M Bissessor*, [3,4]SN Tabrizi, [1,5]CS Bradshaw, [1,5]CK Fairley, [4]J Twin, [4]M Poljak, [1]J Peel, [2]JS Hocking, [3]SM Garland, [1,5]MY Chen. *[1]Melbourne Sexual Health Centre, Alfred Health, Victoria, Australia; [2]Melbourne School of Population and Global Health, University of Melbourne, Melbourne, Victoria, Australia; [3]Department of Obstetrics and Gynaecology, University of Melbourne, Victoria, Australia; [4]Department of Microbiology, Infectious Diseases, The Royal Women's Hospital, Murdoch Childrens Research Institute; [5]Central Clinical School, Monash University, Melbourne, Victoria, Australia*

10.1136/sextrans-2015-052270.92

Background To determine the contribution of *Mycoplasma genitalium* to the aetiology of sexually acquired proctitis in HIV positive and HIV negative men who have sex with men (MSM).
Methods Consecutive MSM diagnosed clinically with proctitis between May 2012 and August 2013 were tested for: rectal *M. genitalium* by real time PCR assay; chlamydia by strand displacement assay; gonorrhoea by culture; and herpes simplex virus (HSV) by in-house PCR. *M. genitalium* load was determined by qPCR assay targeting the MgPa gene. The loads of rectal *M. genitalium* in men with symptomatic proctitis were compared to those in a control group of men (ratio 1:1) with rectal *M. genitalium* but no symptoms of proctitis.
Results Among 154 MSM with proctitis, rectal *M. genitalium* was detected in 12% (18/154, 95% CI: 6.9–17.1). Rectal *M. genitalium* was significantly more common among HIV positive men (10/48, 21%; 95% CI: 9.5–32.6) compared with HIV negative men (8/106, 8%; 95% CI: 2.9–13.1, $p = 0.02$). Among HIV positive men the rate of *M. genitalium* was comparable to that for chlamydia (21%), gonorrhoea (25%) and HSV (19%). The median load of *M. genitalium* among 18 men with symptomatic proctitis was significantly higher than the median load among 18 controls who had asymptomatic rectal *M. genitalium* (4.82 $\log_{10}$ load/sample versus 3.81 $\log_{10}$ load/sample, $p = 0.016$)
Conclusion *M. genitalium* was common among MSM with symptomatic proctitis, especially those with HIV. Comprehensive testing for multiple sexually acquired pathogens in MSM presenting with proctitis is required and should include testing for *M. genitalium*.
Disclosure of interest statement None to disclose.

O03.3 THE PREVALENCE OF *MYCOPLASMA GENITALIUM* AND *CHLAMYDIA TRACHOMATIS* AT VARIOUS ANATOMICAL SITES OF MEN WHO HAVE SEX WITH MEN IN FIVE CITIES OF CHINA

J Jiang*, P Liu, NX Cao, XD Gong. *Institute of Dermatology, Chinese Academy of Medical Sciences & Peking Union Medical College, National Center for STD Control*

10.1136/sextrans-2015-052270.93

Introduction To determine the prevalence of *Mycoplasma genitalium* and *Chlamydia trachomatis* in urethra, rectum and pharynx of men who have sex with men (MSM) in China, and to analyse the association between the agents detection and clinical manifestations.
Methods 388 MSM were recruited at gay bars in five cities of China from September 2007 to November 2008. Rectal and pharyngeal swabs and first void urine were tested for *M. genitalium* and C trachomatis by PCR. Bivariate and multivariable

analyses were performed to determine the association between the infections and clinical manisfestations.

Results The prevalence of *M. genitalium* infection at urethral, rectal and pharyngeal sites was 17.2% (95% CI: 13.4% to 21.0%), 11.8% (95% CI: 8.4% to 15.2%), and 13.5% (95% CI: 9.9% to 17.1%), respectively. C trachomatis was more commonly detected in rectum (16.0%, 95% CI: 12.2% to 19.8%) than in urethra (9.4%, 95% CI: 6.4% to 12.3%) and in pharynx (0.8%, 95% CI: 0.1% to 1.6%). Urethral *M. genitalium* infection was significantly associated with urethral discomfort in the past 3 months (AOR: 2.22, 95% CI: 1.09–4.52) and polymorphonuclear leucocyte (PMNL) counts per high-power microscope field (AOR: 2.40, 95% CI: 1.02–5.62). Rectal *M. genitalium* infection was independently associated with rectal discharge in the past 3 months (AOR: 6.06, 95% CI: 1.59–23.11). For C trachomatis infection, PMNL counts per high-power microscope field (AOR: 4.66, 95% CI: 1.80–12.07) and having receptive anal intercourse with a male in the past 3 months (AOR: 2.27, 95% CI: 1.14–4.54) were associated with urethral and rectal C trachomatis infection, respectively.

Conclusion High prevalence of *M. genitalium* infection was observed among MSM in China at urethral, rectal and pharyngeal sites. *M. genitalium* infection was significantly associated with urethral and rectal symptoms. C trachomatis was more commonly detected in rectum and more likely to be asymptomatic.

Disclosure of interest statement No potential conflicts of interest.

O03.4 WHAT EXPLAINS ANORECTAL CHLAMYDIA DETECTION IN WOMEN: IMPLICATIONS FOR CONTROL STRATEGIES

[1]Janneke CM Heijne*, [2,3]Geneviève AFS van Liere, [2,3]Christian JPA Hoebe, [1]Birgit HB van Benthem, [2,3]Nicole HTM Dukers-Muijrers. *[1]Centre for Infectious Diseases Control, National Institute for Public Health and the Environment, Bilthoven, The Netherlands; [3]Department of Medical Microbiology, School of Public Health and Primary Care (CAPHRI), Maastricht University Medical Center (MUMC+), Maastricht, Netherlands; [2]Department of Sexual Health, Infectious Diseases and Environmental Health, South Limburg Public Health Service, Geleen, Netherlands*

10.1136/sextrans-2015-052270.94

Introduction Anorectal *Chlamydia trachomatis* (Ct) testing in women is not standard. In some countries, women are being tested based on reported anal intercourse. However, universal anorectal Ct testing in STI clinics revealed prevalences over 10%, irrespective of anal intercourse, and showing high co-occurrence with urogenital infections. To inform control strategies in women, this study explores different transmission mechanisms that can explain the high observed Ct prevalences using mathematical modelling.

Methods We developed a pair compartmental model of heterosexuals aged 15–29 years. To inform the model, data on anorectal and urogenital infections are used from heterosexual men and women attending STI clinics. In the model, women can have urogenital and anorectal infections, men only urogenital infections. At all sites, individuals can either be susceptible (S), infected (I) or recovered (R). All partnerships engage in vaginal intercourse, and a fraction of partnerships will also have anal intercourse. We developed models including different transmission mechanisms, e.g. transmission by anal sex and autoinoculation between anatomic sites, and explored which mechanisms or combinations thereof fit the observed data best.

Results Most models did fit to the observed prevalence of male and female urogenital Ct: 13.6% (95% CI: 10.7–17.2) and 13.0% (95% CI: 12.4–13.7), female anorectal Ct: 10.6% (95% CI: 8.0–13.9) and both sites: 9.9% (95% CI: 7.4–13.1). Models that assumed autoinoculation between anatomic sites fitted the data best, compared to models that focused on anal sex only. The model will be used to further determine the impact of testing strategies (i.e. universal irrespective of anal intercourse) and treatment strategies (i.e. azithromycin or doxycycline) on population prevalence.

Conclusions The results are suggestive of a Ct autoinoculation process between anatomic sites in women. This has potential consequences for future chlamydia control strategies including testing and treatment.

Disclosure of interest statement The National Institute of Public Health and the Environment is funded by the Ministry of Health, Welfare and Sport. The authors declare no conflict of interest.

O03.5 CLINICIAN-TAKEN EXTRA-GENITAL SAMPLES FOR GONORRHOEA AND CHLAMYDIA IN WOMEN COMPARED WITH SELF-TAKEN SAMPLES ANALYSED SEPARATELY AND SELF-TAKEN POOLED SAMPLES

[1]JD Wilson*, [1]HE Wallace, [1]J Fisher, [2]H Ward, [3]C Hulme, [4]MH Wilcox. *[1]Leeds Centre for Sexual Health, Leeds Teaching Hospitals NHS Trust, UK; [3]Academic Unit of Health Economics, University of Leeds, UK; [4]Department of Clinical Microbiology, Leeds Teaching Hospitals NHS Trust, UK; [2]Department of Infectious Disease Epidemiology, Imperial College, London, UK*

10.1136/sextrans-2015-052270.95

Background Extra-genital sampling (rectum and pharynx) using nucleic acid amplification tests is becoming increasingly important in women as vulvovaginal swabs (VVS) alone may miss infections. We compared clinician-taken extra-genital samples in women with self-taken samples analysed both separately and as pooled samples for accuracy and cost-effectiveness.

Methods Women attending a sexual health clinic were invited into a 'swab yourself' trial. Clinician and two self-samples (analysed separately and pooled) were taken from vulvovaginal, pharyngeal and rectal sites for gonorrhoea (NG) and chlamydia (CT) using AC2. Sampling order was randomised. Patient infected status was defined as at least two positive confirmed samples.

Results 402 women recruited January–March 2015. Overall prevalence: gonorrhoea 3.2% (rectal 2.7%, pharyngeal 1.5%), chlamydia 13.7% (rectal 12.9%, pharyngeal 3.2%). One NG case (7.7%) and 7 CT cases (12.7%) were VVS negative.

	Sensitivity	Specificity	PPV	NPV
NG Rectal Clinician	100%	100%	100%	100%
NG Rectal Self	100%	100%	100%	100%
NG Pharynx Clinician	83.3%	100%	100%	99.8%
NG Pharynx Self	100%	100%	100%	100%
NG Self Pooled	100%	100%	100%	100%
CT Rectal Clinician	98.1%	100%	100%	99.7%
CT Rectal Self	100%	99.7%	98.1%	100%
CT Pharynx Clinician	92.3%	99.7%	92.3%	99.7%
CT Pharynx Self	84.6%	100%	100%	99.5%
CT Self Pooled	98.2%	99.4%	96.4%	99.7%