Methods A cohort study was conducted among heterosexual STI clinic visitors aged 18–24 years. Risk classes based on behavioural and psychological characteristics, and transitions between classes three weeks after chlamydia testing, were identified using latent transition analysis. We developed a pair compartmental model with a susceptible-infected-susceptible structure informed by the cohort study. We estimated the impact of sustaining the found short-term effects of testing and of interventions enhancing these effects in those diagnosed, in those tested negative, or in all tested on chlamydia prevalence after five years relative to no effect.
Results Four classes were identified (n=810, 13% chlamydia positive (CT+)): 19% of people were in class 1 (5% CT+), 15% in class 2 (10% CT+), 47% in class 3 (16% CT+), and 19% in class 4 (17% CT+). The number of new partners in the past year was higher in class 3 and 4, compared to class 1 and 2. Class 2 and 4 had lower intentions to use condoms, reported less condom use, and were more impulsive, compared to class 1 and 3. Chlamydia positives were more likely to move to a lower risk class after testing, compared to chlamydia negatives. Sustaining this short-term effect resulted in an estimated relative reduction in chlamydia prevalence of 27%. The impact of interventions enhancing behaviour change in those tested negative (−45%) or in all tested (−48%) was estimated to be larger than in those diagnosed (−31%).
Conclusion Testing has strong short-term effects in chlamydia positives, but not in chlamydia negatives. Sustaining these effects is vital in controlling chlamydia transmission, as are interventions enhancing behaviour change in chlamydia negatives.
Disclosure No significant relationships.

P458 GENITAL *CHLAMYDIA TRACHOMATIS* AND *MYCOPLASMA GENITALIUM* AMONG INFERTILE WOMEN IN UNIVERSITY COLLEGE HOSPITAL, IBADAN

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Background *Chlamydia trachomatis* and *Mycoplasma genitalium* are both intracellular pathogen of Sexually Transmitted Infection (STI) that has been reportedly associated with various gynaecological morbidities. The asymptomatic carrier state of *Chlamydia trachomatis* and *Mycoplasma genitalium* facilitates infertility sequelae and perinatal transmission among other complications. Due to the fastidious nature of both organisms, Polymerase Chain Reaction (PCR) are considered more reliable for accurate diagnosis. The aim was to determine the prevalence and risk factors for *Chlamydia trachomatis* and *Mycoplasma genitalium* infection among infertile women in University College Hospital, Ibadan, Nigeria.
Methods A Cross- sectional hospital-based study conducted at the Infertility clinic of the University College Hospital, Ibadan, Nigeria using random sampling technique. Ethical approval was received from UI/UCH ethical approval committee. Information was collected from the 150 consenting women using structured questionnaire, on sociodemographic and behavioral characteristics of the respondents. Endocervical swabs were obtained for DNA extraction. The presence of *Chlamydia trachomatis* and *Mycoplasma genitalium* were detected from the extracted DNA by the use of conventional PCR. Bands corresponding to 241 and 495kb were documented as positive for *Chlamydia trachomatis* and *Mycoplasma genitalium* respectively. All data were analyzed using SPSS version 20.0. Associated risk factors were assessed with logistic regression.
Results Among the infertile women 11(7.30%) had evidence of *Chlamydia trachomatis* and 32(21.3%) *Mycoplasma genitalium*. Only 1(0.7%) had co- infection. Associated risk factors of *Chlamydia trachomatis* included past history of gonorrhea (OR=8.37, p value = 0.002) and Multiple sex partners (OR= 6.67, p value= 0.007). No associated risk factors were found for *Mycoplasma genitalium*.
Conclusion Considering the prevalence of *Chlamydia trachomatis*, the high rates identified for *Mycoplasma genitalium* as a single infection and the low co-infection among the participants, their screening should be included in the microbiological evaluation of infertile women. The risk factors for the infections are similar to those peculiar to other STI
Disclosure No significant relationships.

P459 TOWARDS A UNIVERSAL TOOL FOR ESTIMATING CHLAMYDIA PREVALENCE FROM SURVEILLANCE DATA: A SYSTEMATIC COMPARISON OF MODELS

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Background Chlamydia is the most commonly-diagnosed bacterial STI worldwide. Models have been developed to estimate chlamydia prevalence from surveillance data in Australia and the UK, respectively, by Ali, Cameron et al. (AC) and Lewis & White (LW). To assess robustness, we compared the models' prevalence estimates when applied to the same data.
Methods The models were applied to Australian 2001–2016 surveillance data to produce annual prevalence estimates in age-sex categories of 15–19, 20–24, 25–29 years for each sex. Two sets of input parameters (the "prior" and "posterior" parameters from the AC modelling study) were used.
Results The LW model produced higher prevalence estimates than the AC model in every age-sex category, with both "prior" and "posterior" parameterisation. Prevalence estimates for Australian women aged 15–29 in 2015 were 2.5%(95% CrI:2.4%–2.7%) and 5.1%(95%CrI:4.0%–6.0%) from the AC model and LW model (using "prior" parameters), respectively; the corresponding empirical estimate from literature was 3.3% (95%CI:2.1%–4.5%). Averaging over all years, the LW model produced prevalence estimates that were 2.5x higher than the

AC model for Australian men aged 15–29, and 1.9x higher in women. Neither model agreed perfectly with the empirical prevalence estimates; the LW model tended to be closer in younger age-categories and the AC model closer in older age-categories. The AC model was closer to empirical estimates in men than women.

Conclusion Substantial differences were observed between chlamydia prevalence estimates produced by the two models. These findings have important implications for researchers, policymakers and healthcare professionals, as estimation methods must be robust before they are used to inform public health policy, e.g. assessing the impact of chlamydia-control interventions. Health care systems and associated surveillance systems vary by country, and work to understand the reasons for the models' differences is planned, including applying the models to English data, in collaboration with the Universities of Bern, New South Wales, and Otago.

Disclosure No significant relationships.

P460 ASSESSMENT OF TUBAL FACTOR INFERTILITY ATTRIBUTABLE TO CHLAMYDIA WITH PGP3 SEROLOGY

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Background Our recent case-control study explored the *Chlamydia trachomatis* population attributable fraction (PAF) for tubal factor infertility (TFI) using an elementary body enzyme-linked immunosorbent serological assay (EB-ELISA) or a commercially available (Medac) major outer membrane protein ELISA to measure prior chlamydial infection. We examined data from this study using a Pgp3 enhanced ELISA (Pgp3).

Methods In this study of women with TFI by hysterosalpingogram (cases) and non-TFI infertility (controls) in two U.S. infertility clinics, we assessed anti-*C. trachomatis* seropositivity by Pgp3. We then assessed the association between chlamydia seropositivity and TFI using adjusted odds ratios (aOR) along with 95% confidence intervals (CI) stratified by race. Finally, the adjusted chlamydia TFI PAF (aPAF) and 95% CI based on the Pgp3 assay were estimated.

Results All black (n=107) and 618 of 620 non-black women had Pgp3 results. Seropositivity frequency by Pgp3 was 66% (95% CI 52–80%) for black cases, 72% (60–83%) for black controls, 26% (19–33%) for non-black cases, and 15% (12–18%) for non-black controls. Pgp3 was not associated with TFI among black women (aOR 1.1 [95% CI 0.4–3.3]). Among non-black women, Pgp3 seropositivity was associated with TFI (aOR 1.8 [95% CI 1.1–3.0]) adjusting for clinic, age, income, trichomonas, and endometriosis. Using Pgp3 and adjusting for the same variables, chlamydia TFI aPAF was 12% (95% CI 1–22%) in non-black women.

Conclusion Among non-black women, Pgp3 ELISA seropositivity was associated with TFI. Assays to estimate chlamydia TFI PAF merit further investigation, especially in black women. Chlamydial TFI may be prevented in all women by early identification and treatment of chlamydia.

Disclosure No significant relationships.

P461 BACTERIAL LOAD OF CHLAMYDIA IN THE OROPHARYNX AND SALIVA AMONG GAY AND BISEXUAL MEN WITH UNTREATED OROPHARYNGEAL CHLAMYDIA

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Background Previous studies have found that saliva can carry infectious gonorrhoea, which has led to the hypothesis that saliva could play an important role in gonorrhoea transmission. However, no study has examined the role of saliva in chlamydia transmission. The aim of this study was to determine whether *Chlamydia trachomatis* could be detected in saliva and to determine if the infection is specific to an anatomical site; oropharynx or tonsils.

Methods Men who have sex with men (MSM) who tested positive for oropharyngeal chlamydia at Melbourne Sexual Health Centre, who had no antibiotics in the past 4 weeks, and returned for treatment within 14 days between August 2017 and August 2018 were invited to participate. On the day of treatment, throat swabs were taken by clinicians at the tonsillar fossae and another at the posterior oropharynx. A saliva sample was also collected. All samples were tested for Chlamydia by nucleic acid amplification tests. The sample adequacy and bacterial load of *Chlamydia trachomatis* were assessed by quantitative PCR.

Results Forty-two MSM were included with a median age of 28 (Interquartile range [IQR]:25–33). The majority of men (76.2%; n=32) tested positive at both the tonsils and the oropharynx, followed by 9.5% (n=4) positive at the oropharynx only, and 4.8% (n=2) positive at the tonsils only. Chlamydia was detected in saliva in two-thirds of men (68.0%; n=29). The median bacterial load of chlamydia was 446 copies/ml (IQR: 204-1390 copies/ml) in saliva, 1230 copies/ml (IQR: 538–18200 copies/ml) from the tonsils and1660 copies/ml (IQR: 456–22400 copies/ml) at the oropharynx. The chlamydia loads did not differ between the tonsils and the oropharynx (p=0.865).

Conclusion Chlamydia can be detected in saliva in most of oropharyngeal chlamydia cases among MSM. Sampling both the tonsils and oropharynx is important for optimal detection of oropharyngeal chlamydia.

Disclosure No significant relationships.

P462 RE-TESTING FOR CHLAMYDIA IN THE NATIONAL CHLAMYDIA SCREENING PROGRAMME IN BRISTOL, ENGLAND: AN ANALYSIS OF SURVEILLANCE DATA

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Background England's National Chlamydia Screening Programme (NCSP) recommends that sexually active people <25