

important are the proportion of infections that are symptomatic in men and women; duration of untreated infection; and incidence of PID, infertility and ectopic pregnancy attributable to *M. genitalium*.

**Conclusion** Further empirical work is required to improve understanding of the key aspects of *M. genitalium*'s natural history which we have identified before it will be possible to determine if screening is cost-effective.

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**P09.12 APPARENTLY-DIFFERENT CLEARANCE RATES FROM COHORT STUDIES OF *MYCOPLASMA GENITALIUM* ARE CONSISTENT AFTER ACCOUNTING FOR INCIDENCE OF (RE) INFECTION AND STUDY DESIGN**

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**Introduction** *Mycoplasma genitalium* is increasingly recognised as an important cause of urethritis, cervicitis, PID, infertility, and increased HIV risk. A better understanding of its natural history is crucial to informing control policy. Two cohort studies (students in London, UK, and sex workers in Uganda) suggest very different clearance rates. We aimed to gain insight into the reasons and to obtain improved estimates by making maximal use of the data from those studies.

**Methods** To estimate incidence and clearance rates, we developed a model for time-to-event analysis incorporating the processes of individuals becoming infected after enrolment into the study, clearing infection, becoming reinfected after clearance, and fitted it to data from the two cohort studies. As the studies collected limited data on sexual partnership dynamics, we tested the sensitivity of the model to different assumptions that were consistent with the available information. Additionally, we modelled study-design differences, including sample handling conditions affecting testing sensitivity.

**Results** In the London students, the estimated clearance rate was 0.80 p.a. (mean duration 15 months), with incidence 1.31% p.a. and 3.93% p.a. (in low- and high-risk groups, respectively). Without adjusting for study design, corresponding estimates from the Ugandan data were 3.35 p.a. (mean duration 3.6 months) and 44% p.a. Clearance-rate differences could be explained by differences in testing sensitivity, with 'true' rates being similar, and adjusted incidence in the Uganda study being 21% p.a.

**Conclusion** Analysis needs to account for study design, and we recommend cohort studies collect more information on partnership dynamics to inform more-accurate estimates of natural-history parameters. The cohorts' clearance rates were probably similar, with the apparent difference due mostly to differences in sample handling in the studies, and perhaps partly due to the sex workers having more-frequent antibiotic treatment (for other infections), and in the London students some reinfection in stable partnerships causing some of the apparently-persistent infection.

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**P09.13 IMPACT AND COST-EFFECTIVENESS OF POINT-OF-CARE TESTING FOR CHLAMYDIA: ACCOUNTING FOR GEOGRAPHIC VARIATION IN INFECTION BURDEN AND TESTING RATES, HEALTH SERVICE CONFIGURATION, AND IMPLEMENTATION STRATEGY**

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**Introduction** Point-of-care tests (PoCTs) for *Chlamydia trachomatis* potentially improve control by reducing transmission through reduced treatment delay, reduced loss to follow up, and greater convenience for patients leading to increased testing. However, with ~3–5 fold variation in rates of Chlamydia testing and diagnosis across geographic settings in England, in assessing cost-effectiveness the epidemiological context needs to be considered.

**Methods** We developed a transmission-dynamic model to capture geographic variation in rates of testing and diagnosis using current technology to allow assessment of the impact of implementing PoCTs in different clinical services in different localities. The model incorporates heterogeneity in sexual partner change rates and is stratified by age and sex. It uses behavioural and prevalence data from the Natsal national survey, and Public Health England surveillance data on testing and diagnosis rates. Uncertainty in natural history and behavioural parameters is captured by Monte Carlo methods. Health service reconfiguration using PoCT is considered, including rates of PoCT introduction and reduction in presumptive treatment.

**Results** The model captures observed geographic variation in rates of testing and diagnosis in females and males, which affects the impact and cost-effectiveness of PoCT introduction. In general, whilst PoCTs may reduce incidence by increasing diagnosis