many adolescents receive infrequent sexually transmitted infection (STI) testing. Gay, bisexual, transgender, and homeless youth are at increased risk for STIs. Currently, the Centers for Disease Control and Prevention recommend only annual screening of CT/NG for all sexually active gay, bisexual, and other men who have sex with men (MSM).

Methods We recruited adolescents aged 12–24 years from homeless shelters, lesbian, gay, bisexual, transgender, and queer (LGBTQ) organizations, and community health centers in Los Angeles, California and New Orleans, Louisiana from May 2017–January 2019. All participants received point-of-care pharyngeal, rectal, and urethral/vaginal CT/NG testing using the Cepheid GeneXpert (Sunnyvale, CA). We measured the proportion of participants with CT/NG infections every 4 months for 12 months. We compared the proportion of STI positivity at each time point to the baseline visit using a McNemar's test.

Results Overall, 156 participants received testing (53 MSM/transgender women, 56 heterosexual men, 47 heterosexual women). Baseline prevalence of CT/NG among MSM and transgender women was 18.9%. At the 4 month visit, prevalence was 5.7% ($\Delta = 13.2\%$, $P\text{-value} = 0.04$). At the 8 month visit, prevalence was 15.1% ($\Delta = 3.8\%$, $P\text{-value} = 0.99$). At the 12 month visit, prevalence of CT/NG was 3.8%, a 15.1% decrease from baseline ($P\text{-value} = 0.02$). There was no significant difference in prevalence among heterosexual men between their baseline visit (5.4%) and their 12-month visit (8.9%) ($\Delta = 3.5\%$, $P\text{-value} = 0.82$). There was no significant difference in prevalence among heterosexual women between their baseline visit (10.6%) and their 12-month visit (8.5%) ($\Delta = 2.1\%$, $P\text{-value} = 0.99$).

Conclusion Providing regular testing among adolescent MSM and transgender women may be beneficial in reducing the prevalence of CT/NG infections. Reasons for failure to reduce prevalence among heterosexual men and women require further study.

Disclosure No significant relationships.

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PRENATAL SCREENING AND TREATMENT OF CHLAMYDIA TRACHOMATIS INFECTION TO PREVENT ADVERSE PREGNANCY OUTCOMES – A PILOT STUDY

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Background Chlamydia trachomatis (CT) infection is considered to be related to adverse pregnancy outcomes, but we are still not sure whether prenatal screening and treatment of CT infection can prevent these. We conducted a pilot study to investigate the feasibility and acceptability of prenatal CT screening and treatment in China, in order to collect preliminary data for a RCT.

Methods We recruited pregnant women at a gestational age between 12–14 weeks in a hospital in Guangzhou, China in April and May of 2018. All participants were screened for CT using Nucleic Acid Amplification Testing at the registry. Chlamydia-positive patients were provided one dose of azithromycin for treatment, and they were re-tested one-month after the treatment. We followed up every participant until delivery or end of pregnancy. We included nine adverse pregnancy outcomes

(preterm birth (PTB), smaller than gestational age (SGA), birth defect, infant death, etc.).

Results Of 453 women reached, 306 agreed for the screening and provided urine samples for testing. 302 (98.7%) of the collected samples were valid for testing, and 283 (92.5%) of questionnaires were obtained, but one was withdrew before delivery. Finally, we included 282 participants in this analysis whose mean age was 30.46 year (SD: 3.88). 14(5%) women were CT-positive at the registry. Eleven cases received treatment and three refused. All treated women was re-tested as negative after treatment. In treatment group (N=11), neither adverse pregnancy outcomes nor side effect of treatment was observed. In the non-treatment group (N=3), one still birth was found. Among 268CT-negative pregnant women, we observed 13 PTBs, 20 SGAs and 1 heart birth defect.

Conclusion It is feasible and acceptable to conduct CT screening study among pregnant women. Although the sample size is limited, the study provided useful information for planning a RCT aimed to evaluate the efficacy of the testing and treatment strategy.

Disclosure No significant relationships.

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IS CHLAMYDIA AND GONORRHOEA TESTING ASSOCIATED WITH PREGNANCY OUTCOMES? A RETROSPECTIVE DATA-LINKAGE COHORT STUDY

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Background Adverse reproductive health outcomes have been associated with *Chlamydia trachomatis* (CT) and Neisseria gonorrhoea (NG) infections. Risk of adverse outcomes have been measured by following progression to Pelvic Inflammatory Disease (PID), ectopic pregnancy and tubal factor infertility. We propose that these measures are complemented by assessing long-term pregnancy outcomes. We compare long-term pregnancy outcomes including use of Assisted Reproductive Technologies (ART) to examine the association with sexually transmitted infections.

Methods We used a retrospective data-linkage cohort study design to link women aged 15–35 years based in Queensland, Australia, with a record of testing for CT and NG or a full blood test in a public health facility between Jan 1, 2000 and Dec 31, 2005. Records were probabilistically and deterministically linked to the Queensland Perinatal Registry until Dec 31, 2013. Multiple regression models were used to estimate the odds of a woman ever being pregnant based on her history of testing and exposure to an infection.

Results Complete data from 132,951 women were analysed. Of those tested for an STI, 592 recorded multiple positive results, 3,243 single positives and 20,870 negative results. Those who had not tested for an STI comprised 108,246 women. The adjusted odds ratio for having a successful pregnancy was 0.66 (95% CI 0.64–0.68) for women who had ever been tested. The adjusted odds ratio for usage of ART was 1.24 (1.02–1.50). Women with CT had an adjusted odds ratio of 0.70 (0.65–0.76), whereas women with NG had an adjusted odds ratio of 0.78 (0.66–0.92).

Conclusion Women with a history of testing for an STI are at significantly higher risk of not having a pregnancy and reporting a higher use of ART, suggesting that STI testing and a positive CT or NG test result is associated with adverse reproductive health outcomes.

Disclosure No significant relationships.

P479 IMMUNOPROFILING OF *CHLAMYDIA TRACHOMATIS* COMBINING WHOLE-PROTEOME MICROARRAYS AND HIGH-THROUGHPUT MULTIPLEX SEROLOGY

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Background Chronic infections with *Chlamydia trachomatis* (Ct) can give rise to sequelae that include pelvic inflammatory disease (PID), chronic pelvic pain (CPP), ectopic pregnancy (EP) and tubal factor infertility (TFI), and may contribute to cervical and ovarian cancer development in women. The humoral immune system of an infected individual recognizes and responds to different Ct antigens by eliciting a variety of antibodies. Based on differential protein expression, antibody patterns may represent infection-specific phases of the chlamydial life cycle or disease-specific stages. The selection of potential antigens for the development of serological assays is usually based on prior knowledge about antigenic properties and thus restricted to few selected proteins.

Methods To overcome this bias, we have developed a novel method to generate Ct whole-proteome microarrays directly from bacterial genomic DNA using a combination of multiple spotting technique and cell-free, on-chip protein expression based on expression constructs generated by two successive PCRs. Based on e.g. case-control comparisons, informative antigens are identified and validated in sero-epidemiological studies using low-density, high-throughput Luminex-based multiplex suspension array technology.

Results Establishment of the method for Ct serovar D with 895 open reading frames (ORFs) yielded several novel infection markers, and revealed an association between specific Ct antibodies and the development of cervical carcinoma (adjusted odds ratio (OR) 3.9, 95% confidence interval (CI) 1.8–8.3 for CT_117, and OR 3.1, 95% CI 1.3–7.1 for CT_223).

Conclusion Following this initial screening we aim to identify Ct antigens associated with PID, EP, TFI and ovarian cancer as well as antibody responses associated with protection from Ct re-infection. The newly developed technique for generation of fast and efficient proteome immunoassays can easily be adapted to other complex microorganisms, not only in the field of sexually transmitted infections but in all areas of infection research.

Disclosure No significant relationships.

P480 ENHANCED PREVALENCE OF *CHLAMYDIA TRACHOMATIS* DNA IN CLINICAL SAMPLES OF PATIENTS WITH STIS CO-INFECTION

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Background *Chlamydia trachomatis* (CT) is one of the most commonly diagnosed asymptomatic bacterial cause among sexually transmitted infection (STI) worldwide. We assessed the prevalence of CT in random STI patients to evaluate the presence of CT as either a single infection or in co-infection with other STI.

Methods A total of 422 urogenital samples were collected from patients who attended the Diagnostic Centre in Saratov Region to be tested for specific DNA of CT and other STIs (*Neisseria gonorrhoeae*/*Trichomonas vaginalis*/*Mycoplasma hominis*/*Mycoplasma genitalium*/*Human papillomavirus* (HPV 16/18)/*Cytomegalovirus*/*Herpes simplex virus* (HSV 1/2)/*Candida albicans*/*Gardnerella vaginalis*/*Ureaplasma species*). Each clinical sample was carefully screened with the use of commercial kits, either as conventional PCR targeting CT plasmid, or real-time multiplex set (Vector-Best, Russia) validated further by additional confirmatory PCR for the CT-positive samples.

Results CT was detected in 17/194 (4,02%) patients who were screened only for the presence of CT DNA (194/422, 45,97%). However, when all 422 patients were systematically screened for CT, along with all other STIs, CT infections were significantly higher (about 4-fold larger) in the patients with other STIs (70/422, 16,58%). Moreover, 56/70 (80%) CT DNA samples were successfully genotyped as CT genovars: E (50%), G (21,42%), D (17,85%), J (5,35%) and K (3,57%).

Conclusion Chlamydial asymptomatic infection cases can be frequently masked by clinical symptoms of other STIs. Diagnostic testing for multiple STIs should provide a broader diagnostic coverage for asymptomatic CT patients in order to improve significantly CT early detection, prevention of transmission, and treatment strategies.

Disclosure No significant relationships.

P481 PATIENTS WITH REPEAT *CHLAMYDIA TRACHOMATIS* AND *NEISSERIA GONORRHOEAE* ARE DIFFERENT COMPARED TO THOSE WITH SINGLE INFECTIONS

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Background Recently it was proposed that patients repeatedly infected with *Chlamydia trachomatis*(CT) or *Neisseria gonorrhoeae*(NG), so called core groups, likely have high impact on