higher risk for reinfections were young people (<20 years 17%), specific ethnic minorities (Netherlands Antillean 16%, Turkish 17%, sub-Sahara African 18%), persons living in Rotterdam (11 vs 8% Amsterdam 4% Limburg), and in high-risk areas (14%).
Conclusions The uptake of retesting was successful counting two third with automatically sent testkits 6 months after screening. Reinfection rates were high, especially among known risk-groups. Questionnaire results show that follow-up of (partner) treatment after Chlamydia infections could be improved.

O1-S01.04 SUBOPTIMAL REPEAT TESTING OF WOMEN WITH POSITIVE CHLAMYDIA TESTS IN THE USA, 2008–2010

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Background Women treated for chlamydia have a high prevalence of infection several months later, likely caused by reinfection from an untreated or new infected sex partner. To prevent potential adverse outcomes of chlamydia, US guidelines recommend repeat testing 3 months after treatment, regardless of partner treatment. If retesting at 3 months is not possible, women should be retested at their next clinical encounter within 12 months. A chlamydia test-of-cure is also recommended for all infected pregnant women 3–4 weeks after treatment. We assessed adherence to retesting guidelines using data from a US laboratory corporation that has a large share of the US market.
Methods Among tests performed from June 2008 to May 2010, we estimated the percentage of women who were retested ≥3 weeks later by test result, age and pregnancy status. We also estimated the positivity rate among repeat chlamydia tests and the mean time between an initial test and the first repeat test. We assumed that for each woman in the database all chlamydia tests during the study period were performed by this laboratory corporation.
Results Among 2.90 million chlamydia tests performed in 1.77 million women, 4.0% (114 963) were positive. Among the 1.77 million women with tests, 1.34 million (75.7%) had only a single test and 0.43 million (24.3%) had at least one repeat test. If an initial test was positive, 48.6% were retested compared to 23.5% if the initial test was negative ($p<0.01$); a repeat test was more likely to be positive in women with an initial positive test (13.3%) than a negative one (3.3%) ($p<0.01$). The mean time interval between the initial and repeat test was shorter if the initial test was positive (117 days) than negative (149 days). Women aged 15–24 years with a positive test had a lower retesting rate than those aged 25–34 years (46.8% vs 53.3%). The percentage of women with a positive test who were retested differed significantly by pregnancy status (60.0% pregnant vs 44.2% nonpregnant), and pregnant women had a repeat test within 93 days compared to 125 days in nonpregnant women.
Conclusions These data from a large laboratory corporation provide insight into chlamydia testing practices among women in the USA, and suggest suboptimal adherence to retesting recommendations for both pregnant and nonpregnant women. These data can be useful to monitor the effectiveness of interventions to improve follow-up testing of women with chlamydia.

O1-S01.05 ESTIMATING THE RATE OF ANNUAL CHLAMYDIA SCREENING UPTAKE IN US WOMEN

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Background Annual chlamydia testing of all sexually active women aged 25 years and under followed by a repeated test 3 months after treatment is recommended by the US Centers for Disease Control and Prevention (CDC) guidelines. Data from the Healthcare Effectiveness Data and Information Set (HEDIS) estimate chlamydia test coverage at about 40% per year in the last 5 years. We used empirical data and mathematical models to determine whether observed patterns of chlamydia testing are consistent with CDC guidelines and with actual trends in chlamydia prevalence in US women aged 15–25 years.
Methods First, published data from women enrolled in commercial health plans from 2002 to 2006 (n=1 985 920) were used to estimate the annual chlamydia testing rate in women aged 15–25. Second, trends in chlamydia prevalence in the same age group were studied using data from 1999/2000 to 2007/2008 ($n\sim600$ each round) from the US National Health and Nutrition Examination Survey (NHANES). We used a Susceptible-Infected-Recovered-Susceptible (SIRS) model to estimate the annual screening rate that fit the chlamydia prevalence data best. The model described a closed population with behavioural parameters reflecting people aged 15–25 years. It explicitly incorporated sexual partnerships and took into account re-infection. Finally, the model was used to examine the effect of repeated chlamydia testing 3 months after treatment on chlamydia prevalence and to calculate repeat infection rates.
Results The estimated rate at which women are tested for chlamydia ranges from 0.06 to 0.11 per year, which corresponds to a chlamydia test every 9 to 16 years on average and an annual coverage of roughly 10%. We found no statistical evidence that chlamydia prevalence changed between 1999 and 2008 in sexually active women aged 15–25 years taking part in NHANES. Predictions from the model of the impact of screening at a rate of 0.11 per year were consistent with the observed stable chlamydia prevalence. Repeat chlamydia testing 3 months after treatment at the estimated screening level hardly influenced population prevalence. The percentage of women with a repeat infection was highest 3.8 months after treatment.
Conclusion Our study demonstrates the challenges of implementing chlamydia screening. This study suggests that low rates of chlamydia testing in the US have not reduced population chlamydia prevalence substantially.

O1-S01.06 ESTIMATION OF THE BURDEN OF DISEASE AND COSTS OF GENITAL *CHLAMYDIA TRACHOMATIS* INFECTION IN CANADA

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Background *Chlamydia trachomatis* (CT) is the most common notifiable infectious disease in Canada. Rates of infection have been increasing since the mid-1990s, suggesting that alternate control strategies may be required. Given that the current cost of Chlamydia infections in Canada is unknown, we sought to estimate the burden of CT in the Canadian population, to provide a foundation on which health economic analyses of competing Chlamydia control strategies can be constructed.
Methods We used an age- and sex-structured mathematical model parameterised to reproduce trends in CT prevalence in the Canadian population aged 10 to 39 years. Model parameters were derived from epidemiologic studies and by model calibration. We incorporated data on changing test patterns of asymptomatically infected individuals over time. Costs were identified, measured, and valued using a modified societal perspective and were converted to 2009 Canadian dollars. The main outcome measures were the current net cost and burden of illness attributable to CT infection.
Results The model reproduced trends in CT prevalence observed for the time period between 1991 and 2008. Under base case model assumptions, there appeared to be a trend of increasing detection of