

Epidemiology oral session 1: Chlamydia

01-S01.01 CHLAMYDIA TRENDS IN THE USA: RESULTS FROM MULTIPLE DATA SOURCES

doi:10.1136/sextrans-2011-050109.1

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Background Chlamydia is the most commonly reported notifiable disease in the US, with over 1.2 million cases reported in 2009 (409.2 per 100 000 population). While rates based on case reports have been climbing steadily over the past 20 years (155% increase), interpretation of trends is difficult due to better disease detection, reporting, and screening coverage among sexually active women aged 15–24 years. Prevalence data from other sources may be more reflective of national morbidity trends.

Methods Chlamydia trends were analysed using data from three alternative sources. Using data from the National Health and Nutrition Examination Survey (NHANES), chlamydia prevalence from 1999 to 2006 was assessed in a nationally representative sample of the US population aged 14–39. Using data from the Infertility Prevention Project (IPP), two analyses of chlamydia positivity trends in different populations were conducted. The first analysis modelled trends among women aged 15–24 years tested in family planning clinics from 2004 to 2008; the second evaluated women aged 15–24 years who were tested in prenatal clinics from 2004 to 2009. Finally, data collected through the National Job Training Program (NJTP) on trends from 2003 to 2007 among high-risk men and women aged 16–24 years, were modelled. Models (IPP and NJTP analyses) controlled for age, race, geography, and test technology.

Results Based on analyses of data from each of these populations, chlamydia prevalence trends were flat or decreasing. In NHANES, prevalence declined 48% (95% CI: 23% to 72%), from 2.6% (95% CI: 1.9% to 3.5%) in 1999–2000 to 1.4% (95% CI: 0.9% to 2.0%) in 2005–2006. In IPP prenatal clinics, chlamydia positivity also decreased; the adjusted odds of having a positive chlamydia test declined by 35% from 2004 to 2009. Likewise, in the NJTP, the odds of a positive test decreased by 19% in women and 8% in men from 2003 to 2007. In IPP family planning clinics, positivity neither increased nor decreased from 2004 to 2008.

Conclusions Although rates of chlamydia based on case reports are increasing, analyses of prevalence data suggest that the overall prevalence of chlamydia may be decreasing. Reported chlamydia case rates are likely reflections of policy and programmatic changes and do not accurately reflect morbidity trends.

01-S01.02 THE INCIDENCE OF GENITAL CHLAMYDIA TRACHOMATIS IN A COHORT OF YOUNG AUSTRALIAN WOMEN

doi:10.1136/sextrans-2011-050109.2

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Background Chlamydia is a sexually transmitted infection that can cause serious upper genital tract infections, however, in Australia there are limited population data for chlamydia. Understanding the incidence of chlamydia will be important in the design of a chlamydia screening program in Australia.

Method Women aged 16–25 years were recruited from sexual health clinics (SHC) and general practice clinics (GP) in South-Eastern Australia and consented to participate in longitudinal study over a 12-month period. Participants were requested to send back questionnaires and self-collected vaginal swabs through the post which were tested for chlamydia.

Results Overall, 1116 women were recruited from 29 clinics; with a 79% retention rate. *C trachomatis* prevalence at baseline was 4.9% (95% CI: 2.9% to 7.0%) and incidence rate for the 12-month study period was 4.4 per 100 women-years (95% CI: 3.3% to 5.9%). Prevalent *C trachomatis* was associated with having had *C trachomatis* previously [AOR: 2.0 (95% CI: 1.1% to 3.9%)], increased numbers of sexual partners [AOR: 6.4 (95% CI: 3.6% to 11.3%)] and unprotected sex [AOR: 3.1 (95% CI: 1.0% to 9.5%)]. Antibiotic use and older age were protective against having a prevalent infection ([AOR: 0.4 (95% CI: 0.2% to 1.0%)] and [AOR: 0.9 (95% CI: 0.8% to 1.0%)] respectively) and an incident infection ([AHR: 0.1 (95% CI: 0.0% to 0.6%)] and [AHR: 0.4 (95% CI: 0.2% to 0.8%)] respectively). Incident *C trachomatis* was also associated with more partners [AHR: 4.0 (95% CI: 1.9% to 8.6%)]. More than 20% of women with *C trachomatis* had a re-infection during the study [20.3% (95% CI: 11.6% to 31.7%)] with an infection rate of 20.0 (95% CI: 11.9% to 33.8%) per 100 women years. The median chlamydia organism load was 1.4×10⁵/5µl and the most common serovar identified was serovar E (51.9%).

Conclusion Chlamydia is a common STI in young Australian women, and an incidence of 4.9 per 100 women years for chlamydia suggests annual testing is appropriate for a chlamydia screening program. The high re-infection rate indicates the importance of partner notification and re-testing 3 months after treatment.

01-S01.03 HIGH YIELD IN REINFECTIONS DURING A CHLAMYDIA SCREENING PROGRAMME WHEN AUTOMATICALLY SENDING TESTKITS AFTER 6 MONTHS TO PREVIOUSLY INFECTED

doi:10.1136/sextrans-2011-050109.3

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Background Reinfections remain challenging in the control of *Chlamydia trachomatis* (Ct). In a systematic internet-based Ct Screening programme (CSI) in the Netherlands, all Ct-positive participants automatically received a test kit after 6 months to facilitate discovery of reinfections. Determinants for reinfection for two screening rounds, treatment and partner notification are discussed.

Methods CSI-home-based testkits can be requested online after register based postal invitation. Infected participants get a referral letter for their health provider to get treatment for themselves and their current partner; ex-partners can be alerted by the participant and request a test kit via the website. Participants fill in a questionnaire on sexual behaviour voluntarily. Ct-positives answer questions about treatment and partner notification 10 days after checking their results. Infected participants who do not check their result online receive it by postal letter. After 6 months retest kits are automatically sent to previously infected participants.

Results Overall, 3185 participants (4.1%) tested positive; 7% of Ct-positives did not check their result online and received a postal letter. The majority (86%) of Ct-positive participants who answered the treatment questionnaire (response 43%) was treated within 2 weeks after checking their result online; 80% of those with a current relationship reported their partner had also been treated and 16% of those with past relationships notified ex-partners via the website. One third of the ex-partners participated, 28% of whom were Ct-positive. After 6 months, 3055 participants received a retest kit and 66% responded. The reinfection rate was 8.8%. Results of the questionnaire revealed 75% of retest-positives had been treated for the initial infection and 70% had had their partner treated, while these proportions were 87% and 80% among retest-negatives. At