Background The risk of Pelvic Inflammatory Disease (PID) and Ectopic Pregnancy (EP) from Chlamydia are crucial in estimating the cost-effectiveness of screening, but they remain poorly understood. **Methods** We use evidence from RCTs of screening and controlled observational studies to estimate the risk of PID following Chlamydia and the probability PID would be prevented by annual testing. The studies are synthesised using a model that allows for the possibility that the rate of developing PID is higher in the period soon after infection. We examine the role of Chlamydia and PID in EP using prospective evidence from the Lund study, evidence on the incidence and cumulative incidence of PID and EP in England, and retrospective evidence from case control studies. We assess the consistency of the data under different sets of assumptions about the severity of undiagnosed and non-hospital referred PID. **Results** If the risk of PID due to Chlamydia is constant over time then the probability that an untreated Chlamydia episode causes clinical PID is estimated to be about 15%, and there is approximately a 60% chance that annual testing would prevent an associated PID in a woman who becomes infected. If the PID rate is assumed to be higher for 1–3 months the respective figures are 16% and 50%. We estimate that between a third and a half of EPs are caused by PID. Of these, around a third are due to Chlamydia though estimates are highly uncertain. Our comparison of different data sources suggests that undiagnosed PID carries some risk of EP. **Conclusions** Our findings support a public health strategy that (a) identifies women with Chlamydia as soon after infection as possible i.e. to get tested on change of sexual partner; (b) has a low threshold for diagnosing and treating women with pelvic pain or suspected PID.

P3.014 | **THE IMPORTANCE OF AGE IN THE ROLE OF CHLAMYDIA IN THE ETIOLOGY OF PELVIC INFLAMMATORY DISEASE**

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Background Although the importance of age in the prevalence of Chlamydia is well recognised, its importance in the relationship between Chlamydia and pelvic inflammatory disease (PID) has received little attention in epidemiology. **Methods** We generate and compare several sets of estimates of the population attributable fraction (PAF) of PID due to chlamydia by age-group using a number of data sources. Estimates are obtained using data from case-control studies and Chlamydia population prevalence in England. A second set of estimates is obtained from data on the incidence of PID, the incidence of Chlamydia, and the risk that a Chlamydia infection causes PID. We estimate the incidence of all-cause PID by age in England from routine data sources, and evidence on the proportion of PID episodes that are diagnosed. We synthesise these data with data from the control arm of the POPI trial. We estimate Chlamydia incidence by age in a multi-parameter evidence synthesis of studies of Chlamydia incidence, prevalence, and duration of infection. Finally we estimate the risk of PID following Chlamydia from a statistical synthesis of randomised controlled trials using a multistate model. A third estimate of the PAF is obtained for the POPI trial population. **Results** Prospective estimates of the PAF fall from 50% (15%, 100%) in women aged 16–19 to 20% (6%, 49%) in women aged 35–44, and estimates from retrospective data drop from 34%(17%,55%) to 6% (2%, 14%). Changes with age groups are most likely due to changes in the aetiology of PID, but part of the effect would be explained if the risk of PID due to CT, or proportion of PIDs that are diagnosed, increases with age. **Conclusions** The PAF of PID due to Chlamydia reduces dramatically with age. More attention needs to be given to age when designing and reporting results from epidemiological studies.

P3.015 | **ESTIMATING THE POPULATION PREVALENCE OF CHLAMYDIA IN EUROPE: SYSTEMATIC REVIEW AND META-ANALYSIS**

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Background Accurate information about the prevalence of Chlamydia trachomatis infections is needed to assess prevention and control measures at national and regional level. **Methods** Systematic review up to August 2012 of population-based cross-sectional studies that estimated chlamydia prevalence in high income countries, focussing on EU/EEA Member States. Data were extracted about study findings; the risk of bias was assessed and meta-analysis was performed where appropriate. Meta-regression was used to examine the relationship between chlamydia prevalence estimates and study response rates. **Results** 25 population-based studies were included from 10 EU/EEA countries and 14 studies from 6 other high income countries. Four EU/EEA Member States reported on nationally representative surveys of sexually experienced adults ≤ 26 years, with response rates from 52–71%. Chlamydia point prevalence estimates in 18–24 year olds (3 studies) ranged from 3.0–4.7% in women and from 2.4–4.7% in men. Chlamydia prevalence estimates in EU/EEA countries and other high income countries were statistically consistent. The combined estimate from 5 studies in 18–26 year olds in Europe and the USA was 4.3% (95% CI 3.7, 5.0%) in women and 3.6% (95% CI 2.9, 4.3%) in men. In most studies there was either a high risk of selection bias in the methods used or insufficient information to judge. Estimates of chlamydia prevalence were inversely associated with response rate (p = 0.005 in women, 0.011 in men). **Conclusions** Selection bias in chlamydia prevalence surveys is likely, with over-estimation of prevalence being more likely than under-estimation. Cross-sectional surveys with lower response rates are associated with higher estimates of chlamydia prevalence. In studies with low response rates the percentage of chlamydia positive tests should not be interpreted as an estimate of population prevalence. Applying standards for the reporting of prevalence surveys might help to improve consistency in future.

P3.016 | **PREVALENCE AND CORRELATES OF RECTAL-ONLY CHLAMYDIA INFECTION AT TWO CANADIAN STI CLINICS**

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Background In July 2012, two Alberta Sexually Transmitted Infection (STI) Clinics changed their testing platform for rectal chlamydia (CT) from cell culture to nucleic acid amplification testing (NAAT). A significant increase in the proportion of rectal-only CT cases occurred after the introduction of NAAT (1.9%; n = 25 pre-NAAT vs. 20.1%; n = 245 post-NAAT, P < 0.001). We sought to examine the characteristics of rectal-only CT cases. **Methods** All CT cases seen at two Alberta STI clinics between July 20 and December 31, 2012 were extracted from the provincial STI database. Variables included were demographics, clinical history,