P3.063* TRENDS OF NEUROSYPHILIS DURING A SYPHILIS EPIDEMIC IN BRITISH COLUMBIA, CANADA: IT OCCURS EARLY, NOT LATE?

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Background We sought to determine if the population increases in neurosyphilis cases in British Columbia, Canada were attributable to early (infectious) versus late (tertiary) syphilis stage of diagnosis by examining concordance of trends in syphilis by stage of disease and neurosyphilis diagnosis.
Methods Data were extracted from the provincial STD database that includes all syphilis diagnosis in British Columbia through a centralised programme, and where diagnoses are confirmed by physicians with syphilis expertise. Early syphilis was defined as either secondary (rash or mucous lesions), or early latent syphilis (asymptomatic with a negative or lower RPR titre within the previous year). Late latent syphilis and tertiary neurosyphilis diagnoses were defined by laboratory and clinical interpretation by experienced physicians. We excluded primary syphilis for this analysis since neurosyphilis does not occur during this stage. Trends in syphilis by stage and diagnosis were compared.
Results Overall rates of syphilis diagnosis increased from 2.0/100,000 in 1993 to 10.1/100,000 in 2012. Early syphilis increased over the same time period from 0.4/100,000 to 6.4/100,000 and neurosyphilis diagnoses increased from 0.03/100,000 (1 case) in 1993 to 0.8/100,000 (35 cases) in 2012. There was a major recent fluctuation in early syphilis diagnosis, with a 56% decline in 2009 –2010, followed by a 231% increase in 2011 – 2012. At the same time, a similar pattern of neurosyphilis diagnoses trends occurred, with a 65% decline in 2009/10 and 225% rise in 2011/12. In contrast, while late syphilis fluctuated modestly over this time period it remained generally stable (Range 1.3 – 2.9/100,000 with minimal increase).
Conclusion Neurosyphilis diagnoses generally mirrored early (infectious) syphilis rates at the population level, suggesting the majority of neurosyphilis in this epidemic occur during early rather than late stage infection. This has important implications on education and management strategies for syphilis control programmes.

P3.064 PATTERNS OF SEXUAL PARTNER ACCRUAL AMONG ADOLESCENT WOMEN

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Background Younger age and number of sexual partners are consistently identified STI risk factors, but the relative contributions of chronological age and total interval since first coital partner to accrual of partners has not been established in prospective studies.
Methods Participants (N = 341; 14–17 years of age at enrollment; 90% African American) were English-speaking adolescent women from lower- and middle-income families residing in areas with high rates of pregnancy and STI. We collected quarterly sexual behaviour data for an average of 3.56 years (range 0.23–8.92 years). Median number of lifetime partners increased from 2 at enrollment to 6 at the last visit.

Generalized Additive Mixed Models were used to estimate the cumulative number of partners as a function of time covariates. The cohort effect (enrollment age), the longitudinal effect (follow-up period) and their interaction were considered as predictors. Annual rate of the partner acquisition was estimated by the first derivative of the cumulative number of partners with respect to the "follow-up period".

Results Partner accrual was 2 or more partners per annum within the first 2 years of follow-up, but slowed down to about 1 partner per annum during the years 2 to 5 since enrollment. Rates of partner accrual were similar for all age groups at enrollment and declined at similar rates. Correlation between "enrollment age" and "age at first sex" was 0.26, possibly an indicator of STI and contraceptive care-seeking associated with sexual activity.
Conclusions Cross-sectional studies of STI risk among adolescents may confound age-related cohort effects with variation in interval since first sexual intercourse. Our analysis shows that higher rates of partner accrual decrease within two years regardless of the age of first coitus. This suggests that STI prevention based on delay of coitus among adolescent women should be supplemented with efforts to reduce rates of partner accrual.

P3.065 PARTNER-CONCURRENCY ASSOCIATED WITH HSV-2 INFECTION IN YOUNG SOUTH AFRICANS

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Objectives While much is known about the individual level risk factors for HSV-2 infection, little is known about why only some populations develop generalised HSV-2 epidemics. This study aims to assess the extent to which partner-concurrency (a factor which operates at both the partnership- and network-level) may be responsible.
Methods We utilised multivariate logistic regression to analyse the relationship between HSV-2 seropositivity and potential risk factors in data from a representative cross-sectional survey of 14–24 year olds from a township in South Africa.
Results The overall prevalence of HSV-2 was 53.3% among women and 17% among men. For men four factors remained significantly associated with HSV-2 infection in the multivariate regression analysis; total number of sex acts, being a migrant labourer, Zulu ethnicity and being HIV positive. For women eight factors were associated with HSV-2 infection; increasing age, partner concurrency (having a partner who had other partners), an older partner, total number of sex acts, using hormonal contraception, Xhosa ethnicity, syphilis seropositivity and being HIV positive.
Conclusion Partner-concurrency is associated with increased HSV-2 seropositivity in women.

P3.066* RATES AND TRENDS OF PELVIC INFLAMMATORY DISEASE AND ECTOPIC PREGNANCY IN ENGLAND UP TO 2011: WHAT CAN THESE DATA TELL US ABOUT CHLAMYDIA EPIDEMIOLOGY AND CONTROL?

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Background Chlamydia trachomatis (CT) is one cause of pelvic inflammatory disease (PID) and ectopic pregnancy (EP). Rates of CT testing and diagnosis have increased since the 1990s, especially following full implementation of the National Chlamydia Screening Programme in 2008. We investigated PID and EP trends in the context of increased chlamydia screening.
Methods Rates of clinical PID among 15 to 44 year old women were calculated using the Clinical Practice Research Datalink (CPRD, diagnoses from a sample of primary care sites) for 2000–2011. Diagnoses were classified as 'definite', 'probable' or 'possible' PID according to the assigned medical codes. Incidence of EP per conception among 15–44 year old females was calculated using the CPRD and the Inpatient Hospital Episode Statistics (HES) (1998–2011).