Poster presentations

**P3.242** WITHDRAWN BY AUTHOR

**P3.243** INFLUENCE OF SCALE AND ZONE ON SYPHILIS TRENDS INTERPRETATION


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**Background** We investigated spatial clustering of primary and secondary syphilis rates in North Carolina (2003–2010) using multiple scales and geographical boundaries. We examined the influence of changes in scale and boundary on identification of spatial clusters using two cluster detection methods, local Moran’s I and Kulldorff’s space scan statistic.

**Methods** We used two cluster detection methods: (1) local Moran’s I with empirical Bayes (EB) standardised rate statistic and (2) Kulldorff’s space scan statistic using a variable size moving circular window. We evaluated three geographic zones with decreasing boundary area, North Carolina, Piedmont region, and Mecklenburg County, at two spatial scales (census tract, census block group). We report results for Mecklenburg County.

**Results** Using local Moran’s I, block group clusters were in the same location as tract clusters, but were more concentrated. Median rates were higher among block group clusters compared with tract clusters. As boundary areas decreased, some clusters in peripheral tracts and block groups were lost. High rate block groups were more likely to persist, while some high rate peripheral tracts were lost.

With Kulldorff’s scan statistic, block group clusters were more concentrated than clusters in census tracts. Reducing boundary areas had little effect on census tract clusters detected using Kulldorff’s scan statistic. Cluster size decreased significantly when the boundary was restricted to Mecklenburg County. The reduction in cluster size reflected loss of a few high rate block groups peripherally and many block groups with a rate of zero.

Clusters detected using local Moran’s I and Kulldorff’s scan statistic overlapped, but Kulldorff’s scan clusters were much larger with a high proportion of zero rate tracts/block groups.

**Conclusion** In efforts to understand STI epidemiology spatially, investigators must carefully consider the spatial scale, geographical area of interest, and cluster detection approach.

**P3.244** PREVALENCE OF SEXUALLY TRANSMITTED INFECTIONS IN MULTIPLE SAMPLE TYPES COLLECTED FROM HIV-1 POSITIVE MEN


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**Background** STI are a significant cause of morbidity in Europe, particularly among young adults and men who have sex with men (MSM). Monitoring the spread of STI across key populations allows development of targeted prevention interventions.

**Methods** Surveillance for chlamydia, gonorrhoea and syphilis in the European Union (EU/EEA) is coordinated by the European Centre for Disease Prevention and Control since 2009. Data reported by Member States covering the period 1990–2011 were analysed.

**Results** In 2011, 346911 cases of chlamydia (rate: 175 per 10000 population) were reported compared to 39179 cases of gonorrhoea (12.6/100000) and 19798 cases of syphilis (4.9/100000). Chlamydia was more frequently reported among women (male-to-female ratio: 0.7) in contrast to gonorrhoea and syphilis (male-to-female ratios: 2.7 and 3.9 respectively). The highest age and gender-specific rates were observed among 15–19 year old females for chlamydia (2048); 20–24 year-old males for gonorrhoea (71) and 25–24 year-old males for syphilis (16). Young adults (15–24 years) accounted for 73% of chlamydia, 42% of gonorrhoea and 16% of syphilis cases. Transmission among MSM was more frequently reported for syphilis (42%) and gonorrhoea (33%) cases than for chlamydia (5%). HIV co-infection was reported among 11% of gonorrhoea and 28% of syphilis cases. Rates of chlamydia have increased by 133% between 2000 and 2011 among countries reporting consistently. Gonorrhoea rates have increased by 27% since 2008 and syphilis rates increased by 10% in 2011.

**Conclusion** Surveillance data shows diversity in reported rates and trends across the EU/EEA. Increasing rates of chlamydia reflect strengthened case detection and improved diagnostics. Young adults constitute a large proportion of cases of chlamydia and gonorrhoea. Transmission among MSM accounts for the majority of syphilis and, increasingly, gonorrhoea spread. Both key populations need to be better targeted through specific prevention and control measures.

**P3.241** EPIDEMIOLOGY OF SEXUALLY TRANSMITTED INFECTIONS IN EUROPE 1990–2011


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**Background** Sexual transmitted infections (STI) are a significant cause of morbidity in Europe, particularly among young adults and men who have sex with men (MSM). Monitoring the spread of STI across key populations allows development of targeted prevention interventions.

**Methods** Surveillance for chlamydia, gonorrhoea and syphilis in the European Union (EU/EEA) is coordinated by the European Centre for Disease Prevention and Control since 2009. Data reported by Member States covering the period 1990–2011 were analysed.

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**Background** Detection of sexually transmitted infections (STIs) in HIV-1 positive (+) men is essential to ensure appropriate treatment and to reduce HIV and STI transmission. We evaluated the baseline prevalences of Chlamydia trachomatis (CT), Neisseria gonorrhoeae (NG), Trichomonas vaginalis (TV), Mycoplasma genitalium (MG) and high risk human papillomavirus (HR-HPV) infections in HIV-1+ men.

**Methods** HIV-1 (+) men from three southern California (CA) sites (n = 179) and from one New York (NY) site (n = 254) were screened using APTIMA TMA assays (Hologic/Gen-Probe Inc.) for CT, NG, TV, MG-HIV-HPV (with HR-HPV genotyping for HPV-16 and HPV-18/45). Specimen types tested (1–3 per subject) were collected between 11/2010 and 9/2012 and included urine for CT (n = 356), NG (n = 357), TV (n = 357), MG (n = 357), throat for CT (n = 86), NG (n = 178), TV (n = 172), MG (n = 179), HR-HPV (n = 172) and rectal for CT (n = 263), NG (n = 263), TV (n = 255), MG (n = 263), HR-HPV (n = 251). Prevalences were calculated by patient and by specimen types.

**Results** Overall, 218/453 (50.4%) of the subjects were positive for an STI: 6.2% having > 1 STI; 4.9% had 2 STIs (HPV/NG, TV/NG, MG/NG, MG/CT, MG/NG, CT/NG), and 1.4% had 3 STIs (HPV/MG/CT, TV/MG/NG, MG/CT/NG). Pathogen prevalence by specimen type and patient are listed below:

<table>
<thead>
<tr>
<th>Pathogen Prevalence (%)</th>
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<tbody>
<tr>
<td><strong>By Specimen</strong></td>
</tr>
<tr>
<td>Rectal</td>
</tr>
<tr>
<td>Urine</td>
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<td>Throat</td>
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<td>By Patient</td>
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Genotyping of 127 HR-HPV+ specimens determined that 25.2% contained HPV-16; 10.2% HPV-18/45; 6.3% HPV-16 and HPV-18/45, and 58.3% were negative for HPV-16, 18 or 45.

**Conclusions** The overall high prevalence of STIs, often multiple STIs per individual, suggests the need to expand screening for multiple STIs in all anatomic sites. Rectal specimens demonstrated the most STIs, especially HPV. Mycoplasma, a pathogen that is not usually tested for, was the most common bacterial STI.

**Methods** In 2010, we established a cohort of individuals from ten sexual health clinics that were already enrolled in AHOD. We calculated diagnosis rates for four STI (Chlamydia, gonorrhea, infectious syphilis, anogenital warts) from 2005–2010, and true incidence rates from 2010–2011.

**Results** At baseline (2010), the cohort (n = 520) did not differ markedly from the rest of AHOD (n = 1668). There was a gradual increase in chlamydial infections, from 3.4/100person-years (py) (95% CI 1.9–5.7) in 2005, to 6.7/100py (95% CI 4.5–9.5) in 2011, with a substantial peak in 2010, 8.1/100py (95% CI 5.6–11.2). The cases were evenly distributed between urethral (49%) and rectal (51%) infections. Similarly, gonococcal infections increased, with a peak in 2010 (4.7/100py, 95% CI 5.6–11.2), but rectal (63%) outnumbered urethral (57%) infections. Infectious syphilis showed several peaks, the largest in 2008 (5.3/100py, 95% CI 3.3–8.0). The incidence of genital warts declined from 7.5/100py in 2005 (95% CI 4.8–11.3) to 2.4/100py in 2011 (95% CI 1.1–4.5).

**Conclusions** The incidence of chlamydial and gonococcal infections, and infectious syphilis was higher than previous estimates in Australia. The incidence of genital warts was lower. Ongoing incidence data will assess relationships between STI, HIV-viral load, immunodeficiency, ARV and STI treatment, and patient characteristics.