p = 0.002), whereas there was a non-significant HIV increase among MSM-T with syphilis (OR: 1.36, p = 0.086).
Conclusion Overall HIV prevalence declined significantly among MSM-T from round 1 to round 2 in Avahan intervention districts in south India. The lack of decline in presence of syphilis suggests that the latter is an important marker of risky behaviour. These results, in conjunction with those obtained in other groups targeted by the intervention; suggest that Avahan had a major impact on the HIV epidemic in south India.

P3.129 IDENTIFYING RECENTLY ACQUIRED HIV INFECTIONS AMONG NEWLY DIAGNOSED MEN WHO HAVE SEX WITH MEN IN THE NETHERLANDS

doi:10.1136/sextrans-2013-051184.0588

[1,2]J Sane, [3]M Koot, [4]T Heijman, [3]B Hogema, [4]M van Veen, [5]H Götz, [4]H Fennema, [1]**E Op de Coul**. *[1]Unit of Epidemiology and Surveillance, RIVM, Centre for Infectious Disease Control, Bilthoven, The Netherlands; [2]European Programme for Intervention Epidemiology Training (EPIET), European Centre for Disease Prevention and Control (ECDC), Stockholm, Sweden; [3]Sanquin Blood Supply, Virus Diagnostic Services, Amsterdam, The Netherlands; [4]Amsterdam Public Health Service, Cluster of Infectious Diseases, Department of Research and STI outpatient clinic, Amsterdam, The Netherlands; [5]Department of Infectious Disease Control, Municipal Public Health Service Rotterdam-Rijnmond, Rotterdam, The Netherlands*

Background The number of newly diagnosed HIV infections among men who have sex with men (MSM) has gradually increased in the Netherlands during the past decade. However, the current HIV surveillance system cannot differentiate recent HIV infections from longstanding HIV infections. We determined the proportion of recent HIV infections (RI) and estimated HIV incidence using Recent Infection Testing Algorithm (RITA) among newly diagnosed HIV infections among MSM in Amsterdam and Rotterdam.
Methods Plasma samples (n = 251) collected from newly HIV-diagnosed MSM during 2009–2011 at the STI clinics in Amsterdam and Rotterdam were analysed in the study. To test for recent infections, anti-HIV avidity index (AI) was measured in plasma with Architect HIV Ag/Ab Combo immunoassay. Samples were classified as recent if the AI was ≤ 0.80. Data on viral load, CD4 count and previous HIV testing were incorporated in the RITA algorithm to minimise false recent infections. HIV incidence and 95% confidence intervals (CI) were estimated using previously described methods.
Results Of the 251 samples from MSM, 83 were classified as recent by the avidity index. Five cases were reclassified as non-recent based on low CD4 count (n = 2) and viral load (n = 2) and history of HIV infection (n = 1) and thus, 78/251 (31%) infections were determined as recent on RITA. Proportions of RIs in 2009, 2010 and 2011 were 32%, 28% and 33%, respectively. The estimate for combined incidence was 1.5% per year (95% CI 1.17–1.83). No significant changes over time were observed.
Conclusions This study estimated the proportion of RIs and HIV incidence among MSM in the Netherlands using the RITA algorithm for the first time. The proportion of RIs was comparable to similar studies in other European countries such as the UK, which however used different methodology.

P3.130 HIGH PREVALENCE LEVELS OF HIV AND SEXUALLY TRANSMISSIBLE INFECTIONS AMONG MONEY BOYS IN CHINA

doi:10.1136/sextrans-2013-051184.0589

[1]**L Zhang**, [1]E P Chow, [2]X Fu, [1]K I Iu, [1]D P Wilson. *[1]The University of New South UK, Kensington, Australia; [2]Renmin University of China, Beijing, China*

Background Commercial sex workers within the population of men who have sex with men (MSM) in China, known as 'money boys' (MBs), are perceived to be at higher risk for HIV and other sexually-transmissible infections (STIs).
Methods We conducted a systematic review and meta-analyses from peer-reviewed literature accessed in two English (PubMed and Embase) and three Chinese databases (CNKI, CQVIP, Wanfang data). A data synthesis exercise was carried out to determine the extent and patterns of behaviours and HIV/STI epidemics. Pooled estimates, with 95% confidence intervals, for each study variable were calculated.
Results Thirty-two eligible articles (9 in English and 23 in Chinese) were identified. Our analysis indicated that Chinese MBs are generally young, currently employed, at low literacy levels and highly mobile. The prevalence of HIV, syphilis and co-infection among MBs were estimated to be 6.0% (4.2–8.5%), 12.4% (9.9–15.3%) and 2.2% (1.1–4.1%) over the period of 2004–2011. Level of condom use among MBs is generally higher than the broader MSM population (69.2% at last act, and 48.5% consistently over the past 6 months). One-third of the Chinese MBs identified themselves as bisexual and 8.7% (5.6–13.5%) are currently married to a female. Further, 40.9% (34.5–47.7%) of MBs participated in group sex in the past 12 months and 14.8% (10.6 – 20.3%) concurrently use illicit drugs.
Conclusions HIV/STI epidemics have affected Chinese MBs but the evidence suggests that the extent of infections is not greater than among other MSM in China.

P3.131 TRENDS IN HIV INFECTION SURVEILLANCE DATA AMONG MEN WHO HAVE SEX WITH MEN IN ALBANIA, 1993–2012

doi:10.1136/sextrans-2013-051184.0590

M Dervishi, S Bino, R Bani, S Qyra, F Balla, R Dudushi. *Institute of Public Health, Tirana, Albania*

Background Albania is still a low HIV prevalence country, however the recent reports on the growing HIV reported cases per year show an increase of reported HIV among MSM in Albania. Furthermore, the results from the repeated bio-behavioural surveillance studies in 2005 and 2008, and 2011 indicate that high risk behaviours are still present among MSM
Methods During the years 1993 to 2012 our study shows increase of HIV among MSM and their socio-demographic and epidemiological characteristics of this group in Albania. These cases are described by age, place of infection, clinical stage of HIV infection, STI co-infection and source partner. To get the estimated trends over this period we used simple linear regression.
Results During the study period, 57 MSM, aged from 17 to 73 years, were diagnosed with HIV. No significant trends over time in overall median age (36 years) were observed. Most of the MSM or, 70% (40 cases) were infected in Albania and the rest abroad. In the years 1993–2007, 1 to 3 MSM were diagnosed with HIV each year, while in the years 2007–2012 this increased to between 7 and 9 cases. The proportion of MSM, presenting AIDS make up 33% (19 cases) and the rest were diagnosed in the HIV stage. 28% (16) of them were married. STI co-infection was reported in 15.7% (9 cases). The majority of them live in urban area, 64% of them live in capital city, 7% of them belong to Roma ethnicity.
Conclusions HIV cases among MSM per year are increasing. Current prevalence of HIV in MSM is higher than the general population (from BIO-BSS conducted). The increase in STI co-infections indicates risky sexual behaviour and a potential to spread both HIV and other sexually transmitted infections so HIV prevention strategies should be targeted on this vulnerable group.

P3.132 COULD HIV SEROSORTING EXPLAIN INCREASES IN SYPHILIS PREVALENCE AMONG MEN WHO HAVE SEX WITH MEN? - A MATHEMATICAL MODELLING STUDY

doi:10.1136/sextrans-2013-051184.0591

[1]**A Lucht**, [2]M Shah, [3,4]M Kretzschmar. *[1]Labor Krone, Bad Salzuflen, Germany; [2]Johns Hopkins University, Division of Infectious Diseases, Baltimore, MD, United States; [3]University Medical Centre Utrecht, Julius Centre for Health Sciences & Primary Care, Utrecht, The Netherlands; [4]Centre for Infectious Diseases Control, RIVM, Bilthoven, The Netherlands*

Background A frequently used HIV risk reduction method among men who have sex with men (MSM) is serosorting, which can be defined as a restriction of sexual partnerships to those who are of the same HIV serostatus. This partner selection strategy has been shown to reduce HIV transmission in epidemiological studies and mathematical models, but may lead to acquisition of other sexually transmitted infections (STI) including syphilis. We sought to evaluate the impact of HIV serosorting on syphilis prevalence, and to assess whether serosorting could account for an observed rise in syphilis incidence among MSM in San Francisco.
Methods A deterministic SIRS (susceptible-infectious-resistant-susceptible) model of syphilis transmission among HIV-negative and HIV-positive MSM was developed; model input parameters were based on epidemiological data from San Francisco between 1998 and 2004. The primary outcome was the impact of HIV serosorting on syphilis prevalence; we further evaluated the influence of HIV prevalence and average number of sexual partnerships on this serosorting effect.
Results Simulations showed that for base-case conditions, HIV serosorting increases syphilis transmission among HIV-positive and also among HIV-negative MSM so that syphilis could become endemic like in San Francisco. Only under very specific circumstances with high levels of serosorting among HIV-negative men can serosorting decrease syphilis prevalence. The size of the impact of serosorting on syphilis prevalence depends on HIV prevalence and partnership number.
Conclusions Our mathematical model adds evidence to the conclusion from an earlier ecological study suggesting that serosorting of HIV-negative and HIV-positive MSM may explain the increased syphilis incidence observed in San Francisco between 1998 and 2004. Our model results may have important implications for MSM not only in the US. Public health recommendations on HIV serosorting as an HIV harm reduction strategy should take into account the potential unintended consequence of increasing the prevalence of other STIs.

P3.133 POTENTIAL HIV TRANSMISSIONS FROM INFECTED DRUG INJECTORS AND MEN WHO HAVE SEX WITH MEN IN SAINT PETERSBURG, RUSSIA

doi:10.1136/sextrans-2013-051184.0592

[1]**E W White**, [1]L Niccolai, [2]O V Toussova, [2]S V Verevochkin, [2]A P Kozlov, [1]R Heimer. *[1]Yale School of Public Health, New Haven, CT, United States; [2]The Biomedical Center, Saint Petersburg, Russian Federation*

Background Less is known about HIV prevalence and incidence among men who have sex with men (MSM) in Saint Petersburg, Russia than in other large European cities, but it is clear that in that city the public health impact of HIV on drug injectors and their sex partners is remarkably high. We estimated the public health impact
Methods Respondent-driven sampling (RDS) yielded behavioural and HIV testing data and specimens for HIV antibody testing from 201 MSM who did not report injecting drugs and 691 drug injectors who did not report male-male sex. We estimated the potential for sexual HIV transmission from MSM and injectors unaware of their HIV infection, comparing unsafe encounters.
Results One quarter of people who inject drugs and 5% of MSM were HIV infected and unaware of their infection. Based on our prior estimate that there were 83,100 drug injectors living in Saint Petersburg; about 20,000 injectors are unaware of their HIV infection. If 1% of the general population are MSM, we estimate that there are about 3,000 MSM with undiagnosed HIV infection in Saint Petersburg. The 169 injectors with undiagnosed infection reported unprotected sex with 37 partners who themselves injected drugs, and that the proportion of injectors who were uninfected was 56%. Injectors with undiagnosed infection reported unprotected sex with 26 partners who did not inject drugs; the uninfected proportion of non-injecting partners of drug injectors was 83%. Therefore, undiagnosed, HIV+ injectors exposed an estimated mean 0.25 uninfected partners in six months time. Those injectors expose 5,821 (95% CI 3,092–11,095) uninfected sex partners during a six-month period, whereas the 3,000 MSM with undiagnosed HIV infection in Saint Petersburg expose 4,800 (95% CI 4,320–12,000).
Conclusion New sexual infections eminating from MSM may become comparable to those from drug injectors.

P3.134 THE AGE-SPECIFIC DISTRIBUTION OF GENITAL HUMAN PAPILLOMAVIRUS (HPV) INFECTION AND HERPES SIMPLEX VIRUS-2 (HSV-2) ANTIBODIES AMONG MEN WITH GENDER-FIXED AND GENDER-FLUID SEXUAL BEHAVIOUR: THE HIM STUDY

doi:10.1136/sextrans-2013-051184.0593

[1]**A G Nyitray**, [1]M W Ross, [1]M Wilkerson, [2]L L Villa, [3]M Abrahamsen, [3]M Papenfuss, [4]E Lazcano-Ponce, [3]A R Giuliano. *[1]University of Texas School of Public Health, Houston, TX, United States; [2]School of Medicine, University of São Paulo, São Paulo, Brazil; [3]H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL, United States; [4]Instituto Nacional de Salud Publica, Cuernavaca, Mexico*

Background We investigated the age-specific distribution of genital HPV and HSV-2 antibodies among men whose sexual behaviour was confined either to men or to women (fixed) vs men whose sexual behaviour included both sexes (fluid). We hypothesised that fluid men may have more exposure to viral STIs.
Methods A total 4123 men from São Paulo, Brazil, Cuernavaca, Mexico, and Tampa, USA, aged 18–70 years, reported their sexual behaviour every six months for 2 years. Analysis was restricted to 1412 Brazilian men where fluidity had a much higher prevalence. Genital exfoliated cells for HPV PCR genotyping were collected every 6 months and blood for HSV-2 antibody testing was collected every 12 months. We used chi square and the Cochran-Armitage test to assess associations and age-specific linear trends.
Results Of 1292 men at enrollment who provided sexual behaviour information at ≥ 2 time points, those aged 17–24 reported the most fluidity (24%) and those aged 50–70 reported the least (16%) although the linear trend was not significant ($p = 0.12$). After two years of follow up, HPV prevalence was comparable and stable by age among both fixed and fluid men for any HPV type, oncogenic types, and nononcogenic types. Prevalence of HSV-2 antibodies was higher among fluid than fixed men (65% and 59%, respectively) although not significantly different ($p = 0.06$). The prevalence of HSV-2 antibodies increased by age among both fixed and fluid men (p for trend < 0.0001 and $= 0.0006$, respectively).
Conclusions These data suggest that fluidity is not associated with increased prevalence of HPV and HSV-2. There was no trend for genital HPV by age which might be expected of a highly prevalent viral infection that often escapes immune surveillance; however, age was associated with HSV-2 antibodies as would be expected of a highly prevalent viral infection that less often escapes immune recognition.

P3.135 HIGH PREVALENCE, INCIDENCE AND CLEARANCE OF ANAL HIGH-GRADE SQUAMOUS INTRAEPITHELIAL LESIONS (HSIL): EARLY EVIDENCE FROM A NATURAL HISTORY STUDY IN HOMOSEXUAL MEN

doi:10.1136/sextrans-2013-051184.0594