

014.2 HIGH INCIDENCE OF NON-URETHRAL *NEISSERIA GONORRHOEA* AND *CHLAMYDIA TRACHOMATIS* INFECTIONS AMONG MEN WHO HAVE SEX WITH MEN AND TRANSGENDER WOMEN IN LIMA, PERU

¹Lao-Tzu Allan-Blitz, ²Kelika A. Konda, ³Silver K. Vargas, ³Gino M. Calvo, ³Carlos F. Caceres, ²Jeffrey D. Klausner. ¹David Geffen School of Medicine, UCLA and Saphir Program, USA; ²University of California – Los Angeles, USA; ³Universidad Peruana Cayetano Heredia, Peru

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Introduction Non-urethral *N. gonorrhoeae* infections have been associated with antimicrobial resistance as well as increased HIV transmission and acquisition, however, incidence data from low and middle-income countries are lacking.

Methods We collected anal and pharyngeal specimens from MSM and transgender women seeking sexually transmitted disease clinical services quarterly for 2 years. Incident infection was defined as having a positive nucleic acid test among those with no prior infection or prior treatment. We used generalised estimating equations to calculate adjusted incident rate ratios (aIRR). We grouped infections by anatomic site. All models included any condomless sex and number of male sex partners in prior 3 months.

Results Of 401 participants, 22% identified as transgender and 31% had HIV infection at baseline. Incidence of anal infection was 30 and 40 cases per 100 person-years with *N. gonorrhoeae* and *C. trachomatis*, respectively, while incidence of pharyngeal infection was 22 and 12 cases per 100 person-years with *N. gonorrhoeae* and *C. trachomatis*, respectively. In the pharyngeal infection model with either organism, transgender identification was positively associated (aIRR=2.1; 95% CI 1.4–3.0) compared with MSM, whereas each decade increase in age was negatively associated (aIRR=0.7; 95% CI 0.6–0.9). In the anal infection model with either organism, HIV infection was positively associated (aIRR=1.6; 95% CI 1.2–2.1), whereas each decade increase in age was negatively associated (aIRR=0.7; 95% CI 0.6–0.9). Anal infection incidence was increased in those reporting receptive (aIRR=2.7; 95% CI 1.5–4.9) and both receptive/insertive (aIRR=2.6; 95% CI 1.5–4.6) sex versus reporting exclusively insertive sex.

Conclusion Incident non-urethral *N. gonorrhoeae* and *C. trachomatis* infections were common among MSM and transgender women in Lima, Peru, adding to the paucity of data from Latin America, especially among transgender women. Our findings support World Health Organisation recommendations for anal screening and argue for the addition of pharyngeal screening.

014.3 HOW WAR AND RISKY SEXUAL BEHAVIOURS SHAPE THE UKRAINIAN HIV EPIDEMIC: A PHYLOGEOGRAPHIC ANALYSIS

¹Tetyana I Vasylyeva, ²Mariia Liulchuk, ³Samuel R. Friedman, ⁴Iana Sazonova, ¹Nuno R. Faria, ¹Aris Katzourakis, ²Natalia Babii, ²Alla Scherbinska, ¹Oliver G. Pybus, ⁴Pavlo Smyrnov, ⁵Tamyo Mbisa, ⁶Dimitrios Paraskevis, ⁶Nuno R. Faria, ¹Gkikas Magiorkinis. ¹University of Oxford, UK; ²L.V.Gromashevskij Institute of Epidemiology and Infectious Diseases of National Academy of Sciences, Ukraine; ³National Development And Research Institutes; ⁴Alliance for Public Health, Ukraine; ⁵Public Health UK; ⁶Athens University Medical School

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Introduction Ukraine has one of the largest HIV epidemics in Europe that was historically driven by people who inject drugs (PWID). The epidemic showed signs of stabilisation since 2012, but the recent war in the East of the country might be reinforcing the virus spread. We have studied HIV flow within Ukraine in recent years and explored factors that might explain it.

Methods We used HIV subtype-A pol nucleotide sequences sampled in 2012–2015 from 427 patients of 24 regional AIDS Centres along with 40 publicly available reference sequences sampled between 1986–2010. We used phylogeographic analysis in BEAST to reconstruct viral spread among different geographic regions of Ukraine. We further used data from an Integrated Bio-Behavioural survey of PWID conducted in Ukraine in 2013. We built logistic regression model to test for an association between the virus flow and the reported risky sexual and injecting behaviours of PWID, the number of internally displaced persons, and HIV prevalence per region.

Results Infections in the Centre, East, and Crimea were 3.9, 3.6, and 3.3 times, respectively, more likely to originate from Donetsk (the biggest city in the occupied East), suggesting that the epidemic is spreading westwards. Additionally, multivariable regression analyses showed that regions with a higher proportion of PWID practicing risky sexual behaviours were more likely to both be a source of infection to other regions and a recipient of infection from them. No such association was found for risky injecting behaviours.

Conclusion We show that in recent years HIV has been spreading westwards in Ukraine at a higher than expected rate. This may be a consequence of the war that has led to over a million people migrating from the East to other regions of Ukraine. Risky sexual practices that involve PWID may be facilitating this spread. The estimated patterns of HIV-1 migration within Ukraine suggest that an effective prevention response should involve PWID, their sexual partners, and internally displaced people.

014.4 OROPHARYNGEAL TRANSMISSION OF *NEISSERIA GONORRHOEA* AMONG MEN WHO HAVE SEX WITH MEN AND POTENTIAL IMPACTS OF MOUTHWASH

¹Lei Zhang, ²David G Regan, ¹Eric Pf Chow, ³Manoj Gambhir, ¹Vincent Cornelisse, ²Andrew Grulich, ¹Jason Ong, ⁴David A Lewis, Jane Hocking, ¹Christopher K Fairley. ¹Melbourne Sexual Health Centre, Australia; ²Kirby Institute, The University of New South Wales, Australia; ³School of Public Health and Preventive Medicine, Faculty of Medicine, Monash University, Melbourne, Australia; ⁴Marie Bashir Institute for Infectious Diseases and Biosecurity and Sydney Medical School-Westmead, Australia

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Introduction Gonorrhoea notifications are rapidly rising in men who have sex with men (MSM). We developed a model to assess mouthwash as a novel intervention for gonorrhoea control.

Methods We developed a model of *Neisseria gonorrhoeae* (NG) transmission to explain anatomic site-specific prevalence of gonorrhoea among MSM. The model was calibrated to available epidemiological and behavioural data. We estimated the contribution of various sexual acts to gonorrhoea incidence and evaluate the potential impacts of screening scale-up and utilisation of mouthwash on the gonorrhoea epidemic.

Results We calibrated the model to prevalence of oropharyngeal, anal and urethral gonorrhoea of 8.6% (7.7%–9.5%), 8.3% (7.4%–10.4%) and 0.20% (0.04%–0.35%), respectively,