

ethnicity, sexual partner type, anonymous partners, sex outside Alberta, or symptoms; however, cases from Calgary were significantly older than cases from Edmonton (median age: 34 years, IQR: 28–42 vs 29 years, IQR: 25–36, $p=0.001$) and more cases were co-infected with HIV (20.5% vs 10.0%; $p=0.008$). Anatomical site was similarly distributed between clinics with specimens from the rectum (61.2%; $n=208$), urine (26.2%; $n=96$) and pharynx (10.6%; $n=36$). LGV sequencing was feasible on 336 specimens. The LGV positivity rate was 1.2% ($n=4$; 95% CI 0.2–2.4); three rectal LGV cases (1 asymptomatic) and one asymptomatic pharyngeal LGV case were detected, of which two were HIV-positive.

Conclusion LGV was rare in our MSM population; however, one pharyngeal and one asymptomatic case were found. If untreated, these cases could serve as a reservoir and play an important role in transmission.

Disclosure No significant relationships.

P512

QUANTIFYING SEXUAL MIXING BY HIV STATUS AND PRE-EXPOSURE PROPHYLAXIS (PREP) USE AMONG MEN WHO HAVE SEX (MSM) WITH MEN

¹Linwei Wang, ¹Nasheed Moqueet, ²Gilles Lambert, ³Daniel Grace, ⁴Ricky Rodrigues, ⁵Joseph Cox, ⁶Nathan Lachowsky, ⁴Syed Noor, ⁷Heather Armstrong, ¹Darrell Tan, ¹Ann Burchell, ¹Huiting Ma, ¹Jesse Knight*, ⁸Stefan Baral, ⁴Trevor Hart, ⁹David Moore, ¹⁰Sharmistha Mishra. ¹Li Ka Shing Knowledge Institute, St. Michael's Hospital, Centre for Urban Health Solutions, Toronto, Canada; ²National Institute of Public Health of Quebec, Montreal, Canada; ³University of Toronto, Dalla Lana School of Public Health, Toronto, Canada; ⁴Ryerson University, Toronto, Canada; ⁵McGill University, Montreal, Canada; ⁶University of Victoria, School of Public Health and Social Policy, Victoria, Canada; ⁷University of British Columbia, Vancouver, Canada; ⁸Johns Hopkins University, Baltimore, USA; ⁹BC Centre for Excellence in HIV/AIDS, Vancouver, Canada; ¹⁰St. Michael's Hospital, Centre for Urban Health Solutions, Toronto, Canada

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Background Existing measures of preferential partner selection do not account for attribute-concordance by chance. We quantified network-level sexual mixing by HIV status and PrEP use using a balancing partnership approach.

Methods Data were from *Engage*, a cross-sectional survey of MSM ≥ 16 year-old in three Canadian cities (2017–2018). MSM with ≥ 1 anal/oral sex partners in the past six months (P6M) reported their own and partners' HIV status and PrEP use. After stratifying by respondents' HIV status (positive/negative/unknown) and P6M PrEP use (yes/no), we compared observed seroconcordance to that expected by chance among P6M-partnerships with known-status. Within HIV negative-concordant recent partnerships, we compared observed concordance in PrEP use at last sex to chance. Concordance by chance is calculated under proportionate-mixing assumption, which means the distribution of partnerships by partners' attributes equals that by respondents' attributes as a result of partnership balancing. We used chi-squared tests for all comparisons.

Results Of the 22,102 P6M-partnerships reported by 1881 respondents (17.0%, 74.5% and 8.5% HIV-positive, negative and unknown, respectively), 60.2% comprised partners' of known-status. 64.3% of HIV-positive respondents' partnerships were HIV-positive (vs chance 24.6%, $p<0.001$). HIV-negative or status-unknown respondents had higher proportions of

HIV-negative partners (87.0% and 87.5%, respectively, vs chance 75.4%, $p<0.001$). HIV-negative respondents on PrEP had a higher proportion of HIV-positive partners than those not on PrEP (20.6% vs 8.4%; $p<0.001$). HIV-negative respondents on PrEP had a higher proportion of HIV-negative partners on PrEP (55.8% vs 34.7%); those not on PrEP had a higher proportion of HIV-negative partners not on PrEP (78.6% vs 65.3%), than chance ($p<0.001$).

Conclusion Network-level serosorting and PrEP matching were evident after accounting for distribution of partnerships by chance. PrEP-mediated changes to mixing, such as less serosorting among MSM on PrEP, may indirectly influence the population-level HIV prevention impact of PrEP and should be included in the monitoring and evaluation of PrEP roll-out.

Disclosure No significant relationships.

P513

CONVECTION MIXING AND THE SOCIAL GEOGRAPHY OF PARTNER SELECTION AMONG SEXUAL MINORITY MEN IN TORONTO, CANADA

¹Dionne Gesink*, ²Travis Salway, ³Lauren Kimura, ⁴James Connell, ⁵Michael Widener, ⁶Olivier Ferlatte. ¹University of Toronto, Dalla Lana School of Public Health, Toronto, Canada; ²BC Centre for Disease Control, Vancouver, Canada; ³University of Toronto, Dalla Lana School of Public Health, Toronto, Canada; ⁴University of British Columbia, School of Population and Public Health, Vancouver, Canada; ⁵University of Toronto, Geography, Toronto, Canada; ⁶BC Centre for Substance Use, Vancouver, Canada

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Background The geographic distribution of sexually transmitted infections (STI) reflects the underlying social process of sexual partner selection. Our purpose was to explore the social geography of sexual partner selection among sexual minority men and use the results to develop a mid-level theory of urban-non-urban mixing patterns between sexual partners.

Methods This integrated mixed methods study involved in-depth interviews with 31 sexual minority men who lived, worked, or socialized in Toronto, Canada, during June and July 2016. We asked participants to describe how they found sexual partners and to reconstruct their egocentric sexual networks for the previous three months. Interviews were conducted iteratively and until theoretical saturation. A social constructionist approach to grounded theory was used to analyze the qualitative data. Egocentric maps were analyzed to determine and describe movement and mixing patterns between sexual partners.

Results Geography influenced the social process of partner selection in three important ways: (1) participants expressed a desire to travel the shortest distance possible to meet or hook up with partners (“geographic proximity”); (2) the density of sexual minority men in a participant's community directly impacted participants social and sexual isolation, and thus how often they had sex (“degree of geosexual isolation”); and (3) geosexual isolation directly impacted the distance a participant was willing to search, and travel, to meet or hook up with partners, thus influencing the sexual mixing pattern (“convection mixing”). The geography of partner selection was also impacted by changes in sexual minority men use of space (“changing use of space”).