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

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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

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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").

Conclusion Geosexually isolated participants demonstrated “convection mixing”, with repeated movement from peripheral, to downtown, back to peripheral areas. More attention should be paid to identifying STI reservoirs outside of core areas.

Disclosure No significant relationships.

P516 LOW IMMUNITY TO HEPATITIS A AMONGST MEN WHO HAVE SEX WITH MEN ATTENDING A LARGE SEXUAL HEALTH CLINIC IN MELBOURNE, AUSTRALIA

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Background Recent outbreaks of hepatitis A have been reported globally, and increasing numbers of cases and deaths are being reported in Australia, particularly among men who have sex with men (MSM). The critical vaccination threshold for hepatitis A has been estimated to be $\geq 70\%$ to prevent outbreaks in MSM. This study aimed to determine the level of immunity to hepatitis A among MSM since 2012.

Methods This was a retrospective audit of serological testing data from first-time MSM attendees at the Melbourne Sexual Health Centre (MSHC) from 2012–2018. We determined the proportion of MSM who were tested and who had serological detection of hepatitis A antibodies, stratified by age and year. We used logistic regression to investigate factors associated with detection of hepatitis A antibodies.

Results There were 16,615 new MSM attendees at MSHC over the 7-year period, of which 9,719 (58%, 95% CI:57,59%) were tested for hepatitis A antibodies. There was a 2% annual increase in the proportion of men tested over time (from 60% in 2012 to 69% in 2018; $p=0.025$). Of those tested, 44% ($n=4,304$, 95% CI:43,45%) of men had hepatitis A antibodies detected at their first visit, but there was no change over time ($p=0.201$). However, compared to our last audit that spanned 2002–2011, a higher proportion of young MSM (aged <20 years) were tested for hepatitis A at their first visit (73% vs 33% before 2012) and had antibodies detected (38% vs 19% before 2012). Detection of hepatitis A antibodies was associated with age ≥ 30 (Adjusted OR=1.89, 95% CI:1.77,2.02), being born overseas vs Australia/New Zealand (AOR=1.23, 95% CI:1.13,1.33), and consistent condom use in the last 12 months (AOR=1.19, 95% CI:1.12,1.28).

Conclusion Hepatitis A immunity amongst MSM remains far below the estimated 70% required to prevent outbreaks. Measures including increased testing and higher vaccination coverage are needed to limit the number of cases and deaths.

Disclosure No significant relationships.

P517 DO SEXUAL PRACTICES DIFFER BY AGE AMONG GAY AND BISEXUAL MEN? A CROSS-SECTIONAL STUDY IN MELBOURNE, AUSTRALIA

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Background Unlike chlamydia, gonorrhoea is considerably more common in young men who have sex with men (MSM). This may relate to differences in sexual practices although currently studies predominantly focus on anal sex with very limited data on fellatio and kissing. This study aimed to examine a range of different sexual practices among MSM.

Methods MSM who attended the Melbourne Sexual Health Clinic in 2017 were invited to participate in a survey on nine sexual practices engagement with their most recent regular and/or casual partner(s). This included: kissing, touching penises, mutual masturbation, giving/receiving fellatio, giving/receiving rimming as well as insertive/receptive anal sex. Chi-squared trend test was used to examine the age patterns of different sexual practice.

Results 1601 men were included with a median age of 30 (IQR 25–36). Kissing was the most common practice among casual partners (92.4%), followed by giving fellatio (85.8%) and receiving fellatio (83.9%). The least common activity was giving rimming (38.0%), followed by receiving rimming (45.8%). The proportion of kissing decreased with increasing age (95.0% among men aged <30 vs 79.1% among men aged ≥ 50 , $p_{\text{trend}} < 0.001$). Receiving rimming also decreased with increasing age ($p_{\text{trend}} = 0.034$). Receptive anal sex was more common among younger men ($p_{\text{trend}} < 0.001$) but insertive anal sex was more common among older men than younger men ($p_{\text{trend}} = 0.002$). Sexual activity had fewer correlations with age among regular partners. Younger men were more likely to masturbate mutually ($p_{\text{trend}} = 0.031$) and receive anal sex from their regular partners ($p_{\text{trend}} = 0.013$).

Conclusion Age is strongly associated with sexual practices among casual partners but less so among regular partners. Younger men more likely to engage in activities associated with gonorrhoea transmission such as kissing and receptive rimming.

Disclosure No significant relationships.

P518 SEXUAL PRACTICES AND HEALTHCARE USE OF MEN WHO HAVE SEX WITH MEN ONLY AND MEN WHO HAVE SEX WITH MEN AND WOMEN

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Background It is unclear why gonorrhoea and syphilis rates are increasing among women in Australia. One possible reason is transmission to women from men who have sex with men and women (MSMW). We aimed to explore sexual practices and healthcare use of MSMW and men who have sex with men only (MSMO).

Methods Semi-structured interviews were conducted. Participants were recruited from a public sexual health clinic and via community advertisements in Melbourne, Australia. Men were eligible if they were cisgender, aged 18+ years and had sex with either men or men and women in the last 12 months. Data were analysed thematically.