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DEVELOPING SURVEILLANCE TOOLS TO MEASURE MSM'S HIV INFECTION RISK IN THE ERA OF COMPLEX BIOBEHAVIOURAL PREVENTION STRATEGIES

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Background Behavioural surveillance enables monitoring of disease epidemics, assessment of health promotion, development of health policy and service planning. However, the emergence of multiple effective biobehavioral risk management strategies to prevent HIV transmission (including PrEP, treatment-as-prevention (TasP), negotiated safety (NS), serosorting, condom use), demands new surveillance tools able to reflect this complexity. Here, we critically discuss our new surveillance tool, developed to measure MSM's biobehavioural HIV risk-taking.

Methods Items were developed with surveillance experts in Scotland and Australia, piloted within Scotland, then delivered within the Scottish Gay Men's Bar Survey (n=972 MSM), across the commercial gay scenes of Scotland's two largest cities in 2017. Participants were asked about sex with regular and casual partners separately, condom use and condomless anal intercourse (CAI), their HIV status, PrEP use and their partners' HIV and undetectable viral load (UVL) status.

Results Overall, 5.6% of participants were HIV+. For our HIV-/untested participants, 67.7% were categorised as 'lower risk' since, in the last year, they reported; (i) PrEP use (4.5%) (ii) no CAI (37.1%) (iii) Negotiated safety; CAI with 1 regular HIV- partner (16%) (iv) TasP; CAI with 1 regular HIV+ UVL partner (0.4%) (v) Serosorting; CAI with casual and/or multiple regular HIV- partners (4.1%) (vi) Both serosorting and TasP CAI with multiple regular and casual partners (5.4%) The remaining 32.3% were categorised as 'higher risk'; HIV-/untested men not on PrEP who reported CAI with HIV status-unknown partners, or HIV+ partners with unknown/detectable viral load. Of these, 67.6% report 2+ CAI partners, making them potentially eligible for PrEP in Scotland.

Conclusion No CAI, NS and PrEP were the key biobehavioural risk strategies used. Two-thirds of our higher risk men could, but are yet to, benefit from PrEP. Although offering new insights, we invite critical engagement with these risk criteria which present different, yet related challenges for researchers and MSM alike.

Disclosure No significant relationships.

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HEALTH SEEKING BEHAVIOUR AND ACCEPTABILITY OF ONLINE OUTREACH EFFORTS AMONG MSM USING SEX-SEEKING APPS/WEBSITES

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Background Gay, bisexual, and other men who have sex with men (GBM) commonly use the Internet to find sexual partners and look for sexual health information. Little is known about online health information seeking behaviour and

whether GBM welcome this information on socio-sexual apps/websites.

Methods GBM aged 14+ from Ontario were recruited into the #iCruise study via socio-sexual websites/apps from 07/2017-01/2018. Participants reported online health seeking behaviours and acceptability of sexual health information appearing as a clickable link/pop-up on socio-sexual apps/websites. Stratified by HIV status, multivariable logistic regressions were used to determine associations between sociodemographic variables and online health-seeking behaviour.

Results There were 910 GBM who were eligible for this baseline cross-sectional analysis. The majority reported being White (62%), and gay-identified (65%). A minority of participants were HIV-positive (12%), university educated (44%), and lived in rural areas (12%). Over two-thirds (69.3%, n=631/910) reported looking up online health information in the previous 3 months. Among HIV-negative/unknown status participants, online health seeking behaviour was negatively associated with older age (50+ vs <29, OR:0.35, 95% CI:0.23-0.55) and unknown HIV status (vs HIV-negative) (OR:0.57, 95% CI:0.39-0.84) and positively associated with more education (University vs High School OR:2.49, 95% CI:1.55-4.01). There were no significant associations among HIV-positive GBM. Having health information integrated into sex-seeking apps/websites was endorsed by 79% (agreed/strongly agreed). Acceptability via clickable link of health topics within sex-seeking apps/websites was very high: closest HIV/STI testing (96%); ASO website (93%); mental health information/resources (91%); public health/government website (90%); substance use information/resources (89%). Acceptability of a pop-up/reminder/notification with sexual health information such as how HIV is spread/how to prevent HIV transmission and safer sex practices to reduce HIV/STI transmission was also very high (86% and 89%, respectively).

Conclusion Acceptability of HIV and sexual health education information being embedded within dating apps/websites was very high and is currently an underutilized educational platform.

Disclosure No significant relationships.

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MSM PREDICTIVE MODELING WITHIN A LARGE, LINKED DATABASE OF LABORATORY, SURVEILLANCE, AND ADMINISTRATIVE HEALTHCARE RECORDS

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Background Enumeration or measurement of populations of men who have sex with men (MSM) is critical to developing and evaluating sexually transmitted and bloodborne infection (STBBI) prevention and treatment programs. However, there is a lack of data sources in which sexual orientation or behaviour is measured. In this study, we present the development and validation of a novel model (i.e., 'computational phenotype') to predict MSM status using multiple data sources.

Methods Three disease case surveillance databases (HIV, hepatitis B and C, and syphilis), a public health laboratory database (which performs ≥95% of all HIV, hepatitis C and syphilis tests in British Columbia), and five administrative

health record databases were linked and aggregated, resulting in a retrospective cohort of 727,091 adult men from 1990 to 2013. Self-reported MSM status ('gold-standard') from the three disease case surveillance databases was used to develop a multivariable prediction model for identifying MSM in the larger cohort. Models were selected using 'elastic-net' (combination of lasso and ridge regression), implemented through the GLMNet package in R, and a final model optimized area under the receiver operating characteristics curve (AUC).

Results History of gonorrhea and syphilis diagnoses, HIV tests in the past year, history of visit to identified gay and bisexual men's clinics, and residence in MSM-dense neighborhoods (based on self-reported MSM) were all positively associated with being MSM. The selected model had a sensitivity of 72%, specificity of 94%, and AUC of 92%. Combining self-reported MSM (n=6,280) and predicted MSM (n=85,521), a total of 91,801 men (13% of the cohort) were classified as MSM.

Conclusion Applying a computational phenotyping method to administrative data yielded a cohort of 85,521 MSM, which may be used to monitor and evaluate health outcomes and healthcare utilization. Sensitivity and specificity of this model were comparable to interviewer-administered self-report measures of sexual orientation.

Disclosure No significant relationships.

P564 OUTCOMES OF ANAL HPV SCREENING IN HIV+ MEN WHO HAVE SEX WITH MEN ATTENDING HIGH RESOLUTION ANOSCOPY CLINIC IN CANADA

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Background Rates of anal cancer from HPV infections are significantly higher in HIV-positive men-who-have-sex-with-men (MSM) compared to the general population. Recent estimates in the US and Europe report the incidence of anal cancer amongst HIV-positive individuals to be 75–137 cases/100 000 person-years, a rate 30–100 times higher than the general population. Despite the restoration of immune function with modern antiretroviral therapy, the incidence of anal cancers is increasing amongst HIV-positive MSM. We report the results of an anal cancer screening program in HIV-positive MSM in Calgary, AB, Canada from October 2014 to December 2018.

Methods HIV-positive MSM attending the Southern Alberta Clinic and STI Clinic were offered an anal pap smear. Patients with abnormal cytology were examined with digital anorectal exam and High Resolution Anoscopy (HRA) to detect anal intraepithelial neoplasia (AIN). Dysplastic areas were biopsied and sent for histopathology. High-grade AIN II-III were treated using infrared coagulation.

Results A total of 214 patients were examined with HRA. 87 patients (40.7%) had biopsy-proven AIN I, II, or III. Asymptomatic internal anal warts (AIN I) were detected in 60 patients (28%). Twenty-five patients had AIN II-III (11.7%) and 2 patients had invasive squamous cell cancer. High-risk

oncogenic HPV was identified in 100% of the biopsy specimens.

Conclusion High rates of anal HPV infections causing AIN I, II, and III were identified in HIV-positive MSM, supporting ongoing use of HRA for anal cancer screening programs in this population. High rates of asymptomatic internal anal warts were incidentally found. These rates of anal HPV infections support consideration of offering HPV vaccination to HIV-positive MSM on clinic intake as a preventative tool.

Disclosure No significant relationships.

P565 PERSONALIZED COGNITIVE COUNSELING (PCC) TO REDUCE HIV RISK FOLLOWING RECTAL GONORRHEA/CHLAMYDIA DIAGNOSIS AMONG MSM IN PERU

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Background We piloted a bio-behavioral intervention for MSM in Peru based on rectal gonorrhea (GC)/chlamydia (CT) screening as an integrated HIV-STI prevention strategy.

Methods Between August-December 2018, we screened 605 MSM for rectal GC/CT using Aptima TMA and identified 101 cases among 469 HIV-uninfected men. Subjects were randomly assigned to traditional or Personalized Cognitive Counseling (PCC) at 3- and 6-Months. PCC session notes and Self-Justification Evaluation Instruments (SJEIs) were analyzed for thematic content. HIV/STI testing and behavioral risk assessments were repeated at 3- and 6-months. Statistical comparisons were conducted using Chi-square and Generalized Estimating Equations.

Results All participants reported reductions in condomless insertive (CIAI) and receptive anal intercourse (CRAI), with no significant differences between arms. In the Control arm, CRAI declined from a mean of 4.0 Partners (77% of recent sexual contacts) at Baseline to 1.3 (43%) at 3-Months and 0.7 (24%) at 6-Months. CRAI in the intervention arm decreased from 2.8 Partners (58% of contacts) to 1.1 (35%) to 0.8 (20%) (p≥0.05). At 3-Months, we identified 9 HIV infections and 24 new GC/CT cases across arms. At 6-Months, we diagnosed 2 HIV infections and 7 GC/CT cases (7/45; 15.6%) in the control arm (4.4%; 2/45), with 0 HIV infections (0%; 0/46) and 9 GC/CT recurrences (9/46; 19.6%) among PCC participants (p≥0.05). Thematic analysis demonstrated four common self-justifications: (1) Isolated events that don't reflect typical behavior; (2) Informal HIV status assessments based on partner appearance or behavior; (3) Fear of ruining the moment by discussing HIV; and (4) Structural barriers to condom availability during intercourse.

Conclusion Our pilot assessment supports the feasibility and acceptability of PCC for reducing HIV risk following rectal GC/CT diagnosis. Risk behavior reductions were similar between arms, though no new HIV infections were observed after PCC. Additional research is needed to apply PCC to problems of post-STI behavior change and PrEP uptake.

Disclosure No significant relationships.