

# HIV and HIV Risk Behaviour among Gay, Bisexual, and other Men who have Sex with Men in Vancouver, Toronto, and Montreal: Preliminary Comparisons from the Engage Study

Heather L. Armstrong,<sup>1,2</sup> Nathan J. Lachowsky,<sup>2,3</sup> Lu Wang,<sup>2</sup> Nicanor Bacani,<sup>2</sup> Gbolahan Olarewaju,<sup>2</sup> Len Tooley,<sup>4</sup> Ricky Rodrigues,<sup>4</sup> Marc Messier-Peet,<sup>5</sup> Syed Noor,<sup>4</sup> Sharmistha Mishra,<sup>6</sup> Ayden Scheim,<sup>7</sup> Mark Hull,<sup>1,2</sup> Jody Jollimore,<sup>8</sup> Gilles Lambert,<sup>9</sup> Joseph Cox,<sup>5</sup> Daniel Grace,<sup>6</sup> Trevor A. Hart,<sup>4</sup> David M. Moore<sup>1,2</sup>

1. University of British Columbia, Vancouver, British Columbia  
2. British Columbia Centre for Excellence in HIV/AIDS, Vancouver, British Columbia  
3. University of Victoria, Victoria, British Columbia

4. Ryerson University, Toronto, Ontario  
5. McGill University, Montreal, Québec  
6. University of Toronto, Toronto, Ontario

7. University of Western Ontario, London, Ontario  
8. Community-Based Research Centre for Gay Men's Health, Vancouver, British Columbia  
9. Institute national de santé publique du Québec, Montreal Québec

## BACKGROUND

- gbMSM represent 53% of all people living with HIV in Canada and the majority (54%) of new HIV diagnoses occur among gbMSM
- 74% of Canadian gbMSM live in BC, Ontario, or Quebec – many of whom live in Vancouver, Toronto, and Montreal
- To better understand the HIV epidemic in gbMSM across Canada, comparative data on HIV and risk behaviours in Vancouver, Toronto, and Montreal is needed

## METHODS

- Three-city cross-sectional study
- Respondent-driven sampling procedure
- Eligibility
  - Male (including trans men)
  - ≥16 years
  - Sex with a man in the past 6 months
  - Proficiency in English or French (Montreal)
- Computer-assisted self-interview
  - Demographics
  - Service Access and Use
  - Relationships, Community, and Societal Context
  - Sexual Behaviours, Knowledge, and Attitudes
  - Substance Use and Mental Health
- Clinical nursing visit
  - HIV and STI testing
  - Physical, Mental, and Sexual Health
- Data collection began in February 2017
- Data are presented to February 28, 2018
- Analysis: Crude descriptive statistics by city with 95% confidence intervals
- High risk sex was defined as condomless anal sex (CAS) with a serodiscordant/unknown HIV status partner

Table 1. Descriptive statistics of gbMSM in Vancouver, Toronto, and Montreal.

N=1360	VANCOUVER (n=243)		TORONTO (n=210)		MONTREAL (n=907)	
	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI
Age						
<30	112 (46.1)	39.8, 52.4	88 (41.9)	35.2, 48.6	275 (30.3)	27.3, 33.3
30-44	83 (34.2)	28.2, 40.2	98 (46.7)	39.9, 53.5	320 (35.3)	32.2, 38.4
≥45	48 (19.8)	14.7, 24.8	24 (11.4)	7.1, 15.8	312 (34.4)	31.3, 37.5
Person of Colour	62 (25.6)	20.1, 31.2	54 (26.7)	20.6, 32.9	106 (12.2)	10.0, 14.4
Annual Income						
<\$30 000	97 (39.9)	33.7, 46.1	95 (45.2)	38.5, 52.0	528 (58.2)	55.0, 61.4
\$30 000 - \$59 999	81 (33.3)	27.4, 39.3	76 (36.2)	29.6, 42.7	286 (31.5)	28.5, 34.6
≥\$60 000	65 (26.7)	21.1, 32.4	39 (18.6)	13.3, 23.9	93 (10.3)	8.3, 12.2
Employed	200 (82.3)	77.5, 87.1	155 (73.8)	67.8, 79.8	596 (65.7)	62.6, 68.8
Sexual Identity						
Gay	208 (85.6)	81.2, 90.0	147 (70.0)	63.8, 76.2	738 (81.4)	78.8, 83.9
Bisexual	15 (6.2)	3.1, 9.2	7 (3.3)	0.9, 5.8	77 (8.5)	6.7, 10.3
Other	20 (8.2)	4.8, 11.7	56 (26.7)	20.6, 32.7	92 (10.1)	8.2, 12.1
HIV Positive Serostatus	34 (14.0)	9.6, 18.4	46 (21.9)	16.3, 27.5	190 (20.9)	18.3, 23.6
Lifetime STI History	145 (60.2)	53.9, 66.4	123 (59.4)	52.7, 66.2	582 (65.4)	62.3, 68.5
# of male anal sex partners (p6m) (median, Q1, Q3)	4	1, 8	3	1, 11	3	1, 8
CAS (p6m)	191 (78.6)	73.4, 83.8	135 (64.3)	57.8, 70.8	575 (63.4)	60.3, 66.5
High risk sex (p6m)	105 (43.2)	36.9, 49.5	79 (38.3)	31.7, 45.0	330 (37.2)	34.0, 40.3
Use of PrEP (ever)	30 (12.3)	8.2, 16.5	23 (11.0)	6.7, 15.2	114 (12.6)	10.4, 14.7
Non-Rx Drug Use (ever)	229 (94.2)	91.3, 97.2	195 (92.9)	89.3, 96.4	779 (87.4)	85.2, 89.6
Crystal Meth Use (p6m)	27 (11.1)	7.1, 15.1	18 (8.7)	4.8, 12.6	94 (10.6)	8.6, 12.6
(>p6m)	28 (11.5)	7.5, 15.6	32 (15.5)	10.5, 20.4	83 (9.4)	7.4, 11.3

Note: 95%CI=95% confidence interval, CAS=condomless anal sex, p6m=past 6 months, Rx=prescription

## SAMPLE

- From February 2017-February 2018, we recruited 56% of our target sample (1360/2440)
- Vancouver: n=243 target sample=720 68 seeds
- Toronto: n=210 target sample=720 30 seeds
- Montreal: n=907 target sample=1000 27 seeds

The authors have no conflicts of interest to disclose.  
Corresponding author: harmstrong@cfenet.ubc.ca

## PRELIMINARY RESULTS

- Across the sites, similar prevalence was reported for:
  - HIV serostatus (V:14.0%, T:21.9%, M:20.9%)
  - Number of male anal sex partners in the past 6 months (V:4, T:3, M:3)
  - History of STI (V:60.2%, T:59.4%, M:65.4%)
  - Engaging in high risk sex in the past 6 months (V:43.2%, T:38.3%, M:37.2%)
  - Use of pre-exposure prophylaxis (PrEP) (V:12.3%, T:11.0%, M:12.6%)
  - Recent and lifetime use of crystal methamphetamine (V:11.1%, 11.5%, T:8.7%, 15.5%, M:10.6%, 9.4%)
  - Lifetime non-prescription drug use (V:94.2%, T:92.9%, M:87.4%)
- Participants in Montreal were more likely to be:
  - 45 years of age or older (V:19.8%, T:11.4%, M:34.4%)
  - White (V:74.4%, T:73.3%, M:87.8%)
  - Have an annual income less than \$30,000 (V:39.9%, T:45.2%, M:58.2%)
  - Unemployed (V:17.7%, T:26.2%, M:34.3%)
- Participants in Toronto were more likely to:
  - Identify as something other than gay or bisexual (V:8.2%, T:26.7%, M:10.1%)
- Participants in Vancouver were more likely to:
  - Engage in condomless anal sex in the past 6 months (V:78.6%, T:64.3%, M:63.4%)

## CONCLUSION

- Participants in Vancouver reported more condomless anal sex
- Participants in Toronto were more likely to identify as something other than gay or bisexual
- Participants in Montreal were older, had lower incomes, and were more likely to be unemployed
- Prevalence of HIV was similar as were most key HIV risk behaviours (e.g., high risk sex, use of crystal methamphetamine)
- Results are limited by uneven sample sizes and have not been adjusted for RDS procedures
- Complete data will allow for a better understanding of the magnitude and importance of these preliminary findings.