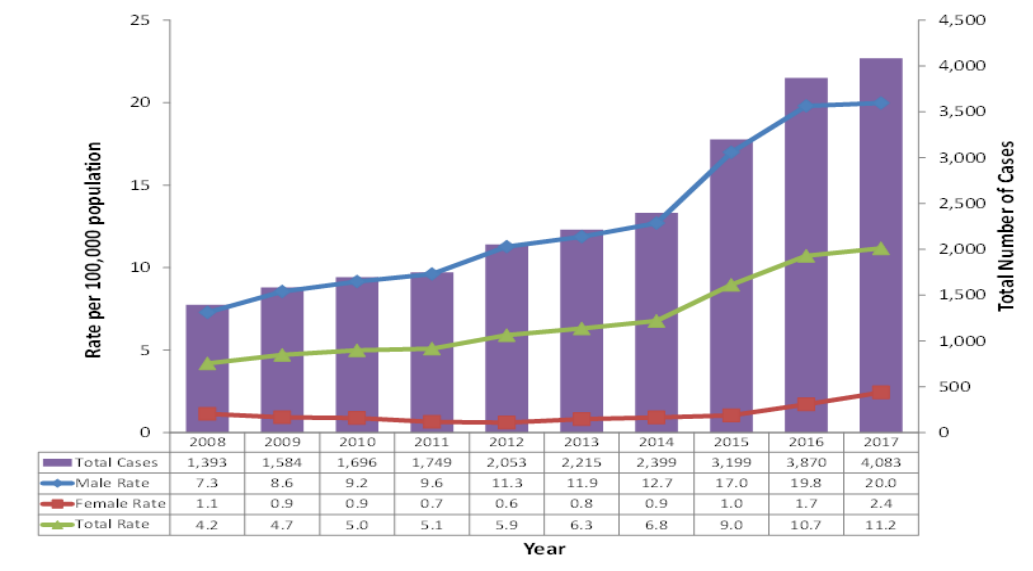


## PREVALENCE AND CORRELATE OF SYPHILIS AMONG GAY, BISEXUAL AND OTHER MEN WHO HAVE SEX WITH MEN (GBM) IN MONTREAL, TORONTO AND VANCOUVER

### Why did we research this topic?

- Syphilis contributes to HIV transmissibility;
- Infectious syphilis cases reported through notifiable disease registries and among GBM attending sexual health clinics have increased markedly during the past decade in Canada;
- GBM living with HIV are disproportionately affected;
- Beyond the information based on GBM presenting for care, data are limited.



Infectious syphilis 2008-2017, PHAC, Report of STIs in Canada

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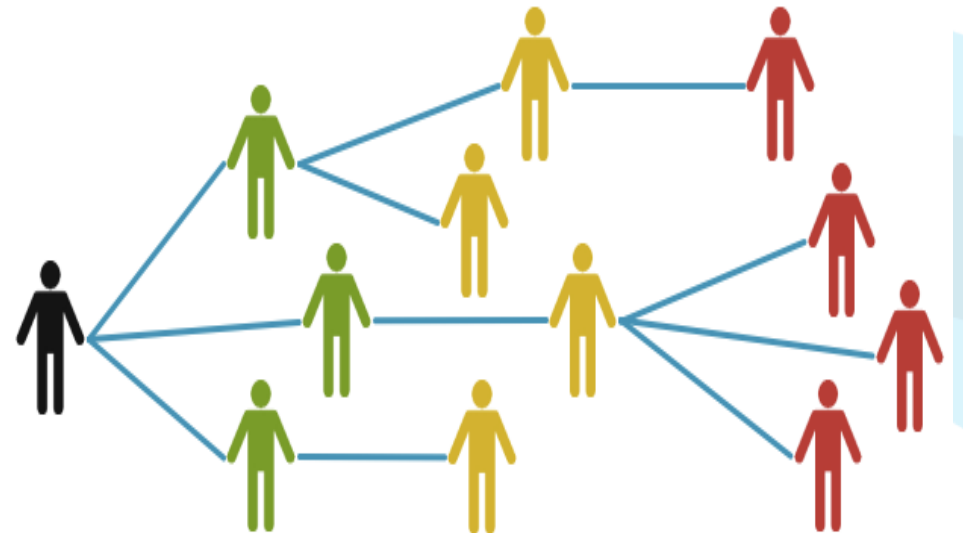
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# How did we research this?

- ▶ We used the baseline data (collected: 02-2017 to 08-2019) from the **Engage** study.
- ▶ Through Respondent-Driven Sampling (**RDS**), Engage recruited gay, bisexual and other men who have sex with men (**GBM**) who are  $\geq 16$  years of age and sexually active in **Montreal, Toronto, and Vancouver**.
- ▶ It combines observations collected through a questionnaire and biological samples for detection of Sexually Transmitted and Blood-borne Infections (STBBIs), including serologic testing for syphilis.
- ▶ **Recent or current active syphilis** was defined as having a treponemal reactive tests (ELISA or CMIA) and a RPR titer  $\geq 1:16$  (regardless of treatment history).
- ▶ Bivariate analyses stratified by city were conducted to identify potential correlates of active syphilis. Factors exhibiting similar relationships (i.e., direction of association) in each city were examined using multivariable logistic regression on pooled data.
- ▶ All analyses are RDS-adjusted using RDS-II weights



# What did we learn ?

## 1. RDS-adjusted prevalence estimates of recent-current syphilis

Montréal	Toronto	Vancouver	
(n=1167) % (95 % CI)	(n=504) % (95 % CI)	(n=743) % (95 % CI)	
<b>1.3%</b> <b>(0.8%-1.8%)</b>	<b>0.9%</b> <b>(0.0%-1.9%)</b>	<b>3.6%</b> <b>(1.7%-5.4%)</b>	<b><i>p=0.002</i></b>

Recent or current active syphilis cases are compatibles with infections acquired within 12-18 months, which might be in the process of decreasing activity (spontaneously or post treatment) or in the process of establishing activity and which might be or not in a contagious phase.

We consider that a titer of  $\geq 1 : 16$  is the most balanced threshold for a sensitivity and specificity ratio compatible with recent or current syphilis activity. It is important to acknowledge that this titer is applied in an epidemiological context and does not constitute a diagnosis threshold.

Among 53 participants with a titer of  $\geq 1 : 16$ , 11 (20.7 %) reported not having a history of a syphilis diagnosis in their lifetime.

# What did we learn?

## 2. Correlates of recent- current syphilis

Characteristics and behaviours	Univariable OR (95% CI)	Multivariable <sup>3</sup> OR (95% CI)
Age (continuous)	1.02 (1.00- 1.04)	1.01 (0.99 - 1.03)
Annual income: Less than 30 000 CAN\$	2.83 (1.41- 6.41)	<b>2.66 (1.44 - 5.53)</b>
Self-reported HIV status: Positive	3.35 (1.83- 6.00)	1.54 (0.80 - 2.92)
Number of anal sex partners (continuous)	1.01 (0.99- 1.02)	1.00 (0.98 - 1.01)
Has used a psychoactive drug associated with “chemsex” (crystal or GHB or ecstasy or ketamine) or poppers with at least one of the last 5 sexual partners	11.26 (5.73 - 24.44)	<b>9.25 (4.87 - 18.98)</b>

Factors exhibiting similar relationships in each city and associated at  $p < 0.2$  are presented. Other variables were considered in the analysis but were not significantly associated : **sociodemographic characteristics** : born or moved in Canada, education; **sexual partnership and recruitment** in the past six months : having a main partner, number of oral or anal sex partners, transactional sex. attending a bathhouse, engaged in group sex, dating app use; **sexual behaviors** P6M : using sex toys, engaged in receptive fisting, gave oral sex to a casual partner); use of erectile dysfunction drugs; **psychosocial factors** : symptoms of depression or anxiety, sexual compulsivity); use of injection drugs, diagnosis of **chlamydia or gonococcal infection** past 12M, **PrEP use** among HIV negative participants P6M.

Participants with incomplete lab results ( $n=20$ ) or a RPR titer = 1:8 ( $n=15$ ) (a more sensitive but less specific marker of active syphilis) were excluded from this analysis. Univariate regression analysis were conducted to identify potential correlates and multivariable logistic regression analysis using a quasi binomial distribution were conducted on significant correlates ( $p < 0.2$ ). The final model was adjusted for city.

# What are the implications of these findings?

1. Engage is the first study to provide GBM population-based recent or current syphilis prevalence estimates in the three metropolitan areas of Canada;
2. These results provide important baseline data for future comparisons;
3. Using a RPR titre threshold of  $\geq 1:16$ , the prevalence of recent or current active syphilis appears lower among GBM in Montreal and Toronto compared to Vancouver;
4. In all 3 cities, the odds of syphilis were higher among those who engaged in “chemsex” and those with lower income; these GBM may benefit from targeted STI health promotion and more frequent syphilis screening.

## Limitations

Representativity of a sample obtained through RDS, Cross sectional study design (causality); Social desirability, Interpretation of the RPR test titer.

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<https://www.engage-men.ca/>

