



# Substance use, condomless anal sex, and STI outcomes among MSM who do and do not use PrEP: Preliminary results from the Engage Study

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# Conflict of Interest Disclosures

- ▶ In the past 2 years I have been an employee of: **Ryerson University**
- ▶ In the past 2 years I have been a consultant for: **N/A**
- ▶ In the past 2 years I have held investments in the following pharmaceutical organizations, medical devices companies or communications firms: **N/A**
- ▶ In the past 2 years I have been a member of the Scientific advisory board for: **CHARAC (CIHR), CANFAR**
- ▶ In the past 2 years I have been a speaker for: **N/A**
- ▶ In the past 2 years I have received research support (grants) from: **CIHR, CANFAR, Ontario HIV Treatment Network, NIH, Canadian Blood Services, CTN, Ryerson University**
- ▶ In the past 2 years I have received honoraria from: **Elsevier**
- ▶ I agree to disclose approved and non-approved indications for medications in this presentation: **YES**
- ▶ I agree to use generic names of medications in this presentation: **YES**
- ▶ There are relationships to disclose: **NO**

# Background

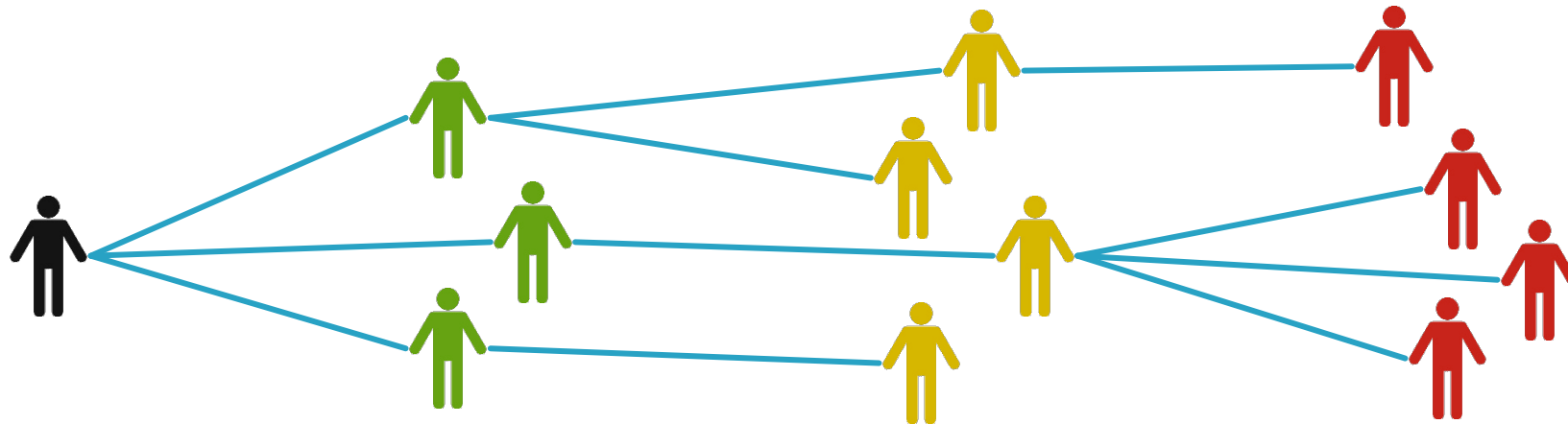
- ▶ Following Health Canada's approval in 2016, use of Pre-Exposure Prophylaxis (PrEP) seems to have increased among gay, bisexual, and other men who have sex with men (GBM) (Dulai et al. 2017; Lachowsky et al. 2016)
- ▶ However, GBM on PrEP may engage in more condomless anal sex (CAS) while using PrEP (Chen et al. 2016; 2018)
- ▶ The current study compared GBM PrEP users and non-users on CAS with a male partner, substance use, and STI diagnoses.

# Methods: The Engage Study

- ▶ Mixed-Method Cross-Sectional study being conducted in Vancouver, Toronto, and Montreal
- ▶ Data collected using Respondent-Driven Sampling
- ▶ Recruiting cisgender and transgender men who:
  - ▶ Are 16 years of age or older
  - ▶ Reported having sex with another man in the past 6 months
- ▶ Participants complete computer-assisted surveys and biomedical testing (i.e.: STI testing)

# Methods: Sample

- ▶ Recruitment period: February 2017 – February 2019 (data collection is ongoing)
- ▶ **The Analytic Sample:**
  - ▶ Lab-confirmed HIV Negative = 1,819 (V = 499 , T = 341, M = 979)
  - ▶ Age: Mean = 34.87, SD = 12.24
  - ▶ Predominantly Gay-identified (81%), born in Canada (64%), income <\$40,000 (62%)



# Methods: Analytic Approach

- ▶ **We fit a series of regression models predicting each outcome variable with recent PrEP use as an explanatory variable**
- ▶ **Used RDS-II adjustment**
- ▶ **Adjusted each multivariable model for** city of recruitment, age, race/ethnicity, annual income, relationship status, sexual orientation and recruitment clustering (based on their significant relationship with PrEP use)
- ▶ **Used separate models based on the outcome: negative binomial** (binary outcome) or **Poisson** (count outcome)

# Results – Prevalence of PrEP Use

## ► PrEP Use (within last 6 months)

	YES	NO
	418 (23%) RDS Adj. = 16%	1,401 (77%) RDS Adj. = 84%
Vancouver	23%	77%
Toronto	21%	79%
Montreal	11%	89%

# Sexual and substance use - binary outcomes

- ▶ **Multivariable Comparisons**  
(adjusted for city of recruitment, age, race/ethnicity, annual income, relationship status, sexual orientation and recruitment clustering.)

	<b>PrEP Users</b>	<b>Not PrEP Users</b>	<b>aOdds Ratio</b>	<b>95% CI</b>	<b>p</b>
<b>Condomless Anal Sex (Yes)</b>	86%	62%	<b>3.51</b>	<b>2.64 – 4.68</b>	<b>&lt; .001</b>
<b>Party Drug Use (2 or more)</b>	53%	33%	<b>2.38</b>	<b>1.91 – 2.97</b>	<b>&lt; .001</b>
<b>Substance use before/ during Sex (Yes)</b>	51%	48%	1.16	.94 – 1.45	.16
<b>Transactional Sex (Yes)</b>	2%	3%	.72	.35 – 1.51	.39



# Sexual and substance use - count outcomes

- ▶ **Multivariable Comparisons**  
(adjusted for city of recruitment, age, race/ethnicity, annual income, relationship status, sexual orientation and recruitment clustering.)

	<b>PrEP Users</b>	<b>Not PrEP Users</b>	<b>aBeta*</b>	<b>95% CI</b>	<b>P</b>
<b>Number of male sex partners, last 6 months (Median)</b>	6	2	<b>12.92</b>	<b>9.75 – 16.08</b>	<b>&lt; .001</b>
<b>Number of male anal sex partners (Median)</b>	3	1	<b>10.16</b>	<b>7.84 – 12.49</b>	<b>&lt; .001</b>
<b>Number of substance use (Median)</b>	1	0	<b>0.96</b>	<b>0.67 – 1.22</b>	<b>&lt; .001</b>

\* = Poisson model

# STBBI Outcomes

- ▶ **Multivariable Comparisons**  
(adjusted for city of recruitment, age, race/ethnicity, annual income, relationship status, sexual orientation and recruitment clustering.)

	PrEP Users	Not PrEP Users	Odds Ratio	95% CI	<i>p</i>
<b>Presence of Gonorrhea (Yes)</b>	6%	4%	<b>2.15</b>	1.32 – 3.51	<b>.002</b>
<b>Presence of Chlamydia (Yes)</b>	8%	4%	<b>1.94</b>	1.29 – 2.92	<b>.001</b>
<b>Presence of Syphilis (Yes)</b>	17%	10%	<b>1.98</b>	1.46 – 2.69	<b>&lt;.001</b>
<b>Presence of Hep C (Yes)</b>	1%	3%	0.64	.23 – 1.82	.41

# Conclusions

- ▶ Although previous research suggests that not all guys at risk for HIV use PrEP (Wilton et al. 2016), our data suggest that guys on PrEP are more likely to be the men we need to be reaching
  - ▶ More likely to have CAS and more sex partners
- ▶ Continued need to test and treat PrEP users for STIs
  - ▶ Higher point-prevalence of syphilis, gonorrhea, and chlamydia

# Limitations and Future Directions

- ▶ Montreal began data collection 4-5 months before Vancouver and Toronto, which may have led to lower PrEP use in Montreal in the present data
  - ▶ Our current findings are cross-sectional
  - ▶ Future studies will examine data collection by year, as we were funded to examine data over the next 4 years
  - ▶ This way, we will be able to examine if there are city differences in PrEP use by year of data collection
- ▶ When we have longitudinal data, we will examine how health care access (e.g., having a gay-friendly provider, affordability of PrEP) predicts PrEP use over time

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# Acknowledgements

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