



Changes in the HIV care cascade among gay, bisexual and other men who have sex with men in Vancouver: 2012-14 to 2017-19

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Background

- British Columbia (BC) has dedicated \$48 million in additional annual funding to support expanded HIV testing and improved engagement and retention in HIV care since 2010
- We compared HIV care cascade metrics for gay, bisexual and other men who have sex with men (GBM) in Vancouver across two time-periods 2012-2014 and 2017-2019.



Methods

- We examined data from sexually-active GBM aged ≥ 16 years, who gender identified as men and were recruited through respondent driven sampling (RDS) in two independent cross-sectional studies:
 - Momentum I (M1) February 2012-February 2014
 - Momentum II (M2) February 2017-July 2019 (part of 3 city Engage Study)
- Participants completed a computer-based survey and tests for HIV and other sexually transmitted infections
- For GBM living with HIV (LWH) we measured ART uptake through linkages with BC HIV Drug Treatment program and measured HIV viral load (VL)



Data Analysis

- We calculated RDS-II adjusted proportions and 95% confidence intervals for all variables for each time-period
- RDS-II weights, are inversely proportional to the size of participants' social network, were based on the question:
 - “How many men who have sex with men aged 16 years or older, including trans men, do you know who live or work in the Metro Vancouver area?”
- We conducted separate analyses for GBM LWH to examine factors associated with having an unsuppressed VL (≥ 200 copies/mL) in each time period using logistic regression



Results

We recruited

- 719 participants (119 seeds) in M1
- 753 participants (117 seeds) in M2

Confirmed as living with HIV

- 199 in M1
- 132 in M2

HIV prevalence

- 25.8% (95% CI 21.1-30.6) in M1
- 20.4% (95% CI 14.5-26.3) in M2

Testing for HIV in previous year

(among HIV negative or unknown)

- 66.1% (95% CI 60.0-72.2) in M1
- 65.3% (95% CI 57.6-72.9) in M2



Demographic characteristics of GBM LWH

	Momentum I N= 199 RDS% (95% CI)	Momentum II N= 132 RDS% (95% CI)
Age		
<30	3.2 (0.2 - 6.2)	12.3 (2.4 - 22.2)
30-44	38.0 (27.6 - 48.4)	27.1 (12.9 - 41.2)
45+	58.9 (48.4- 69.3)	60.6 (44.7 - 76.5)
Annual Income		
<\$30,000	80.2 (72.3- 88.1)	83.8 (75.8 - 91.7)
\$30,000+	19.8 (11.9 - 27.7)	16.2 (8.3 - 24.2)
Ethnicity		
White/European/ Canadian	67.4 (56.7 - 78.1)	55.3 (38.1-72.6)
Asian	7.5 (2.8 - 12.1)	13.0 (1.8 - 24.1)
Indigenous	18.5 (8.7 - 28.2)	13.1 (0.0- 30.5)
Latin American	4.0 (0.0 - 9.7)	7.7 (0.4 - 14.9)
Other	2.7 (0.1 - 5.3)	11.0 (0.4 - 21.5)
Sexual Identity		
Gay	83.4 (75.6 - 91.3)	72.1 (53.5 - 90.6)
Bisexual	12.0 (4.9 - 19.1)	11.6 (0.0 - 23.4)
Other	4.6 (0.6 - 8.6)	16.3 (0.0 - 34.0)
Gender Identity		
Cisgender male	99.0 (97.1 – 100)	86.1 (68.6 – 100)
Other gender term	1.0 (0.0 - 2.9)	13.9 (0.0 - 31.4)

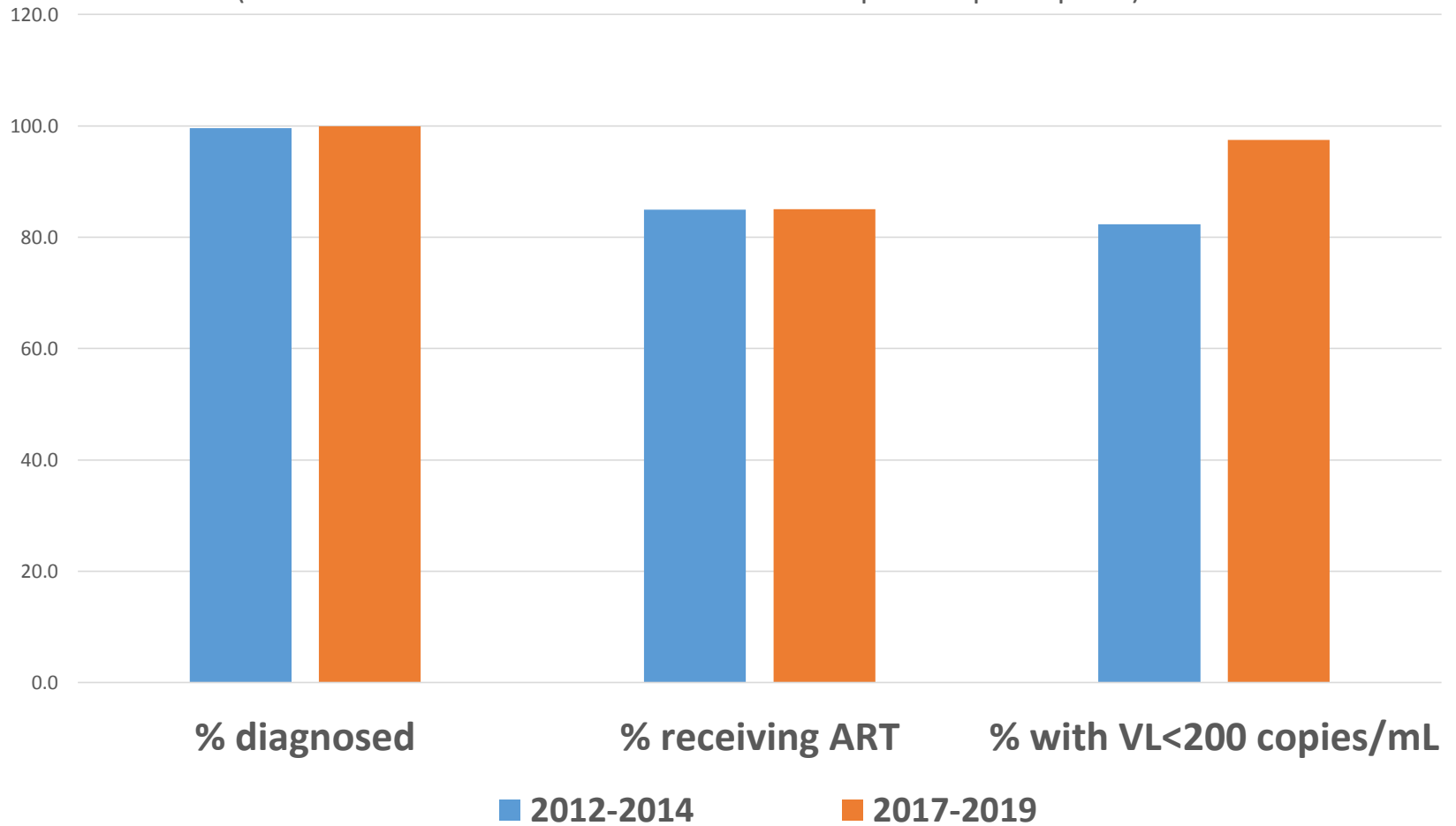


Results - HIV cascade of care

- **Undiagnosed infection**
 - 0.4% (95% CI 0.0-0.9) in M1
 - 0.1% (95% CI 0.0-0.2) in M2
- **Receiving ART** among all GBM living with HIV
 - 83.9% (95% CI 76.3-91.5) in M1
 - 84.8% (95% CI 72.8-96.8) in M2
- **Virologic suppression** ($VL \leq 200$ copies/mL) among all GBM living with HIV
 - 82.3% (95% CI 73.6-91.1) in M1
 - 97.4% (94.6-100.0) in M2
- 12 participants in M1 and 11 in M2 had $VL < 200$ copies/mL but did not have an active ART prescription in the DTP



HIV cascade of care parameters for GBM in Vancouver: 2012-14 and 2017-19 (note that denominator is total number of HIV positive participants)



Univariable associations with VL \geq 200 copies/ mL

	Momentum I			Momentum II		
	Unadjusted OR	95% CI		Unadjusted OR	95% CI	
Age						
<45	Ref			Ref.		
45+	0.51	0.24	1.06	0.96	0.13	6.87
Ethnicity						
White/European/Canadian	Ref			Ref		
Other	8.30	3.66	18.82	0.15	0.01	3.02
Education level						
High school or less	Ref			Ref		
Greater than high school	3.94	1.52	10.26	3.66	0.26	51.88
Cocaine use in past 6 months						
No	Ref			Ref		
Yes	3.16	1.50	6.68	2.54	0.33	19.66
Crystal meth use in past 6 months						
No	Ref			Ref		
Yes	6.23	2.79	13.90	4.68	0.54	40.65
Has a family doctor						
No	Ref			Ref		
Yes	0.02	0.003	0.17	0.13	0.00	7.41
Ever diagnosed with depression						
No	Ref			Ref		
Yes	0.16	0.07	0.37	5.33	0.74	38.25
Has someone who shows love and affection						
None of the time				Ref.		
A little or some of the time				0.08	0.01	0.85
Most of the time				0.05	0.00	0.73



Multivariable model Momentum I

	Adjusted OR	95% CI	
Age			
<45			
45+	Not selected		
Ethnicity			
White/European/Canadian	Ref		
Other	4.85	1.78	13.22
Education level			
High school or less	Ref		
Greater than high school	4.65	1.46	14.76
Cocaine use in past 6 months			
No	Ref		
Yes	4.25	1.24	14.59
Crystal meth use in past 6 months			
No	Ref		
Yes	4.06	1.42	11.66
Has a family doctor			
No	Ref		
Yes	0.06	0.004	0.73
Ever diagnosed with depression			
No	Ref		
Yes	0.26	0.09	0.79

Note:
Not enough events (5) for multivariable model in Momentum II



Conclusions

- Additional investments in the HIV response in BC appear to have improved HIV care cascade parameters for GBM in Vancouver
- Namely very low undiagnosed fraction and very high proportion of VL suppression
- ART uptake is likely underestimated in these analyses due to ART receipt from non-DTP sources
- BC appears to have achieved 95-95-95 targets for this key population in Metro Vancouver
- Disparities in virologic suppression appear to have lessened over time
- Social support for GBM LWH may be a key outstanding determinant for VL suppression



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