

Successful scale-up of syphilis testing linked to routine viral load monitoring in British Columbia

Matthew Clifford-Rashotte¹, Wendy Zhang², Diana Kao², Jason Trigg², Junine Toy², Silvia Guillemi², Viviane Lima², Rolando Barrios², Julio Montaner², Mark Hull^{1,2}

¹Division of Infectious Disease, Department of Internal Medicine, University of British Columbia, Vancouver, BC, Canada

²British Columbia Centre for Excellence in HIV/AIDS, Vancouver, BC, Canada

Background

- Syphilis screening is recommended among people living with HIV (PLWH), with recommendations for those at risk for infection of screens every 3 – 6 months.
- Routine screening at time of viral load testing may be incorporated into clinical care.
- The frequency of syphilis screening among PLWH in British Columbia is not known.
- We sought to determine the frequency of syphilis screening over time among PLWH engaged in anti-retroviral therapy and to determine if screening occurred routinely with viral load testing.



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Methods

- We performed a retrospective review of individuals enrolled in the BC Drug Treatment Program between January 1, 2015 and December 31, 2019.
- A syphilis test was defined as a routine screen if performed within 7 days of an HIV viral load measurement.
- Frequent testing was defined as two or more tests per year.
- Multivariate logistic regression was used to determine variables associated with frequent testing.

Results

- Data was reviewed for 8211 individuals, of which 7364 (90%) had at least one syphilis test over the study period.
- 93.4% of all tests were routine screens.
- The overall proportion tested per year increased over time (71% in 2015 vs. 79% in 2019, $p<0.001$); as did the proportion of those tested who were tested frequently (72% in 2015 vs. 83% in 2019, $p<0.001$) (See Table 1).
- Increased testing was observed among MSM (83% in 2015 vs. 90% in 2019, $p=0.005$), but not among non-MSM (65% in 2015 vs. 72% in 2019, $p=0.087$).
- Factors associated with frequent screening for syphilis are shown in Table 2.

Table 1. Syphilis testing and frequency of screening

Year	#of people in study	Individuals tested for syphilis		>=2 tests per year		>=4 tests per year	
		n	%	n	%	n	%
2015	7180	5103	71%	3698	72%	917	18%
2016	7284	5449	75%	4228	78%	1818	33%
2017	7337	5612	76%	4504	80%	2059	37%
2018	7350	5708	78%	4634	81%	2104	37%
2019	7137	5635	79%	4682	83%	2141	38%
P-value for trend		P<0.01		P<0.001		P=0.005	

Year	Total number of syphilis tests	Routine testing	
		n	%
2015	12464	11587	93%
2016	15249	14168	93%
2017	16321	15340	94%
2018	16676	15562	93%
2019	16788	15716	94%
P-value for trend		P=0.308	

Table 2. Predictors of frequent testing (≥ 2 tests/year)

Variable	Unadjusted OR	Adjusted OR
MSM		
No	1.00	1.00
Yes	3.34(3.08-3.62)	1.90(1.73-2.08)
Unknown	1.22(1.11-1.33)	0.84(0.76-0.93)
Virologic suppression (≥ 50% of calendar year)		
No	1.00	1.00
Yes	1.50(1.40-1.62)	1.00(0.92-1.10)
Unknown	0.06(0.03-0.13)	0.29(0.11-0.74)
Residence		
Elsewhere in BC	1.00	1.00
West End	3.83(3.44-4.26)	1.74(1.55-1.95)
Vancouver	2.06(1.87-2.28)	1.32(1.19-1.47)
Unknown	0.34(0.23-0.50)	0.56(0.36-0.86)
ART provider		
Other	1.00	1.00
Hospital-based HIV clinic	5.46(4.98-5.98)	5.14(4.65-5.68)
HIV primary care clinic	5.13(4.68-5.64)	4.78(4.29-5.33)
Unknown	0.20(0.17-0.25)	0.28(0.23-0.35)
Year (per 1 year increase)	1.13(1.11-1.14)	1.17(1.15-1.19)
Time follow up (per 1 month increase per year)	1.22(1.21-1.24)	1.28(1.26-1.30)

Conclusions

- There was a significant increase in syphilis testing among PLWH in British Columbia from 2015 to 2019
- The vast majority of this syphilis testing is routine screening linked to viral load monitoring.
- Frequent testing is associated with being MSM, residing in Vancouver, and attending an HIV specialty or primary care clinic
- As HIV monitoring becomes less frequent in stable PLWH, the frequency of syphilis testing could be compromised, and stand-alone testing may be needed.