DECREASES IN HIV INCIDENCE IN A MONTREAL CLINIC COINCIDE WITH EXPANDING PREP USE

Poster # 1037

Mariève Beauchemin, Zoë Greenwald, Jason Szabo, Louise Charest, Judith Fafard, Danièle Longpré, Stéphane Lavoie, Réjean Thomas

Institution: Clinique médicale l'Actuel, Montréal, QC, Canada

zoe.greenwald@lactuel.ca

Presented at the
CROI 2018 Conference
Boston, MA, March 7, 2018

BACKGROUND AND OBJECTIVES

- With the objective to eliminate HIV transmission for 2030 signed into political action by Montreal's Fast-Track City Initiative, combined prevention measures are the key to eliminating HIV transmission
- L'Actuel is a sexual health clinic located in the heart of Montréal's gay village which has offered a variety of HIV treatment and prevention services since 1984
- Promising trends have been observed at our clinic in recent years with increasing participation in HIV prevention programs
- This study aims to summarize the performance of combined prevention strategies alongside annual trends in HIV rates at l'Actuel

METHODS

Study design: Time-series panel data retrospective study from the research database of Clinique médicale l'Actuel (Montréal, Canada)

Services offered at l'Actuel:

- Routine testing for HIV and STIs (available seven days a week)
- Treatment for HIV, Hepatitis B and C, STIs
- PEP (available since 2001) and PrEP (available since 2011)
- Harm reduction substitution therapy (methodone/suboxone)

Study outcomes: To examine the effects of combined prevention on rates of HIV transmission, we look at annual trends in HIV incidence, PrEP initiations, PEP episodes, number of individuals screened annually, mean number of HIV tests per individual annually, and the proportion of seropositive patients having an undetectable viral load

Timeline: January 1, 2011 – December 31, 2016

Statistical Analysis: HIV incidence was calculated based on the number of HIV diagnoses per 100 individuals screened per year.

Figure 1. Trends in HIV testing, diagnoses and prophylactic programs

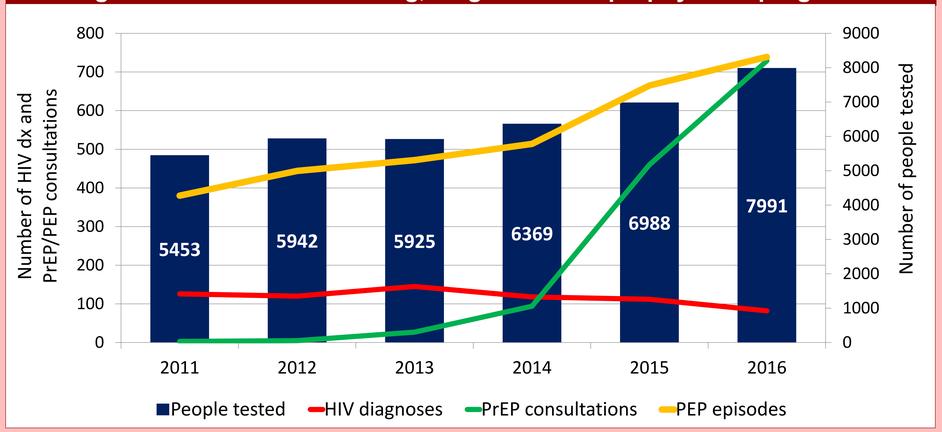
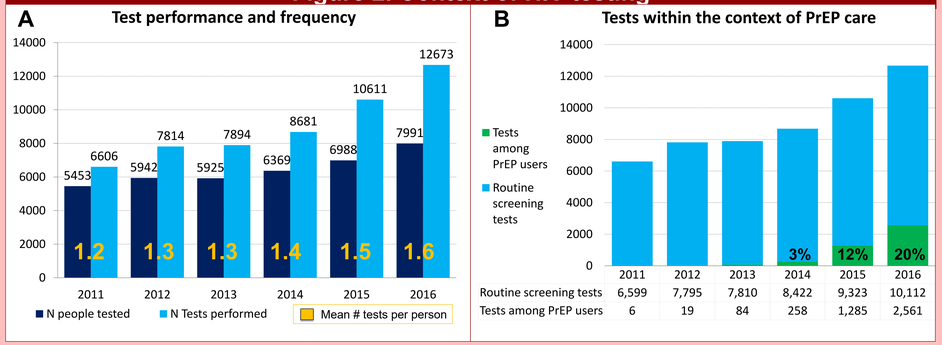


Figure 2. Context of HIV testing



RESULTS

- From 2011 to 2016, HIV incidence dropped by 56%, from 2.31 to 1.03 new HIV diagnoses per 100 individuals screened annually (Table 1, Figure 1).
- Meanwhile, the number of consultations for PrEP increased exponentially and gradual increases were observed in number of PEP treatments (Table 1, Figure 1).
- The proportion of seropositive patients at the clinic having an undetectable viral load, reached 95% by 2016 (Table 1)
- Both the number of individuals screened annually and the total number of tests increased from 2011 to 2016, by 47% and 31%, respectively (Figure 2A, Table 1). This proportion of tests occurring within the context of PrEP care reached 12% in 2015 and 20% in 2016 (Figure 2B).
- Table 2 summarizes the characteristics of HIV cases from 2011-2016

Table 2. Characteristics of new HIV cases by year

Baseline variables	2011	2012	2013	2014	2015	2016	TOTAL
Age, Median (IQR)	32 (27-39)	32 (28-44)	32 (26-44)	33 (27-42)	31 (26-39)	33 (25-41)	**32 (26-42)**
CD4 (cells/µl), Median (IQR)	400 (280-500)	420 (268-538)	420 (250-561)	385 (285-550)	454 (310-604)	470 (352-620)	**420 (290-556)**
Viral Load (log10cp/µl) Median (IQR)	4.8 (4.2-5.1)	4.8 (4.4-5.2)	4.7 (4.2-5.1)	4.8 (4.0-5.4)	4.5 (3.9-5.2)	4.6 (4.0-5.3)	**4.7 (4.1-5.2)**
Male sex, N (%)	118 (94%)	110 (92%)	140 (97%)	108 (92%)	107 (96%)	75 (92%)	**658 (94%)**
Risk factors present at diagnosis, N (%)							
MSM	113 (90%)	100 (84%)	132 (92%)	100 (85%)	101 (90%)	71 (87%)	**617 (88%)**
Injecting Drug Use	0 (--)	3 (3%)	3 (2%)	4 (3%)	2 (2%)	2 (2%)	**14 (2%)**
Seropositive partner	37 (40%)	38 (32%)	28 (19%)	20 (17%)	17 (15%)	10 (12%)	**150 (21%)**
Multiple partners	49 (39%)	40 (33%)	52 (36%)	41 (35%)	36 (32%)	27 (33%)	**245 (35%)**
Immigrated from HIV endemic region	14 (11%)	8 (7%)	4 (3%)	9 (8%)	5 (5%)	8 (10%)	**48 (7%)**
TOTAL	**126**	**120**	**145**	**118**	**112**	**82**	**703**

Table 1. Trends in HIV diagnosis and combined prevention performance measures 2011 - 2016

Year	Number of people tested	Number of HIV tests	Annual mean # of tests per person	HIV diagnoses	New HIV cases per 100 people tested	Annual percent change in HIV rates	PrEP consults	PEP episodes	% of HIV patients with undetectable viral load
2011	5453	6606	1.21	126	2.31		3	380	92
2012	5942	7814	1.32	120	2.02	-12.60%	5	444	91
2013	5925	7894	1.33	145	2.45	21.18%	27	472	93
2014	6369	8681	1.36	118	1.85	-24.29%	94	514	94
2015	6988	10 611	1.52	112	1.60	-13.49%	460	665	94
2016	7991	12 673	1.59	82	1.03	-35.98%	729	739	95
TOTAL	**21 950**	**54 279**	--	**703**	--	--	**1318**	**3214**	--

DISCUSSION

- Our study found a major drop in HIV incidence within the past five years among our clinic's clientele.
- This decline, in parallel with the exponential increase in PrEP initiations, confirms the importance of ensuring PrEP is available to everyone who should need it. It is important to underline, however, that within our clinic this decline was already in progress and is likely attributable, at least in part, to progress towards treatment as prevention and other preventive efforts.
- Our results represent the experience of one major clinic in Montreal and are not generalizable to other settings in Canada. Provincial surveillance data has shown no decline in HIV incidence in Montreal, which varied from 8.8 to 8.7 per 100,000 population from 2015 to 2016.[1] Furthermore, the Canadian national diagnosis rate increased from 5.8 to 6.4 per 100,000 population from 2015 to 2016.[2] Estimates from surveillance data suggest that PrEP use has not yet shown impacts at a population-level. Continued efforts to monitor the potential influence of PrEP and other combined prevention methods on new HIV cases at the population-level are essential.
- Efforts should be made to further increase accessibility of combined prevention measures in semi-urban/rural areas in Quebec and among youth and older populations, who may be less aware of the availability and effectiveness of PrEP.

Citations:

1. Bitera R, Favuel M, Alary M, Tremblay C, Sylvain D, Hastie M. Programme de surveillance de l'infection par le virus de l'immunodéficience humaine (VIH) au Québec : rapport annuel 2016. Institut national de santé publique du Québec. Dec 2017.
2. Bourgeois AC, Edmunds M, Awan A, Jonah L, Varsaneux O, Siu W. HIV in Canada— Surveillance Report, 2016. Can Commun Dis Rep. 2017;43(12):248-55.

Acknowledgements: We thank the study participants, nurses, doctors, and members of the research team who made this work possible.