Reported patient experiences of HIV diagnosis and linkage to care before and after implementation of a population-wide Treatment as Prevention program

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Background

- In 2010, British Columbia implemented the Seek and Treat for Optimal Prevention of HIV/AIDS (STOP) initiative,
- STOP initiative seeks to expand HIV testing and timely initiation of and engagement in antiretroviral therapy (ART) to optimize Treatment as Prevention (TasP).

Objective: To evaluate HIV care experiences, engagement, and therapeutic and clinical outcomes among participants diagnosed with HIV prior to and subsequent to STOP.

Methods

- The STOP HIV/AIDS Program Evaluation (SHAPE) cohort study recruited (Sep. 2016-Aug. 2018) people living with HIV, 19+, across BC. Cohort data was combined with data from the Drug Treatment Program.
- Date of HIV diagnosis was stratified by prior to (2000-2009) and subsequent to (≥2010) STOP implementation.
- Chi-square and Wilcoxon Rank Sum tests compare key population groups to each time-period.
- Cox proportional hazards regressions compare time to ART initiation and virological suppression (plasma viral load <200 copies/ml) in each time-period, controlling for age, sexual orientation, gender, and injection substance use.
- Kaplan Meier curves display time to ART initiation and time to virological suppression in each time-period.

Results

- Of 644 participants, 319 were excluded from analysis due to missing data, starting ART elsewhere, or diagnosis before 2000.
- Of the remaining 325:
  - 198 (60.9%) were diagnosed prior to and 127 (39.1%) subsequent to STOP, 235 (72.3%) were men, 151 (46.5%) reported injection drug use, 118 (36.4%) have or have had Hepatitis C (see **Table 1**).
  - Participants diagnosed subsequent to STOP were timelier to initiate ART and reach virological suppression (see **Table 2 and 3**; **Figure 1)**.
  - Reduced timeliness exists for transgender and non-binary participants to initiate ART (vs. men; p=0.02) (see **Table 2)**.

Acknowledgments: We gratefully acknowledge all participants who committed their time and experiences towards the SHAPE study; the SHAPE team; the BC Centre for Excellence in HIV/AIDS; the BC Ministry of Health for funding; and the partnering organizations for assistance in recruitment and data collection.

PRESENTED AT THE 23RD INTERNATIONAL AIDS CONFERENCE (AIDS 2020) | 6-10 JULY 2020

Table 1: Baseline characteristics of participants stratified by HIV diagnosis date.

Variable	Prior to STOP (N=198) (N, %)	Subsequent to STOP (N=127) (N, %)	P-Value
Gender identity			**0.004**
Male	131 (66.2)	104 (81.9)	
Female	64 (32.3)	21 (16.5)	
Other*	3 (1.5)	2 (1.6)	
Sexual orientation			**0.039**
Straight	100 (50.5)	46 (36.2)	
Gay	68 (34.3)	58 (45.7)	
Other	30 (15.2)	23 (18.1)	
Education			**0.001**
Incomplete high school	76 (38.4)	26 (20.5)	
High school or greater	122 (61.6)	101 (79.5)	
Ever incarcerated as adult (yes)	95 (48.0)	39 (30.7)	**0.002**
Ever hepatitis C (yes)	95 (48.2)	23 (18.1)	**<0.001**
Ever inject non-prescription drugs (yes)	105 (53.0)	46 (36.2)	**0.003**
Significant depressive symptoms	89 (50.6)	67 (55.4)	0.415
Variable	**Median (Q1-Q3)**	**Median (Q1-Q3)**	**P-Value**
Age (years)	37 (31-44)	38 (29-47)	0.258
CD4 count at first ART (cells/ul)	270 (170-430)	410 (220-620)	**0.001**

Table 2: Multivariable Cox regression analysis of time to ART initiation.

Variable	aHR (95% CI)	P-Value
Year of HIV diagnosis		
2000 to 2009	Ref	
2010 to 2018	5.97 (4 .47-7.97)	**<0.001**
Sexual Orientation		
Heterosexual	Ref	
Homosexual	1.12 (0.82-1.54)	0.480
Other	0.98 (0.67-1.42)	0.904
Ever Injected Substances		
No	Ref	
Yes	0.99 (0.76-1.29)	0.918
Gender		
Man	Ref	
Woman	1.15 (0.84-1.59)	0.391
Other*	0.18 (0.05-0.76)	**0.020**
Age at baseline	1.01 (0.998-1.02)	0.095

Table 3: Multivariable Cox regression analysis of time to virological suppression.

Variable	aHR (95% CI)	P-Value
Year of HIV diagnosis		
2000 to 2009	Ref	
2010 to 2018	2.03 (1.58-2.60)	**<0.001**
Sexual Orientation		
Heterosexual	Ref	
Homosexual	1.67 (1.27-2.20)	**<0.001**
Other	1.23 (0.88-1.72)	0.217
Ever Injected Substances		
No	Ref	
Yes	0.95 (0.75-1.20)	0.663
Gender		
Man	Ref	
Woman	0.91 (0.68-1.21)	0.518
Other*	0.71 (0.29-1.75)	0.456
Age at baseline	1.01 (0.995-1.02)	0.254

*Other gender is inclusive of transgender women, transgender men, and other responses. Bolded text indicates significant results at $P < 0.05$.

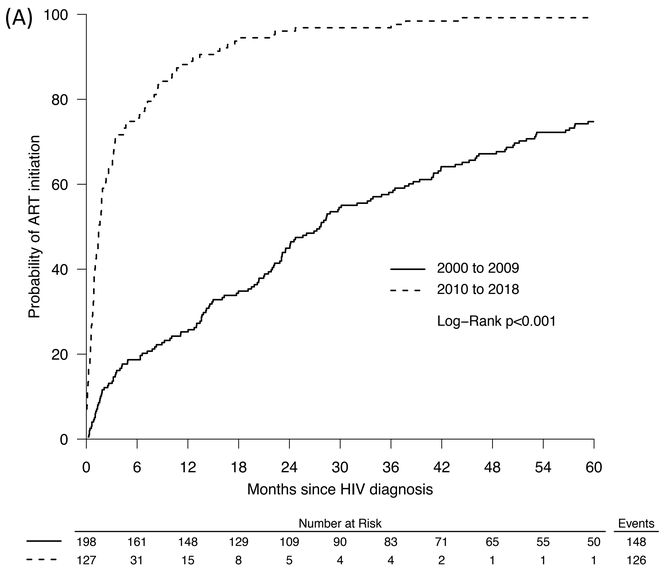

Figure 1: Kaplan Meier plots for time to (A) ART initiation and (B) virological suppression by STOP-HIV/AIDS era.

Key Findings

- Reduction in time to ART initiation and to virological suppression following HIV diagnosis after implementation of a provincial initiative promoting TasP.
- Lesser improvements were seen for women, transgender men, and transgender women in comparison to men.