BRITISH COLUMBIA
CENTRE *for* EXCELLENCE
in HIV/AIDS

HIV MONITORING QUARTERLY REPORT

FOR BRITISH COLUMBIA

FIRST QUARTER 2016

Foreword

As part of the BC Centre for Excellence (BC-CFE) in HIV/AIDS's mandate to evaluate the outcomes of STOP HIV/AIDS programming in BC, we have developed quarterly HIV/AIDS monitoring reports. These reports provide up-to-date data on a variety of key HIV-related surveillance and treatment indicators. Selection of these indicators was achieved through a collaborative process with various Health Authority (HA) representatives. There are six reports in total, one for each HA and one for the province of BC as a whole. In addition, there is a technical report which explains how each HIV indicator is calculated. Data used in these reports come from the British Columbia Centre for Disease Control (BCCDC), MSP billings, hospitalization data from the Discharge Abstract Database, the Sunquest Laboratory database at the Provincial Public Health Microbiology and Reference Laboratory, Providence Health Care laboratory and the BC-CFE Drug Treatment Program (DTP) Database.

The objectives of these reports are to:

1. Provide timely HA-specific information on key HIV indicators which will guide and inform HIV leaders and innovators in the development of future HIV interventions and programs which will ultimately lead to decreasing the burden of HIV in BC. The indicators will reflect ongoing or past successful public health interventions and highlight areas in the HIV care spectrum which require further attention and support.
2. Highlight limitations in our current data due to incomplete or time lagged data and to develop future strategies to improve complete and timely data capture.

These reports are produced for the benefit of individual HA's. As such, we are enthusiastic about your involvement and cooperation regarding the development of these monitoring reports. Please forward your comments and queries to Irene Day, Director of Operations at the BC-CFE at iday@cfenet.ubc.ca.

List of Indicators

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Acknowledgements and Contributions

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British Columbia Centre for Excellence in HIV/AIDS (BC-CFE): The BC-CFE is responsible for the conception, preparation and ongoing review of this quarterly report. The BC-CFE provides the data and outputs for Indicators 5 (HIV Cascade of Care), 6 (Programmatic Compliance Score), 7 (New Antiretroviral Starts), 8 (CD4 Cell Count at ART Initiation), 9 (Active and Inactive Drug Treatment Program Participants), 10 (Antiretroviral Adherence Level), 11 (Resistance Testing Results by Resistance Category), 12 (AIDS-Defining Illness), and 13 (HIV-Related Mortality). The BC-CFE database provides PVL and CD4 cell count testing data, as well as ART use. All PVL measurements in BC are performed at the St Paul's Hospital virology laboratory, thus PVL data capture is 100%. An estimated 80% of all CD4 count measurements performed in the province are captured in the BC-CFE data holdings. The STOP HIV/AIDS Technical Monitoring Committee–BC-CFE is responsible for oversight of the monitoring report. James Nakagawa wrote, compiled, edited, and published this monitoring report. Paul Sereda, Dr. Viviane Lima and Nada Gataric perform analysis of Indicators 5–13. This report was conceived and guided by Dr. Julio Montaner.

BC Centre for Disease Control
An agency of the Provincial Health Services Authority

British Columbia Centre for Disease Control (BCCDC): The BCCDC provides the data and outputs for Indicator 1 (HIV Testing Episodes), Indicator 2 (HIV Testing Rate), Indicator 3 (New HIV Diagnoses), Indicator 4 (Stage of HIV at Diagnosis) and Indicator 12 (AIDS-Defining Illness). The BCCDC is the single provincial agency that centralizes all HIV surveillance through the Public Health Microbiology and Reference Laboratory, which does more than 90% of all HIV screening tests in BC and all confirmatory testing. Theodora Consolacion and Dr. Jason Wong are responsible for outputs for Indicators 1–4.

Other Data Sources:

The above databases were supplemented with:

(I) The BC Vital Statistics database which was used to calculate Indicator 5. The HIV Cascade of Care and Indicator 13. HIV-Related Mortality.

(II) Linkage and preparation of the de-identified individual-level database used for calculating Indicator 5. The HIV Cascade of Care was facilitated by the British Columbia Ministry of Health.

(III) The Statistics Canada database: BC and HIV-positive population counts were acquired through the statistics Canada website to calculate HIV-specific mortality rates for Indicator 13. HIV-Related Mortality.

Membership of the STOP HIV/AIDS Technical Monitoring Committee–BC-CfE

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The Seek and Treat for Optimal Prevention (STOP) HIV/AIDS BC Provincial Program: A Note on Monitoring and Interpreting HIV Indicators

The Seek and Treat for Optimal Prevention (STOP) of HIV/AIDS programme is a provincial initiative to improve HIV diagnosis and care delivery in BC through increased HIV-specific funding to all Health Service Delivery Areas (HSDA's) across BC. The STOP provincial programme is an expansion of a four-year STOP pilot project which was implemented in two Health Service Delivery Areas in March 2010; the Vancouver HSDA which bears the largest burden of the HIV epidemic in the province and the Northern Interior HSDA which bears a high burden of HIV-related mortality. The STOP pilot project demonstrated the urgent need for improved efforts in early diagnosis of HIV and timely initiation of antiretroviral therapy (ART) initiation.

The expansion to a province-wide programme was announced on November 30th 2013 by the BC Ministry of Health with roll out of funding beginning on April 1st, 2013. This funding is intended to be used in the implementation and evaluation of HIV-related diagnosis and care initiatives within individual HA's. Goals of the project include: 1. A reduction in the number of new HIV infections in BC; 2. Improvements in the quality, effectiveness, and reach of HIV prevention services; 3. An increase in early diagnosis of HIV; 4. A reduction in AIDS cases and HIV-related mortality.

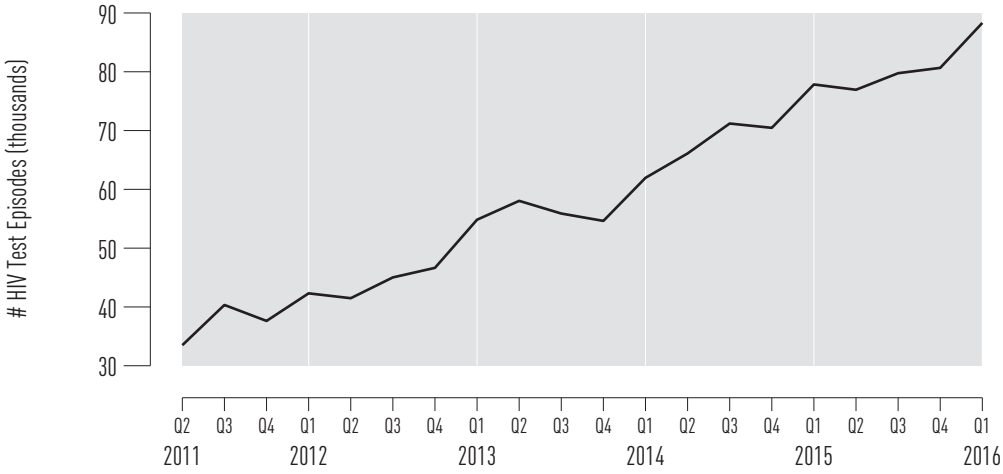
The goals of HA-led STOP-funded initiatives are to work toward achieving these goals. To these ends some outcome measures or indicators of progress have been drafted that should be considered in the design and implementation phases of these initiatives.

HIV Testing Episodes and Rates

In this section, the number of HIV test episodes and point of care (POC) HIV tests conducted each quarter in BC is shown. In general terms the goal is to increase the number of tests performed and to maximize testing efficiency. Test episodes are allocated by region according to where the test is performed.

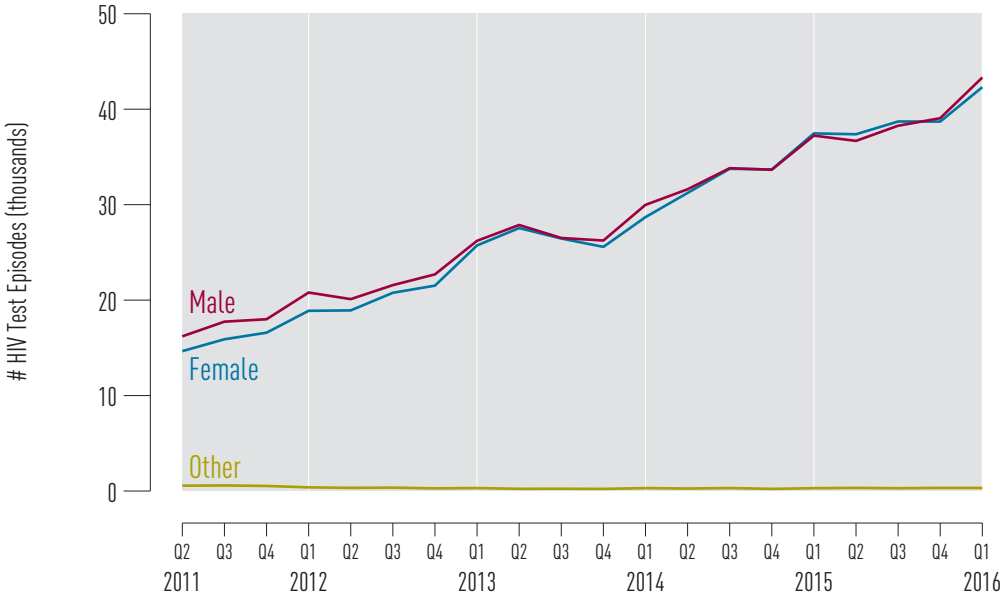
Indicator 1. HIV Testing Episodes

Figure 1.1 HIV Test Episodes for British Columbia



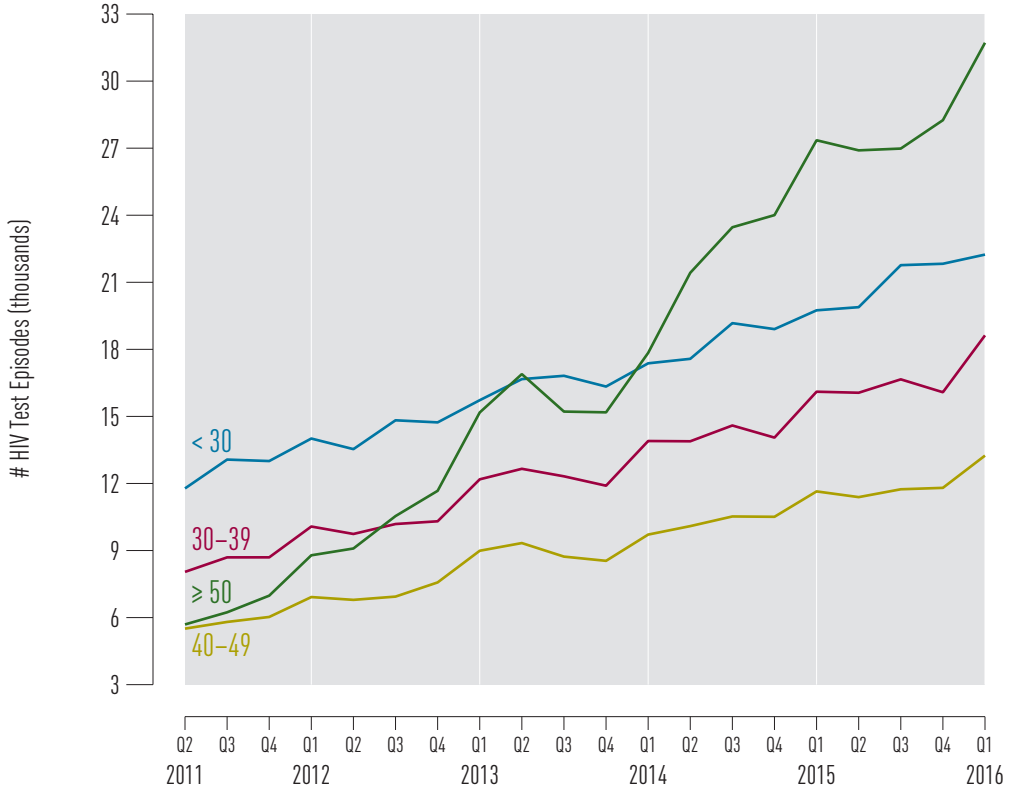
British Columbia	33.5	40.3	37.6	42.3	41.5	45.0	46.6	54.8	58.0	55.9	54.6	62.0	66.1	71.2	70.5	77.8	76.9	79.8	80.7	88.3

Figure 1.2 HIV Test Episodes by Gender for British Columbia [1,2]



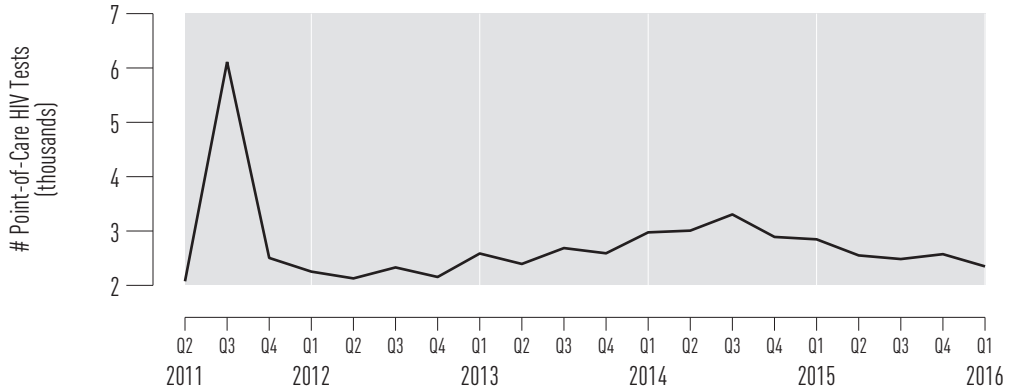
Female	14.7	15.9	16.6	18.9	18.9	20.8	21.5	25.7	27.5	26.5	25.6	28.7	31.2	33.8	33.7	37.5	37.4	38.7	38.7	42.3
Male	16.2	17.7	18.0	20.8	20.1	21.6	22.7	26.2	27.9	26.5	26.2	30.0	31.6	33.8	33.7	37.2	36.7	38.3	39.1	43.3
Other	0.6	0.6	0.5	0.4	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3

Figure 1.3 HIV Test Episodes by Age Category for British Columbia [1,2]



< 30	11.8	13.1	13.0	14.0	13.5	14.8	14.7	15.7	16.7	16.8	16.3	17.4	17.6	19.2	18.9	19.7	19.9	21.8	21.8	22.2
30–39	8.0	8.7	8.7	10.1	9.7	10.2	10.3	12.2	12.7	12.3	11.9	13.9	13.9	14.6	14.1	16.1	16.1	16.7	16.1	18.6
40–49	5.5	5.8	6.0	6.9	6.8	6.9	7.6	9.0	9.3	8.7	8.5	9.7	10.1	10.5	10.5	11.6	11.4	11.7	11.8	13.2
≥ 50	5.7	6.2	7.0	8.8	9.1	10.5	11.7	15.2	16.9	15.2	15.2	17.8	21.4	23.5	24.0	27.4	26.9	27.0	28.3	31.7

Figure 1.4 Point-of-Care HIV Tests for British Columbia



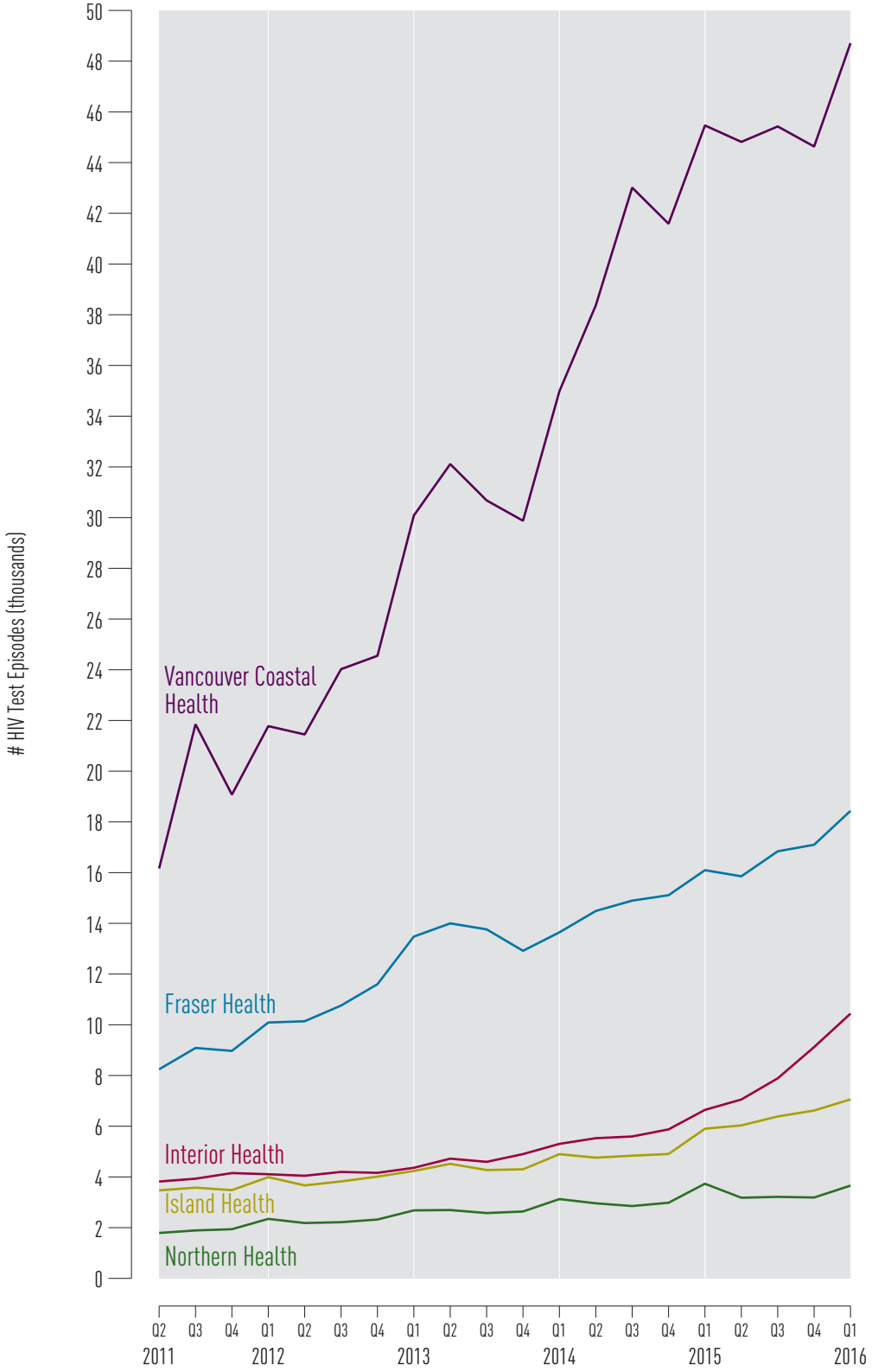
British Columbia	2.1	6.1	2.5	2.3	2.1	2.3	2.2	2.6	2.4	2.7	2.6	3.0	3.0	3.3	2.9	2.8	2.6	2.5	2.6	2.3

1 *Data Source: The BC Public Health Microbiology and Reference Laboratory (BCPHMRL) courtesy of the BC Centre for Disease Control (BCCDC). HIV screening tests conducted by the VIHA Laboratory are not included.*

Limitation: Repeat tests in individuals who test using various identifiers may not be identified and these individuals may be counted more than once.

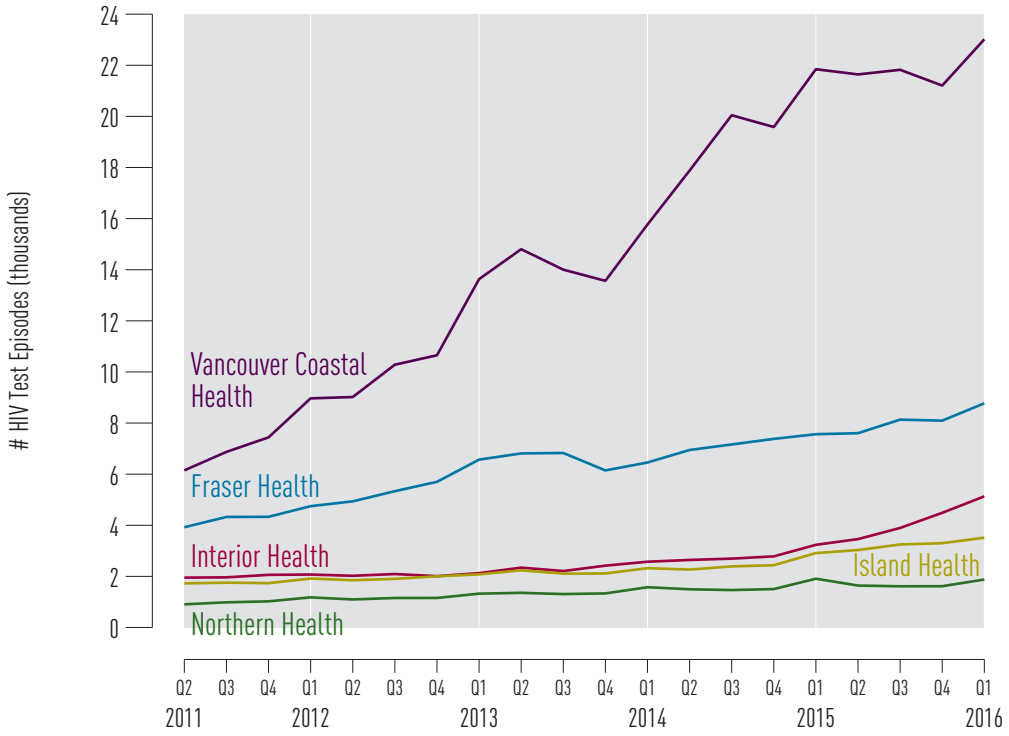
2 *Testing does not include point of care tests.*

Figure 1.5 HIV Test Episodes for British Columbia by Health Authority [1]



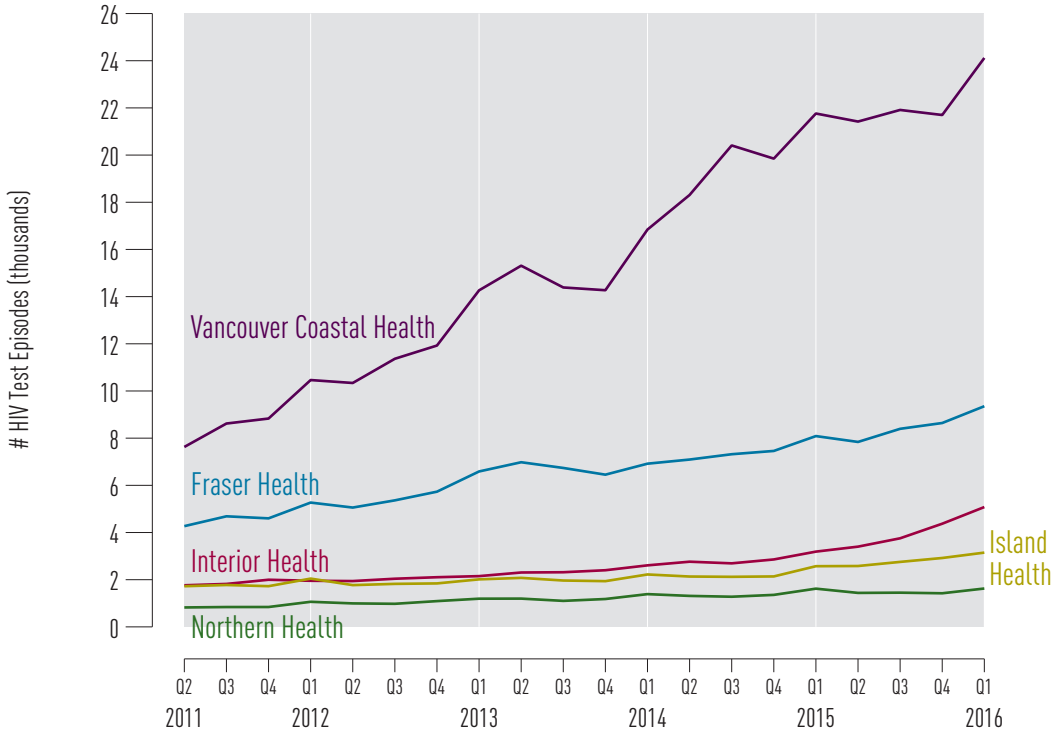
Fraser Health	8.2	9.1	9.0	10.1	10.1	10.8	11.6	13.5	14.0	13.8	12.9	13.6	14.5	14.9	15.1	16.1	15.9	16.8	17.1	18.4
Interior Health	3.8	3.9	4.2	4.1	4.0	4.2	4.2	4.4	4.7	4.6	4.9	5.3	5.5	5.6	5.9	6.6	7.1	7.9	9.1	10.4
Island Health	3.5	3.6	3.5	4.0	3.7	3.8	4.0	4.2	4.5	4.3	4.3	4.9	4.8	4.8	4.9	5.9	6.0	6.4	6.6	7.1
Northern Health	1.8	1.9	1.9	2.3	2.2	2.2	2.3	2.7	2.7	2.6	2.6	3.1	3.0	2.9	3.0	3.7	3.2	3.2	3.2	3.7
Vancouver Coastal Health	16.2	21.9	19.1	21.8	21.4	24.0	24.6	30.1	32.1	30.7	29.9	35.0	38.4	43.0	41.6	45.5	44.8	45.4	44.6	48.7

Figure 1.6 HIV Test Episodes for Non-prenatal Females in British Columbia by Health Authority [1,2]



Fraser Health	3.9	4.3	4.3	4.7	4.9	5.3	5.7	6.6	6.8	6.8	6.1	6.5	6.9	7.2	7.4	7.6	7.6	8.1	8.1	8.8
Interior Health	2.0	2.0	2.1	2.1	2.0	2.1	2.0	2.1	2.3	2.2	2.4	2.6	2.6	2.7	2.8	3.2	3.5	3.9	4.5	5.1
Island Health	1.7	1.8	1.7	1.9	1.8	1.9	2.0	2.1	2.2	2.1	2.1	2.3	2.3	2.4	2.4	2.9	3.0	3.2	3.3	3.5
Northern Health	0.9	1.0	1.0	1.2	1.1	1.2	1.2	1.3	1.4	1.3	1.3	1.6	1.5	1.5	1.5	1.9	1.6	1.6	1.6	1.9
Vancouver Coastal Health	6.1	6.9	7.4	9.0	9.0	10.3	10.7	13.6	14.8	14.0	13.6	15.8	17.9	20.0	19.6	21.8	21.6	21.8	21.2	23.0

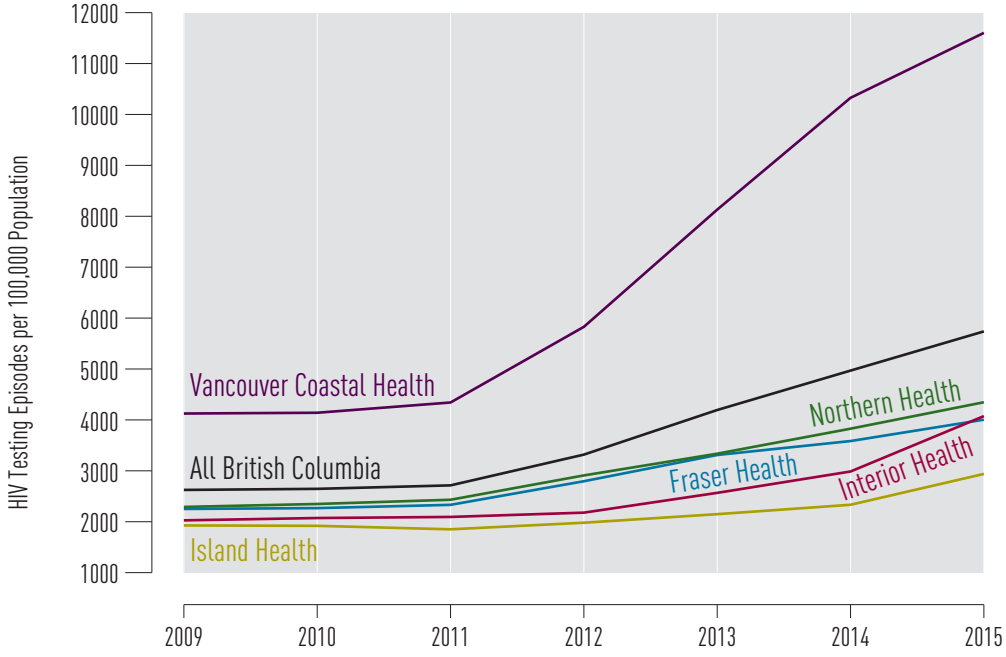
Figure 1.7 HIV Test Episodes for Males in British Columbia by Health Authority [1,2]



Fraser Health	4.3	4.7	4.6	5.3	5.1	5.4	5.7	6.6	7.0	6.7	6.5	6.9	7.1	7.3	7.5	8.1	7.8	8.4	8.6	9.4
Interior Health	1.8	1.8	2.0	2.0	1.9	2.0	2.1	2.2	2.3	2.3	2.4	2.6	2.8	2.7	2.9	3.2	3.4	3.8	4.4	5.1
Island Health	1.7	1.8	1.7	2.0	1.8	1.8	1.8	2.0	2.1	2.0	1.9	2.2	2.1	2.1	2.1	2.6	2.6	2.8	2.9	3.1
Northern Health	0.8	0.8	0.8	1.1	1.0	1.0	1.1	1.2	1.2	1.1	1.2	1.4	1.3	1.3	1.4	1.6	1.4	1.4	1.4	1.6
Vancouver Coastal Health	7.6	8.6	8.8	10.5	10.3	11.4	11.9	14.3	15.3	14.4	14.3	16.8	18.3	20.4	19.9	21.8	21.4	21.9	21.7	24.1

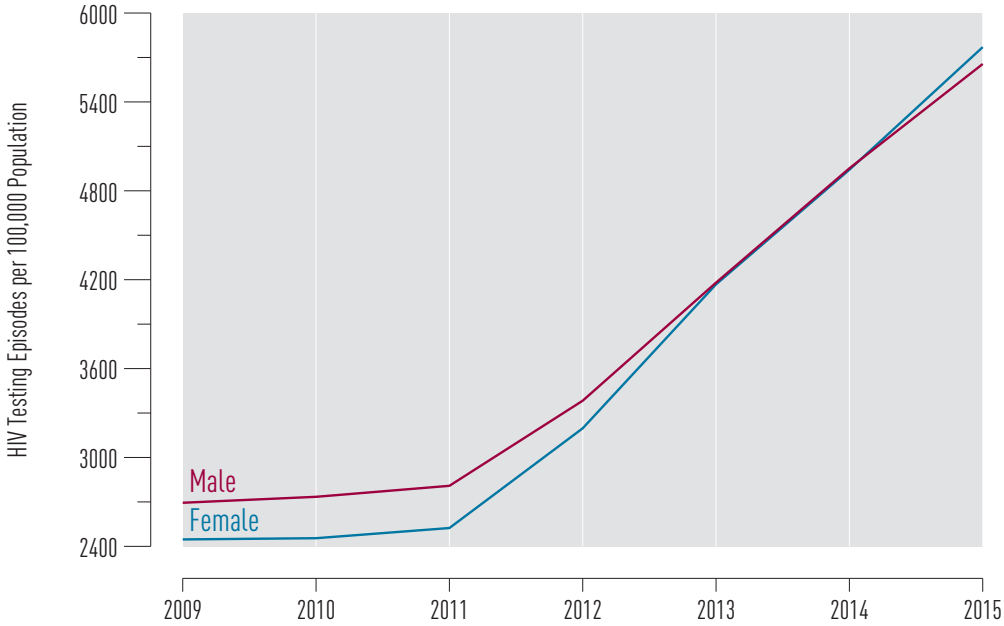
Indicator 2. HIV Testing Rates

Figure 2.1 Rate of HIV Testing for British Columbia and Health Authorities [2]



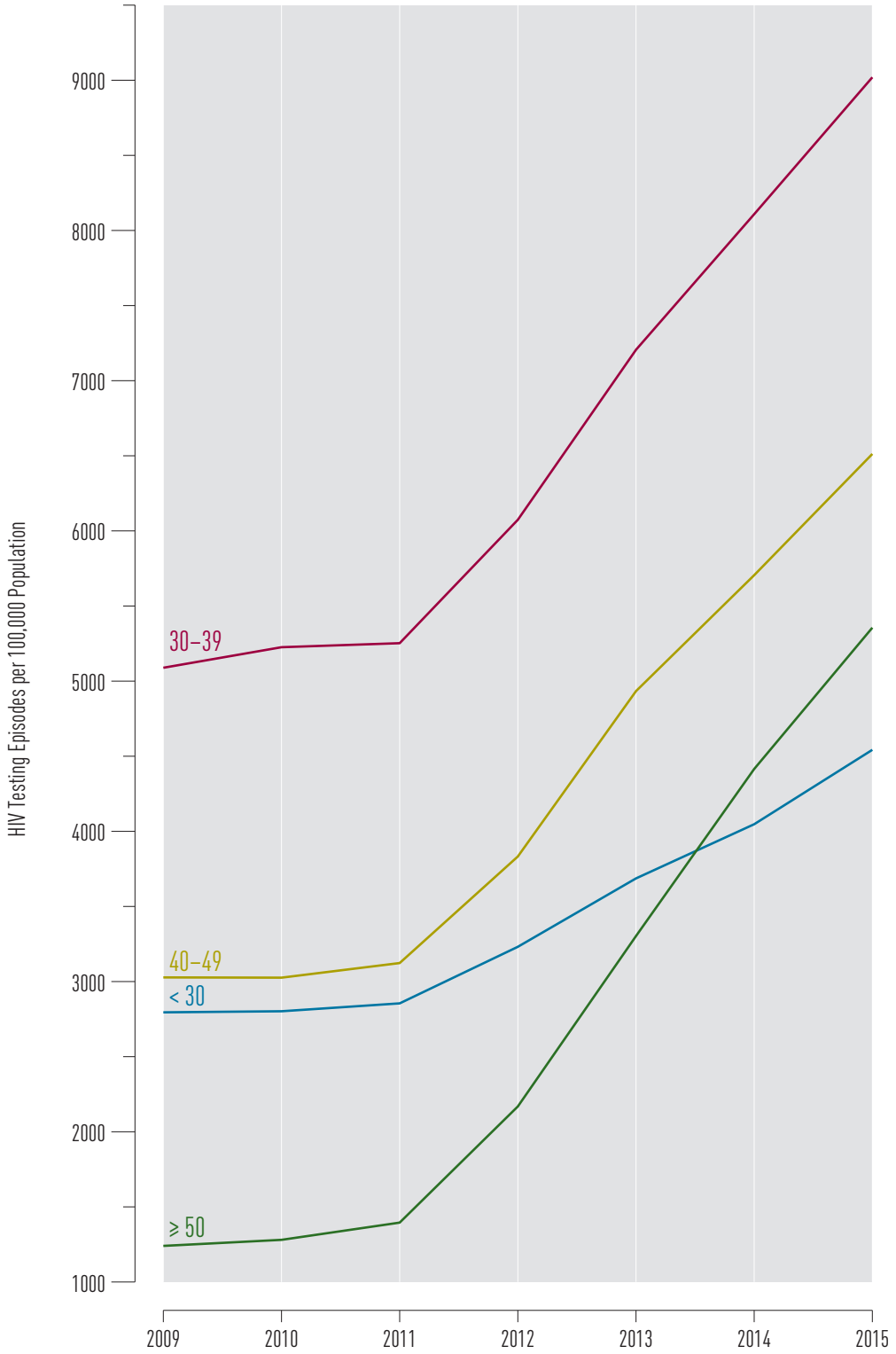
	2009	2010	2011	2012	2013	2014	2015
All British Columbia	2624.9	2645.8	2714.2	3318.5	4194.5	4968.9	5738.4
Fraser Health	2251.2	2267.6	2331.6	2795.3	3310.9	3584.8	4004.4
Interior Health	2026.9	2072.7	2094.1	2178.4	2566.9	2986.8	4074.5
Island Health	1927.0	1919.6	1851.0	1980.4	2148.6	2333.2	2939.1
Northern Health	2290.7	2348.6	2431.8	2909.8	3336.5	3827.6	4347.2
Vancouver Coastal Health	4125.4	4140.5	4342.2	5828.4	8130.3	10326.7	11602.2

Figure 2.2 Rate of HIV Testing by Gender for British Columbia [2]



	2009	2010	2011	2012	2013	2014	2015
Female	2446.8	2455.1	2523.7	3197.0	4168.6	4942.2	5769.8
Male	2694.3	2734.5	2808.7	3383.3	4180.2	4951.7	5656.1

Figure 2.3 Rate of HIV Testing by Age Category for British Columbia [2]



	2009	2010	2011	2012	2013	2014	2015
< 30	2795.1	2802.3	2854.8	3231.4	3686.7	4047.3	4542.6
30–39	5088.9	5225.7	5252.5	6074.0	7205.8	8108.3	9019.6
40–49	3027.5	3025.9	3123.2	3832.5	4933.5	5705.2	6512.3
≥ 50	1240.3	1280.6	1395.3	2168.5	3303.0	4415.0	5355.6

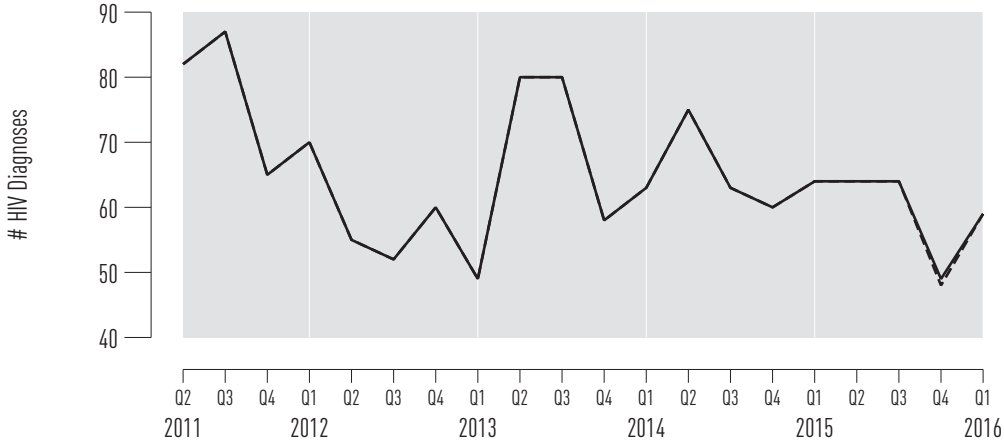
2 *Testing does not include point of care tests.*

New HIV Diagnoses

Trends in HIV diagnoses by gender and exposure category are described. Interpreting HIV diagnoses must be done with consideration that trends are influenced by both changes in testing rate as well as changes in transmission rates. It is important to note that new HIV diagnoses cases and rates are not synonymous with HIV incidence as a person may have become infected with HIV long before they tested positive for HIV. However, as there is no reliable method for measuring HIV incidence, we follow trends in HIV diagnoses.

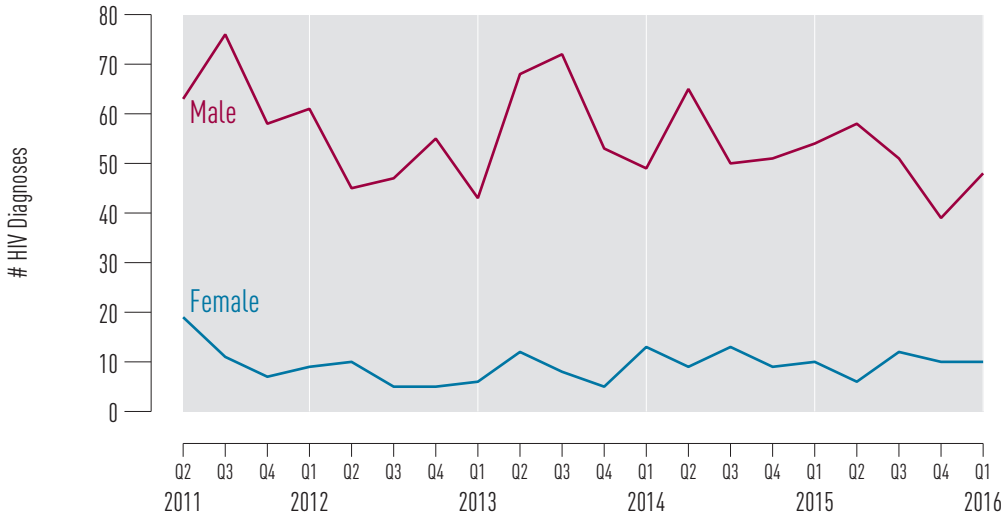
Indicator 3. New HIV Diagnoses

Figure 3.1 New HIV Diagnoses for British Columbia [3]



	Q2 2011	Q3	Q4	Q1 2012	Q2	Q3	Q4	Q1 2013	Q2	Q3	Q4	Q1 2014	Q2	Q3	Q4	Q1 2015	Q2	Q3	Q4	Q1 2016
By Client Residence	82	87	65	70	55	52	60	49	80	80	58	63	75	63	60	64	64	64	49	59
By Provider Address	82	87	65	70	55	52	60	49	80	80	58	63	75	63	60	64	64	64	48	59

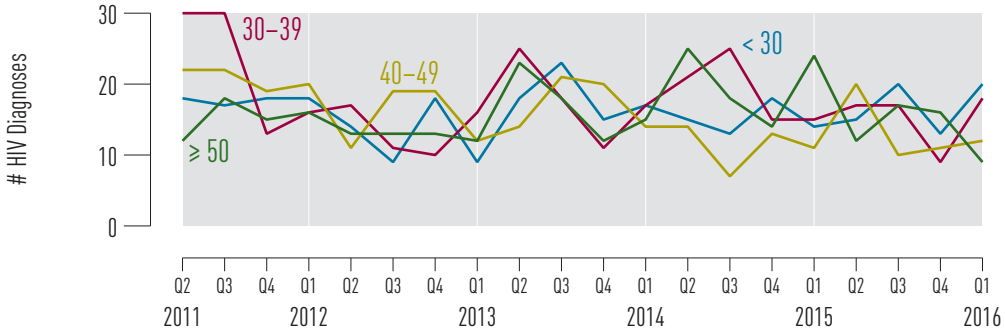
Figure 3.2 New HIV Diagnoses for British Columbia by Gender [3]



	Q2 2011	Q3	Q4	Q1 2012	Q2	Q3	Q4	Q1 2013	Q2	Q3	Q4	Q1 2014	Q2	Q3	Q4	Q1 2015	Q2	Q3	Q4	Q1 2016
Female	19	11	7	9	10	5	5	6	12	8	5	13	9	13	9	10	6	12	10	10
Male	63	76	58	61	45	47	55	43	68	72	53	49	65	50	51	54	58	51	39	48

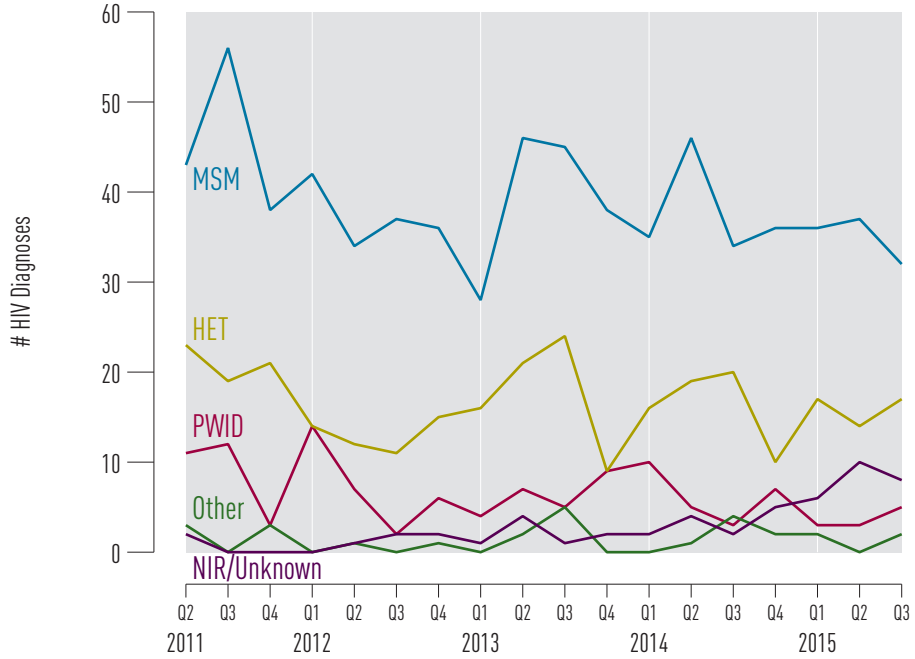
3 *Data Source: BCCDC. When present, "By Provider Address" is graphed as dashed line in same colour.*

Figure 3.3 New HIV Diagnoses for British Columbia by Age Category [3]



< 30	18	17	18	18	14	9	18	9	18	23	15	17	15	13	18	14	15	20	13	20
30–39	30	30	13	16	17	11	10	16	25	18	11	17	21	25	15	15	17	17	9	18
40–49	22	22	19	20	11	19	19	12	14	21	20	14	14	7	13	11	20	10	11	12
≥ 50	12	18	15	16	13	13	13	12	23	18	12	15	25	18	14	24	12	17	16	9

Figure 3.4 New HIV Diagnoses for British Columbia by Exposure Category [3,4]

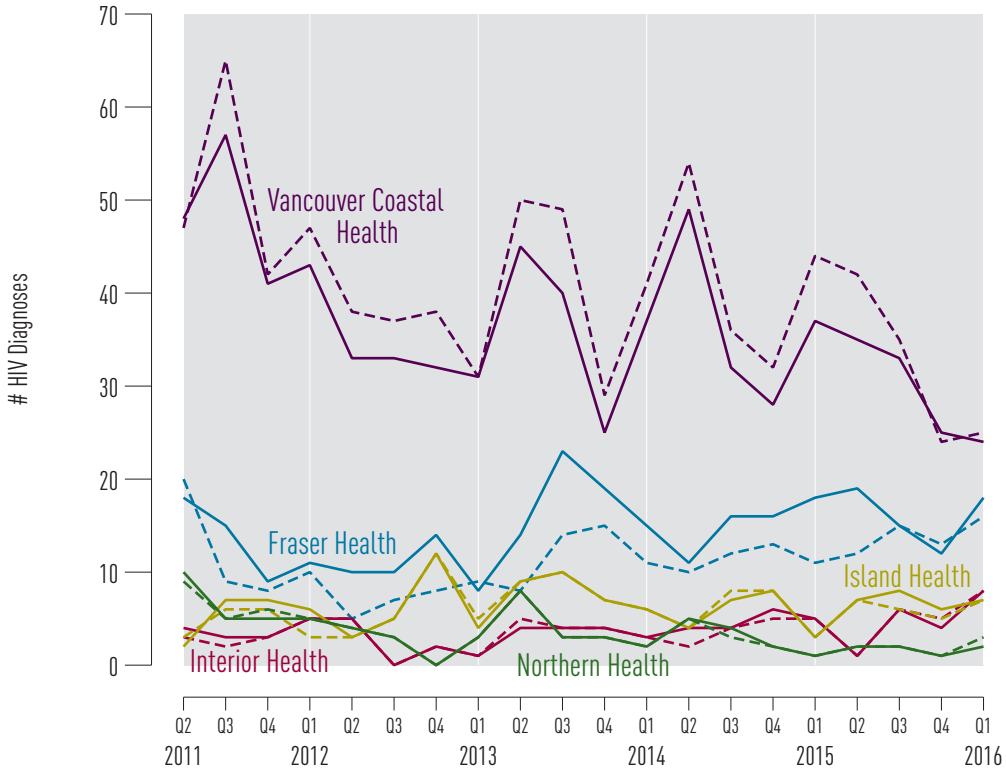


MSM (men who have sex with men)	43	56	38	42	34	37	36	28	46	45	38	35	46	34	36	36	37	32
PWID (persons who inject drugs)	11	12	3	14	7	2	6	4	7	5	9	10	5	3	7	3	3	5
HET (heterosexual)	23	19	21	14	12	11	15	16	21	24	9	16	19	20	10	17	14	17
Other (other exposure identified)	3	0	3	0	1	0	1	0	2	5	0	0	1	4	2	2	0	2
NIR/Unknown (no identified exposure)	2	0	0	0	1	2	2	1	4	1	2	2	4	2	5	6	10	8

3 *Data Source: BCCDC. When present, "By Provider Address" is graphed as dashed line in same colour.*

4 *MSM=men who have sex with men; PWID=people who inject drugs; HET=heterosexual. NIR=No identified risk/exposure.*

Figure 3.5 New HIV Diagnoses for British Columbia by Health Authority [3]



Fraser Health	18	15	9	11	10	10	14	8	14	23	19	15	11	16	16	18	19	15	12	18
By Provider Address	*20*	*9*	*8*	*10*	*5*	*7*	*8*	*9*	*8*	*14*	*15*	*11*	*10*	*12*	*13*	*11*	*12*	*15*	*13*	*16*
Interior Health	4	3	3	5	5	0	2	1	4	4	4	3	4	4	6	5	1	6	4	8
By Provider Address	*3*	*2*	*3*	*5*	*5*	*0*	*2*	*1*	*5*	*4*	*4*	*3*	*2*	*4*	*5*	*5*	*1*	*6*	*5*	*8*
Island Health	2	7	7	6	3	5	12	4	9	10	7	6	4	7	8	3	7	8	6	7
By Provider Address	*3*	*6*	*6*	*3*	*3*	*5*	*12*	*5*	*9*	*10*	*7*	*6*	*4*	*8*	*8*	*3*	*7*	*6*	*5*	*7*
Northern Health	10	5	5	5	4	3	0	3	8	3	3	2	5	4	2	1	2	2	1	2
By Provider Address	*9*	*5*	*6*	*5*	*4*	*3*	*0*	*3*	*8*	*3*	*3*	*2*	*5*	*3*	*2*	*1*	*2*	*2*	*1*	*3*
Vancouver Coastal Health	48	57	41	43	33	33	32	31	45	40	25	37	49	32	28	37	35	33	25	24
By Provider Address	*47*	*65*	*42*	*47*	*38*	*37*	*38*	*31*	*50*	*49*	*29*	*41*	*54*	*36*	*32*	*44*	*42*	*35*	*24*	*25*

3 *Data Source: BCCDC. When present, "By Provider Address" is graphed as dashed line in same colour.*

Stage of HIV Infection at Diagnosis

Classification of stage of HIV infection, in the absence of information regarding recent testing history, is reliant on clinical information available at the time of diagnosis, including first CD4+ cell count and laboratory results suggestive of acute HIV infection (Table 1). The benefits of Treatment as Prevention (TasP) are maximized when antiretroviral therapy (ART) is initiated at high CD4 cell counts. Accordingly, it is preferable that individuals newly diagnosed with HIV be in the early stages of HIV infection (stage 0 or 1) to allow for early ART initiation.

N.B. Interpretation of Stage of HIV Infection at Diagnosis should proceed with caution. Early increases in diagnosis at late stage (i.e., low CD4 counts) may represent a "catching up" of previously missed long term infected individuals rather than a trend toward diagnosis at later stage of infection.

Indicator 4. Stage of HIV Infection at Diagnosis

Table 1 Staging Classifications of Infection at Time of HIV Diagnosis Based on CDC HIV Surveillance Case Definitions

Stage	Criteria		
0	Laboratory criteria met for acute HIV infection, or previous negative or indeterminate HIV test within 180 days of first confirmed positive HIV test.		
1	Stage 0 not met	*and*	CD4 ≥500
2a			CD4 350–499
2b			CD4 200–349
3			CD4 <200
Unknown			No available CD4

Updated 2016 Q1: AIDS diagnosis date is no longer used in this indicator.

Figure 4.1 Stage of HIV Infection at Diagnosis for BC, 2011–2015 [5]

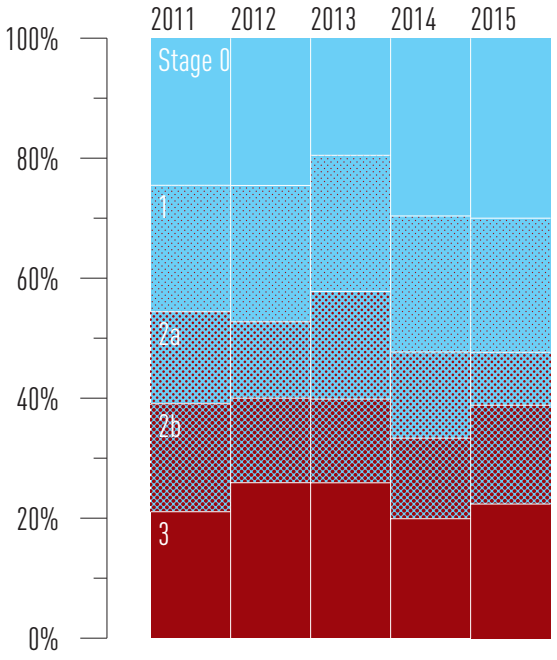
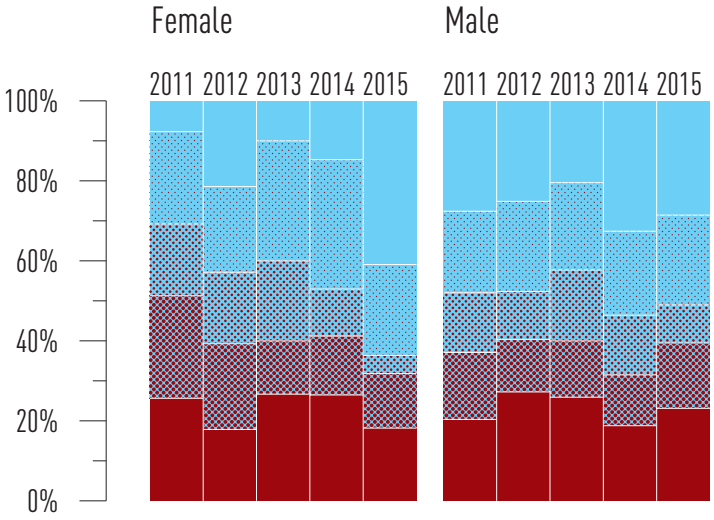


Figure 4.2 Stage of HIV Infection at Diagnosis by Gender for BC, 2011–2015 [5]



	British Columbia					*Female*					*Male*				
	2011	'12	'13	'14	'15	'11	'12	'13	'14	'15	'11	'12	'13	'14	'15
Stage 0	64	54	49	64	51	3	6	3	5	9	61	48	45	59	42
Stage 1	55	50	57	49	38	9	6	9	11	5	45	43	48	38	33
Stage 2a	40	28	45	31	15	7	5	6	4	1	33	23	39	27	14
Stage 2b	47	31	35	29	28	10	6	4	5	3	37	25	31	23	24
Stage 3	55	57	65	43	38	10	5	8	9	4	45	52	57	34	34
Unknown	27	16	15	44	70	4	1	1	11	17	22	15	14	33	53
Total *(n=)*	288	236	266	260	240	43	29	31	45	39	243	206	234	214	200

5 *Data Source: BCCDC*

Figure 4.3 Stage of HIV Infection at Diagnosis by Age Category for BC, 2011–2015 [5]

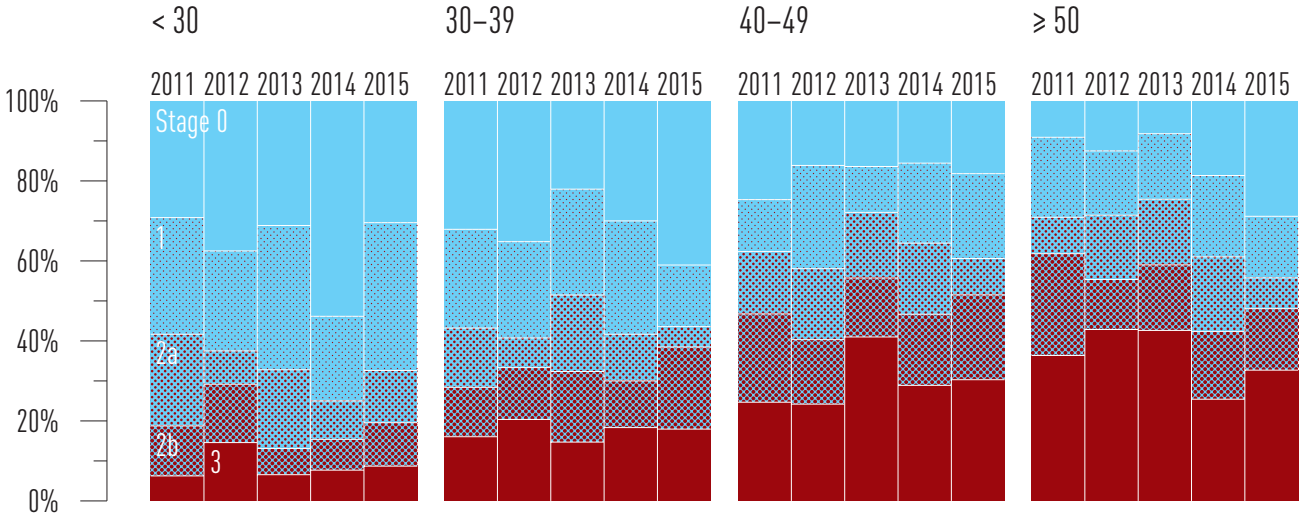
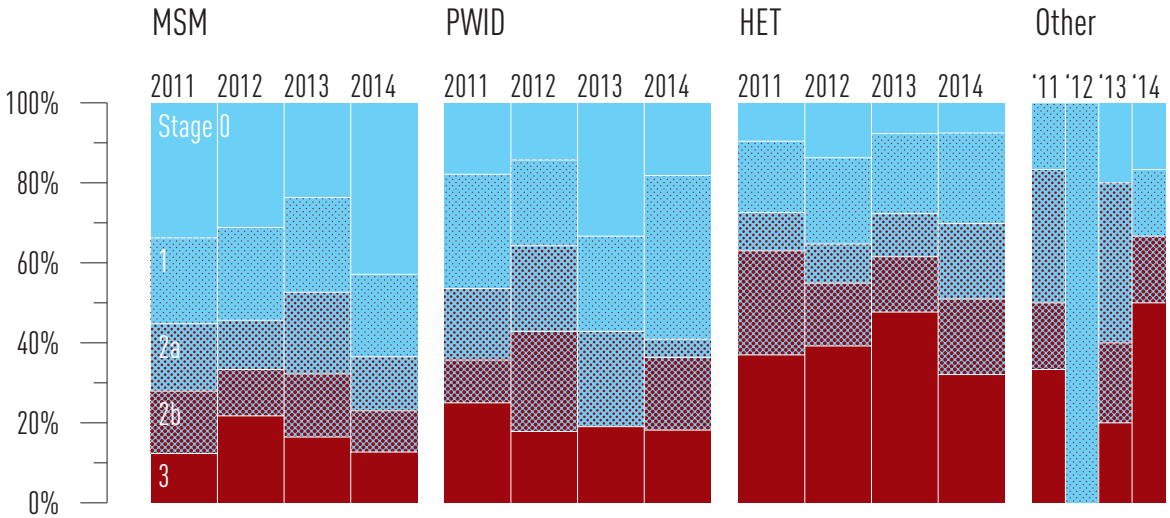


Figure 4.4 Stage of HIV Infection at Diagnosis by Exposure Category for BC, 2011–2014 [5,6]



	< 30 years					*30–39 years*					*40–49 years*					*≥ 50 years*					*MSM*				*PWID*				*Heterosexual*				*Other*				*NIR/Unknown*			
	2011	12	13	14	15	11	12	13	14	15	11	12	13	14	15	11	12	13	14	15	11	12	13	14	11	12	13	14	11	12	13	14	11	12	13	14	11	12	13	14
Stage 0	14	18	19	28	14	26	19	15	18	16	19	10	10	7	6	5	7	5	11	15	52	43	36	54	5	4	7	4	7	7	5	4	0	0	1	1	0	0	0	1
Stage 1	14	12	22	11	17	20	13	18	17	6	10	16	7	9	7	11	9	10	12	8	33	32	36	26	8	6	5	9	13	11	13	12	1	1	0	1	0	0	3	1
Stage 2a	11	4	12	5	6	12	4	13	7	2	12	11	10	8	3	5	9	10	11	4	26	17	31	17	5	6	5	1	7	5	7	10	2	0	2	0	0	0	0	3
Stage 2b	6	7	4	4	5	10	7	12	7	8	17	10	9	8	7	14	7	10	10	8	24	16	24	13	3	7	0	4	19	8	9	10	1	0	1	1	0	0	1	1
Stage 3	3	7	4	4	4	13	11	10	11	7	19	15	25	13	10	20	24	26	15	17	19	30	25	16	7	5	4	4	27	20	31	17	2	0	1	3	0	2	4	3
Unknown	6	7	1	8	12	11	3	4	13	20	5	2	4	10	17	5	4	6	13	21	16	10	4	24	6	1	4	3	2	1	5	12	1	1	2	1	2	3	0	4
Total *(n=)*	54	55	62	60	58	92	57	72	73	59	82	64	65	55	50	60	60	67	72	73	170	148	156	150	34	29	25	25	75	52	70	65	7	2	7	7	2	5	8	13

5 *Data Source: BCCDC*

6 *MSM=men who have sex with men; PWID=people who inject drugs; HET=heterosexual. NIR=No identified risk/exposure.*

HIV Cascade of Care

Indicator 5. HIV Cascade of Care

The success of seek, test, treat and retain (STTR) strategies like STOP is reliant on early diagnosis of HIV, linking newly diagnosed HIV-positive persons with ongoing care, retaining persons in HIV-care; initiating ART based on best evidenced practices and maintaining optimal ART adherence to ensure a suppressed viral load. These stages of HIV-care can be summarized as: 1. HIV diagnosis, 2. Linked to HIV care, 3. Retained in HIV care, 4. On ART, 5. Adherent to ART and 6. Achieving a suppressed VL; collectively, they are referred to as the cascade of care. Attrition between any of these stages of HIV-care means a reduction in the potential of ART as a benefit to the HIV-positive individual and as an HIV transmission prevention method on a population level. Thus, when interpreting trends in the cascade of care, we strive to see increases along each step of the cascade of care (i.e. reduced attrition) with the ultimate goal being 100% within each stage of the cascade. Monitoring the Cascade of Care provides a picture as to where deficiencies lie in the delivery and uptake of HIV-care. In this section we present the cascade of care for the period 2015 Q2–2016 Q1 in BC overall and stratified by sex and age for each Health Authority.

Figure 5.1 Estimated Cascade of Care for BC, Year Ending 2016 Q1 [7]

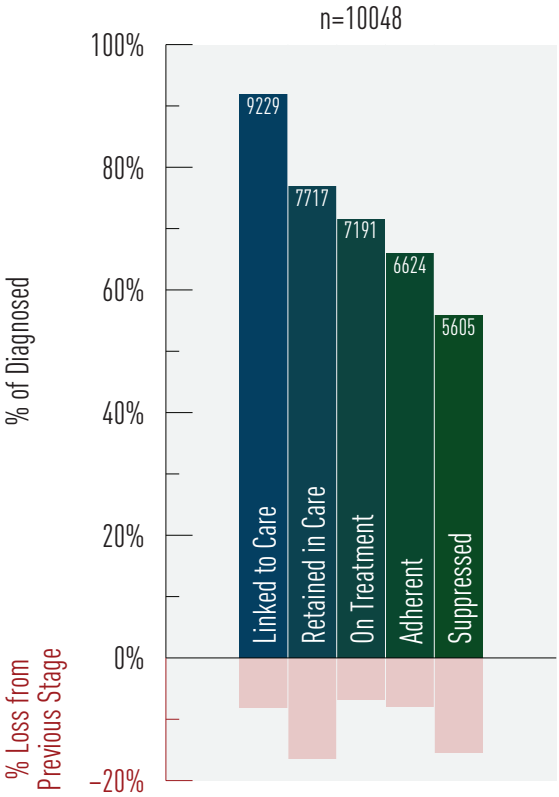
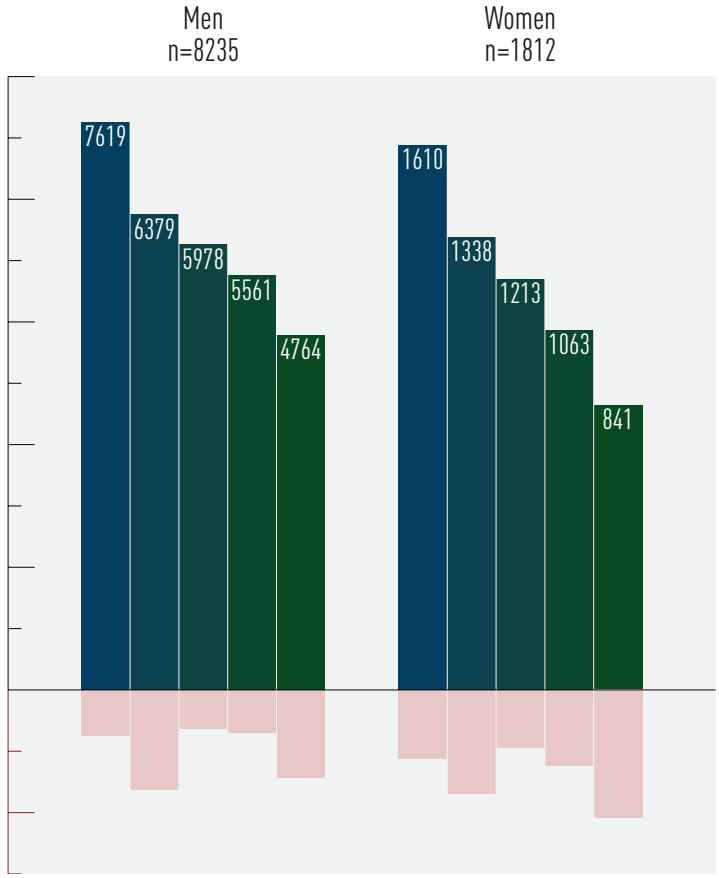


Figure 5.2 Estimated Cascade of Care for British Columbia by Gender, Year Ending 2016 Q1 [7]

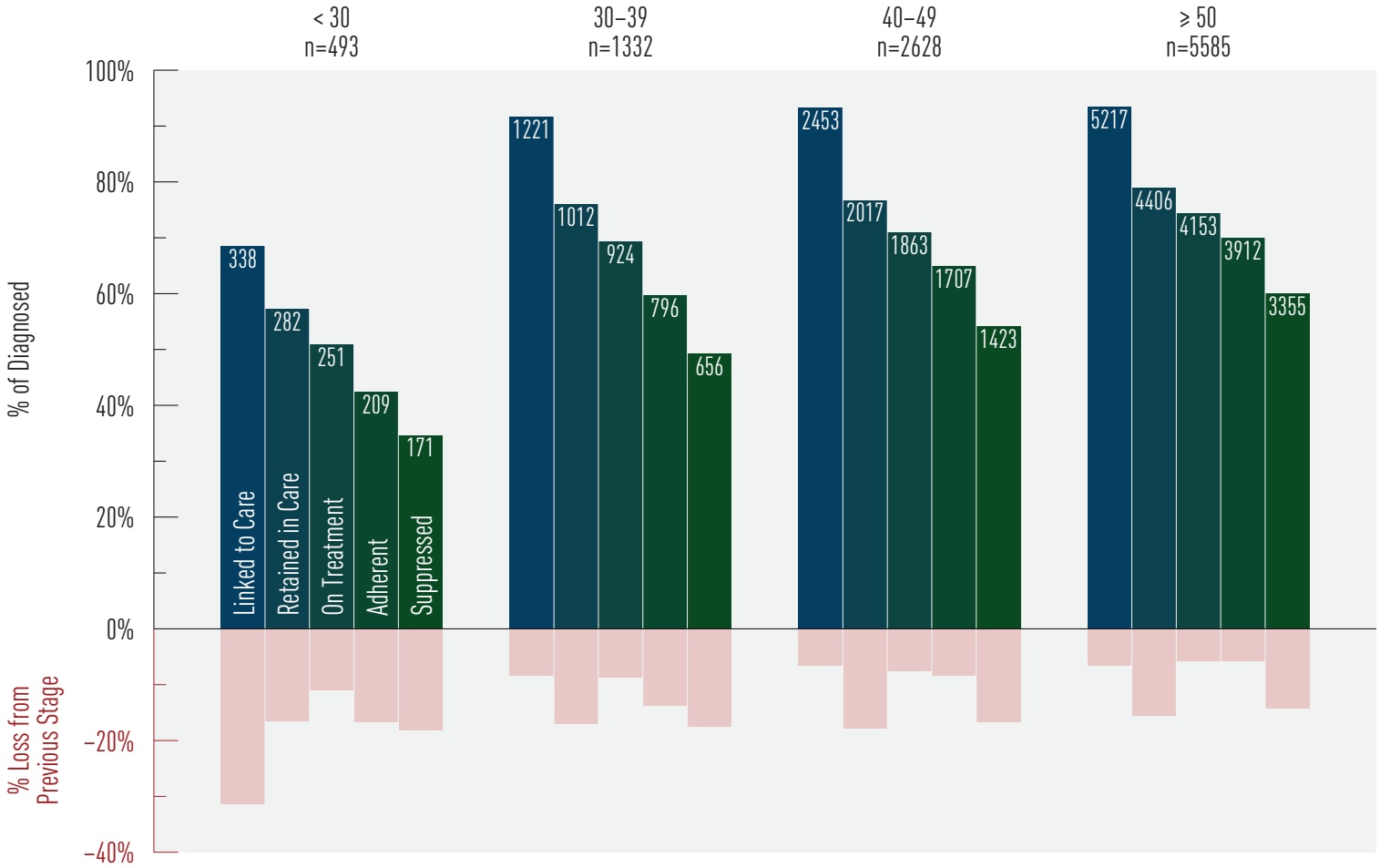


7 *Data is for the period 2015 Q2–2016 Q1.*
Data Sources:
i British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).
ii Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).

Limitations: HA assignment is based on the most recent HA of residence of the patient, if not available of the HIV-care provider. If the most recent HA of residence is not updated then the designated HA may be incorrect.

NB: Transgender have been assigned to their biological sex.

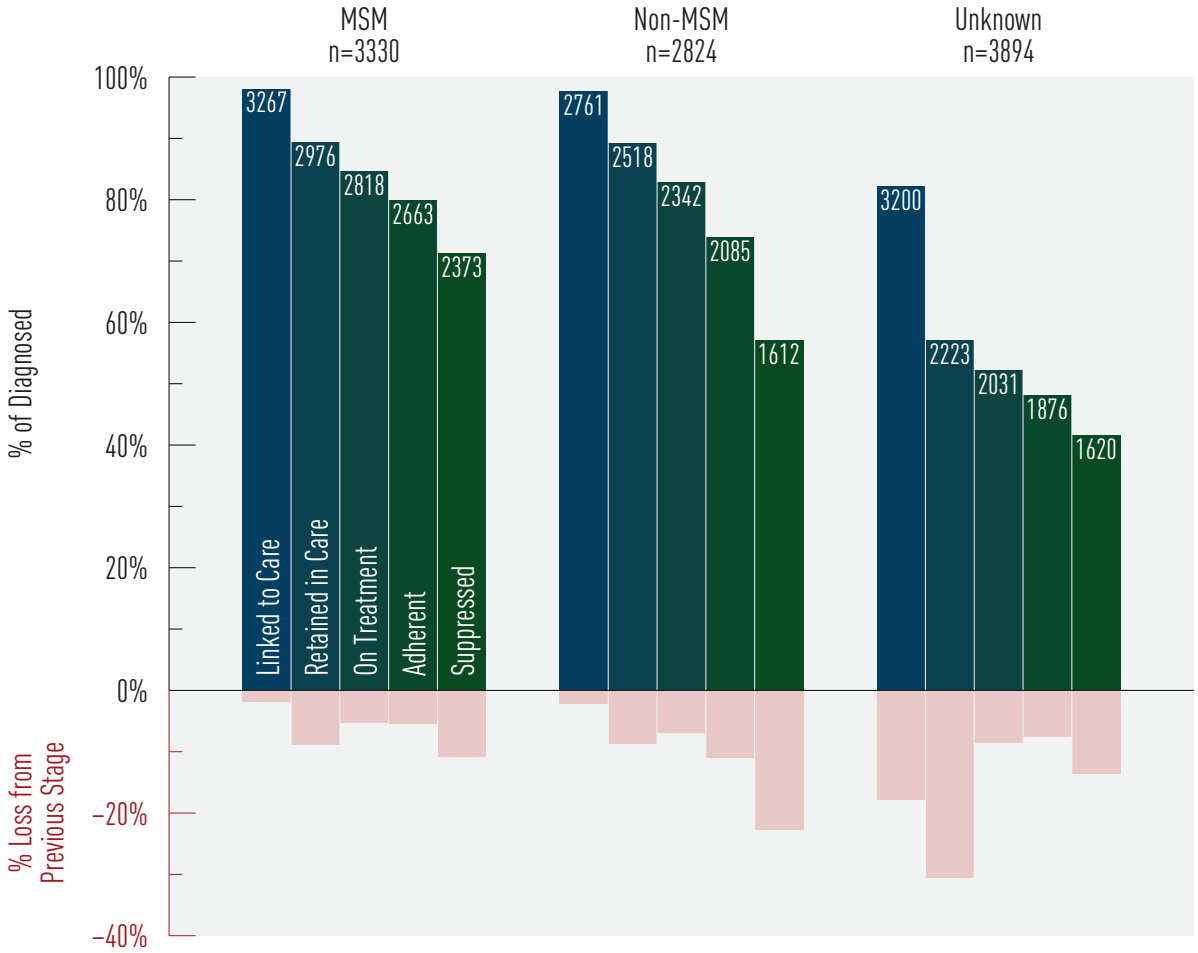
Figure 5.3 Estimated Cascade of Care for British Columbia by Age Category, Year Ending 2016 Q1 [8]



8 *Data is for the period 2015 Q2–2016 Q1.*
Data Sources:
i British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).
ii Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).

Limitations: HA assignment is based on the most recent HA of residence of the patient, if not available of the HIV-care provider. If the most recent HA of residence is not updated then the designated HA may be incorrect.

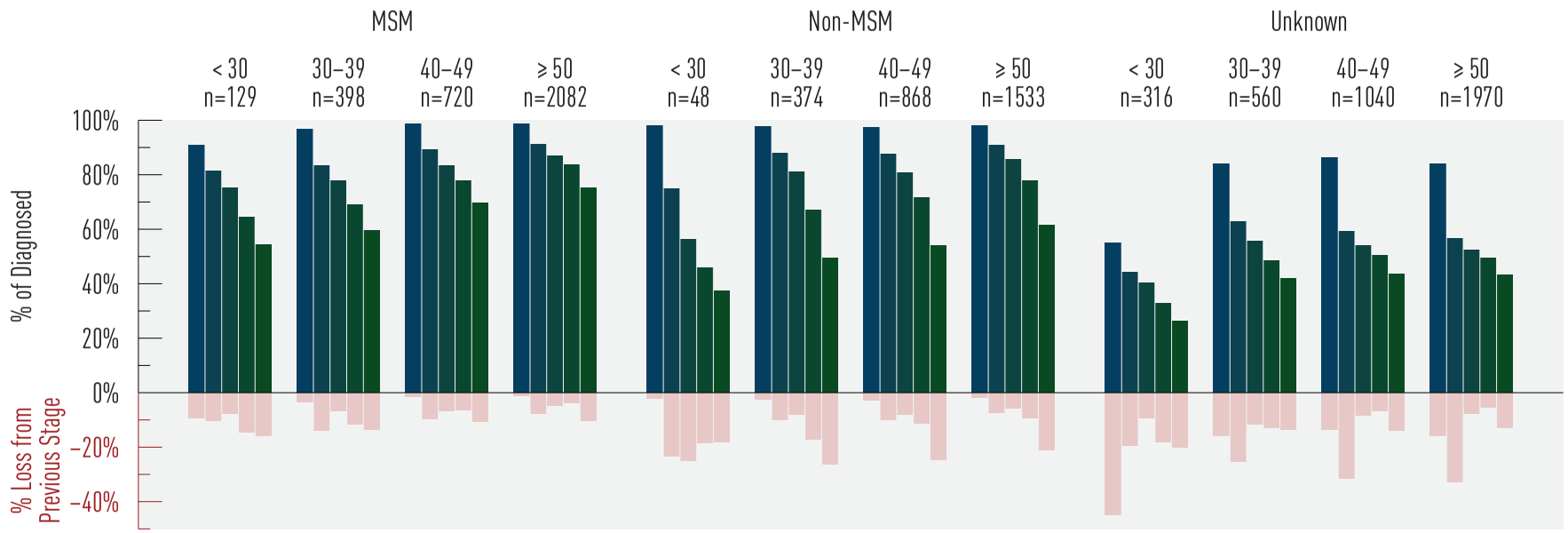
Figure 5.4 Estimated Cascade of Care for British Columbia by MSM Status, Year Ending 2016 Q1 [9]



9 *Data is for the period 2015 Q2–2016 Q1.*
Data Sources:
i British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).
ii Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).

Limitations: HA assignment is based on the most recent HA of residence of the patient, if not available of the HIV-care provider. If the most recent HA of residence is not updated then the designated HA may be incorrect.

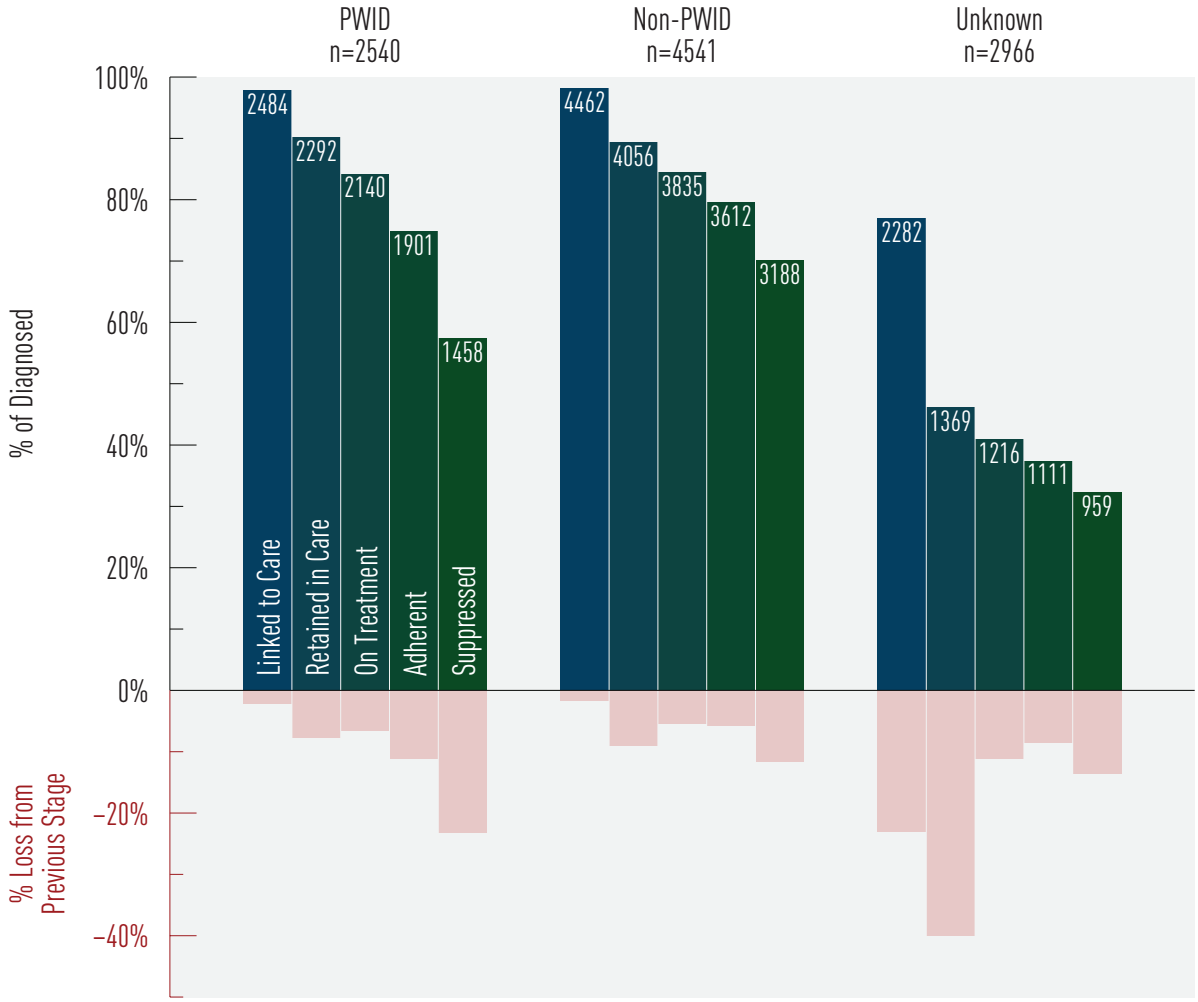
Figure 5.5 Estimated Cascade of Care for British Columbia by Age Category and MSM Status, Year Ending 2016 Q1 [9]



9 *Data is for the period 2015 Q2–2016 Q1.*
Data Sources:
i British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).
ii Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).

Limitations: HA assignment is based on the most recent HA of residence of the patient, if not available of the HIV-care provider. If the most recent HA of residence is not updated then the designated HA may be incorrect.

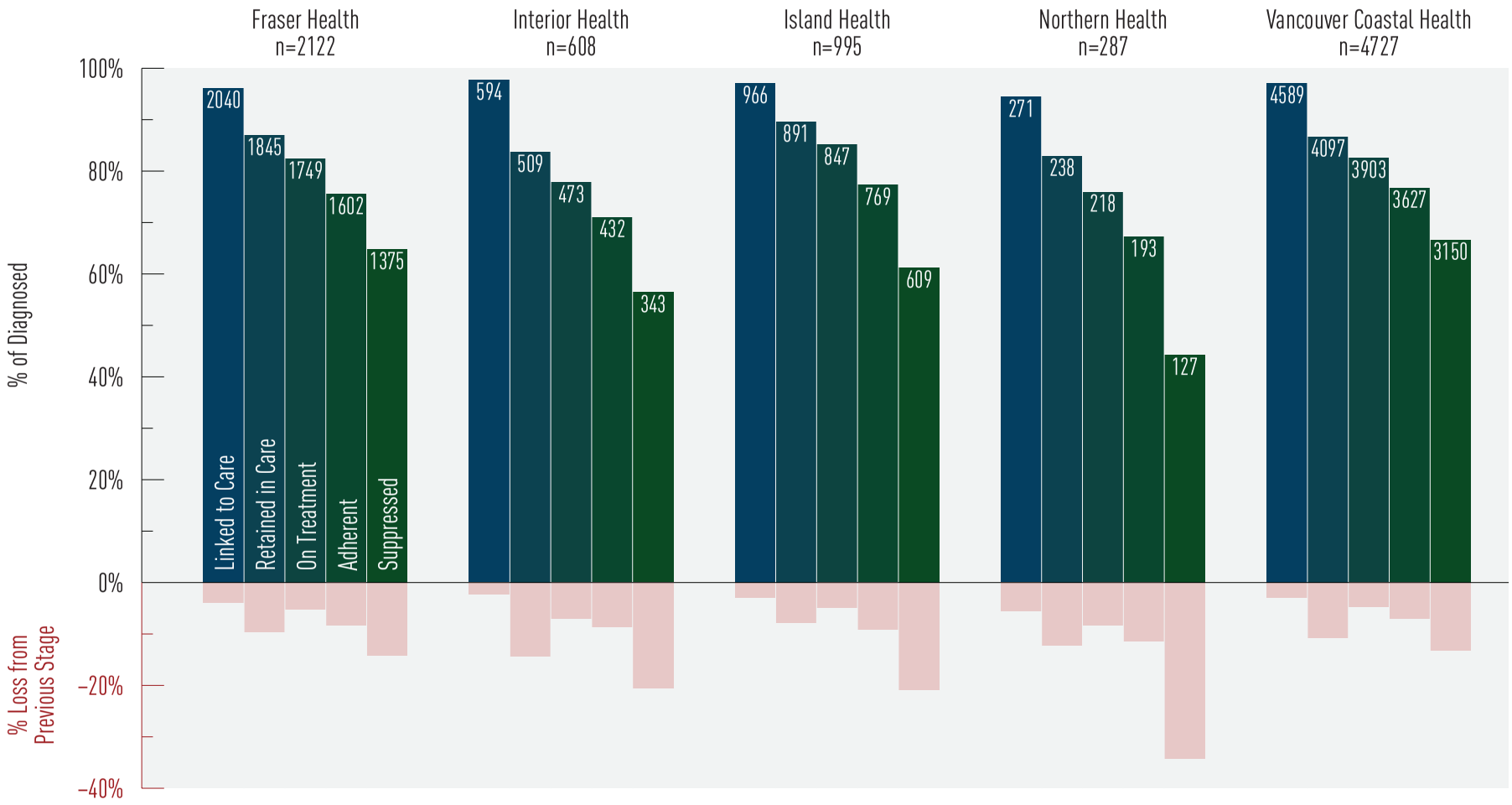
Figure 5.6 Estimated Cascade of Care for British Columbia by PWID Status, Year Ending 2016 Q1 [9]



9 *Data is for the period 2015 Q2–2016 Q1.*
Data Sources:
i British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).
ii Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).

Limitations: HA assignment is based on the most recent HA of residence of the patient, if not available of the HIV-care provider. If the most recent HA of residence is not updated then the designated HA may be incorrect.

Figure 5.7 Estimated Cascade of Care for British Columbia by Health Authority, Year Ending 2016 Q1 [9]



9 *Data is for the period 2015 Q2–2016 Q1.*
Data Sources:
i British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).
ii Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).

Limitations: HA assignment is based on the most recent HA of residence of the patient, if not available of the HIV-care provider. If the most recent HA of residence is not updated then the designated HA may be incorrect.

Programmatic Compliance Score

Indicator 6. Programmatic Compliance Score (PCS)

The Programmatic Compliance Score (PCS) is a summary measure of risk of future death, immunologic failure and virologic failure from all causes for people who are starting ART for the first time. It is composed of patient- and physician-driven effects. PCS scores range from 0–6 with higher scores indicative of poorer health outcomes and greater risk of death. Table 1 provides mortality, immunologic failure and virologic failure probabilities for given PCS scores. We interpret an individual with a PCS≥4 as being 22 times more likely to die, almost 10 times more likely to have immunologic failure and nearly 4 times as likely to demonstrate virologic failure compared to those individuals with a PCS score of 0. A detailed description of how the PCS score is calculated and its validation can be found in the technical report. In short, PCS scores are calculated by summing the results (yes=1, no=0) of six un-weighted non-performance indicators based on IAS–USA treatment guidelines:

1. having <3 CD4 cell count tests in the first year after starting antiretroviral therapy (ART);
2. having <3 plasma viral load (VL) tests in the first year after starting ART;
3. not having drug resistance testing done prior to starting ART;
4. starting on a non-recommended ART regimen;
5. starting therapy with CD4<200 cells/µL; and
6. not achieving viral suppression within 9 months since ART initiation.

In this section we provide PCS scores and their components over time for the province of BC. A decline to 0%, **(i.e., all individuals having a score of 0)** is the eventual goal.

Table 2. Probability of Mortality, Immunologic Failure and Virologic Failure based on the Programmatic Compliance Score

Programmatic Compliance Score	Mortality Risk Ratio (95% Confidence Interval)	Immunologic Failure Risk Ratio (95% CI)	Virologic Failure Risk Ratio (95% CI)
0 (Best score)	1 (–)	1 (–)	1 (–)
1	3.81 (1.73–8.42)	1.39 (1.04–1.85)	1.32 (1.05–1.67)
2	7.97 (3.70–17.18)	2.17 (1.54–3.04)	1.86 (1.46–2.38)
3	11.51 (5.28–25.08)	2.93 (1.89–4.54)	2.98 (2.16–4.11)
4 or more (Worst score)	22.37 (10.46–47.84)	9.71 (5.72–16.47)	3.80 (2.52–5.73)

Reference: Lima VD, Le A, Nosyk B, Barrios R, Yip B, et al. (2012) Development and Validation of a Composite Programmatic Assessment Tool for HIV Therapy. PLoS ONE 7(11): e47859. doi:10.1371/journal.pone.0047859

Figure 6.1 PCS Components for BC, 2014 Q2–2016 Q1 [10]

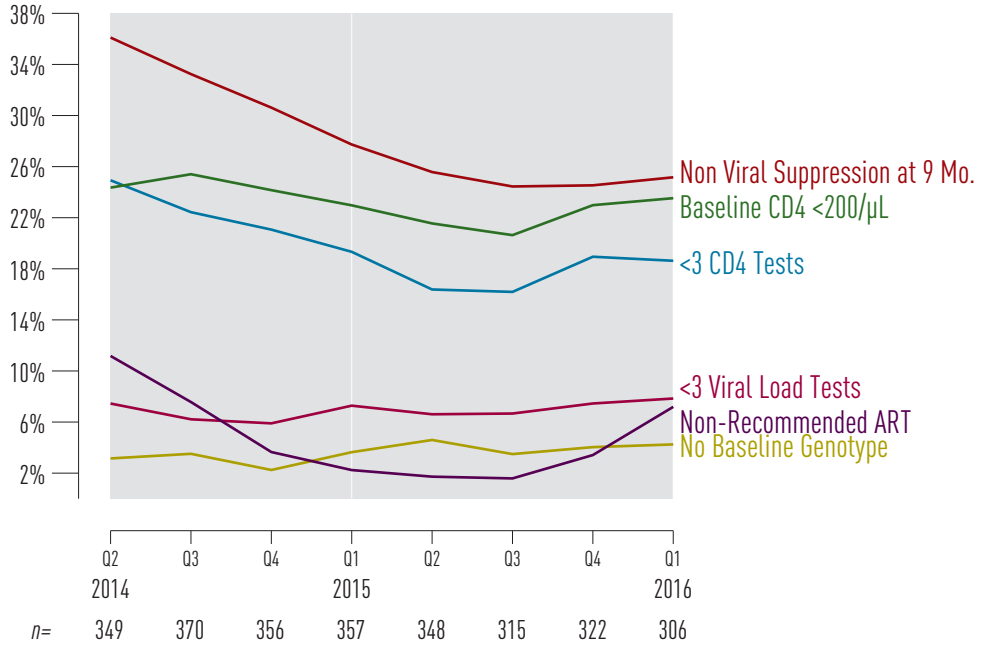
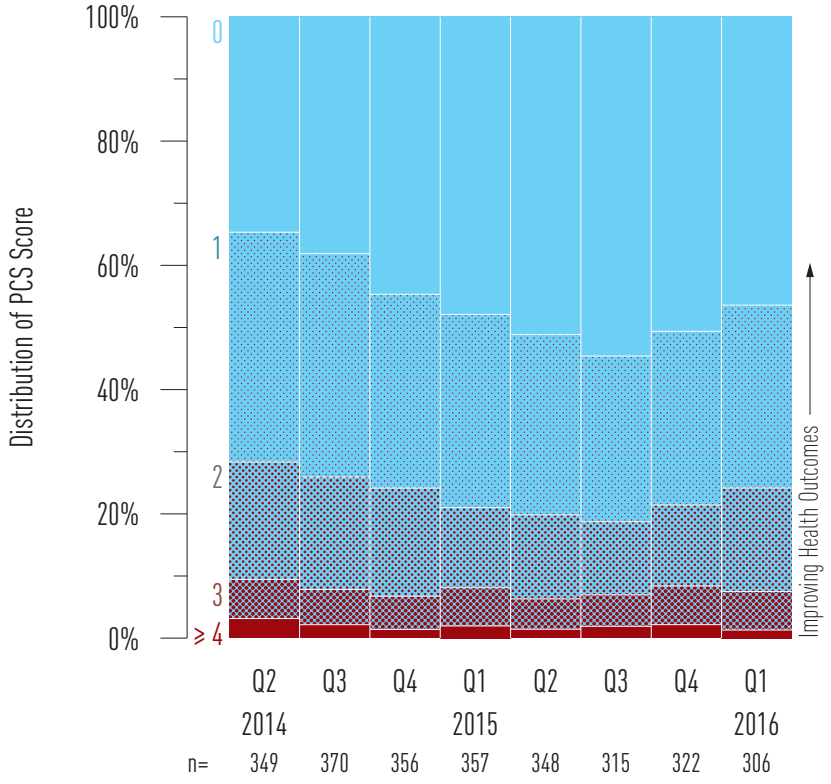


Figure 6.2 Historical Trends for PCS Score for BC, 2014 Q2–2016 Q1 [10,11]



10 *Data Source: British Columbia Centre for Excellence Drug Treatment Program (DTP) Database.*
Limitations: CD4 cell count capture is approximately 80%.

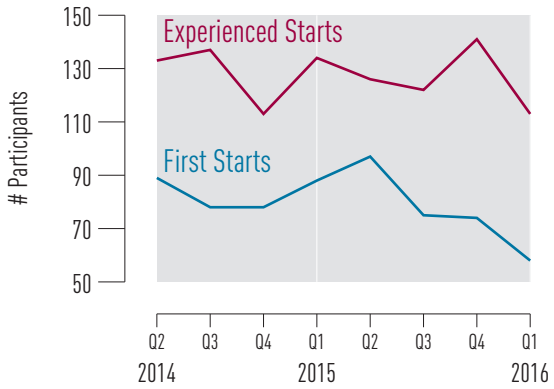
11 *Each quarter's data is calculated as the sum of the 4 quarters leading up to it. e.g. 2013 Q1 is calculated from 2012 Q2 – 2013 Q1.*
NB: A score of 0 is the best score and a score of 4 or more is the worst score.

Antiretroviral Uptake

In this section we present trends in ART uptake, the number and proportion of new HIV treatment initiations and the number of active and inactive DTP participants. Trends in ART uptake should be interpreted under the consideration of changing BC HIV treatment guidelines. BC HIV treatment guidelines are updated regularly by the BC-CFE Therapeutic Guidelines Committee and reflect those of the International AIDS Society. Most recent changes were made in 2012 and HIV treatment is now recommended for all HIV-positive adults regardless of CD4 cell count; as evidence demonstrates that early initiation of HIV treatment maximizes both the individual's health outcomes as well as the potential of ART as a form of HIV transmission prevention at a population level. As such, trends in the number and proportion of persons on ART and new ART starts (in both naïve and experienced persons) are expected to increase over time at higher CD4 cell counts.

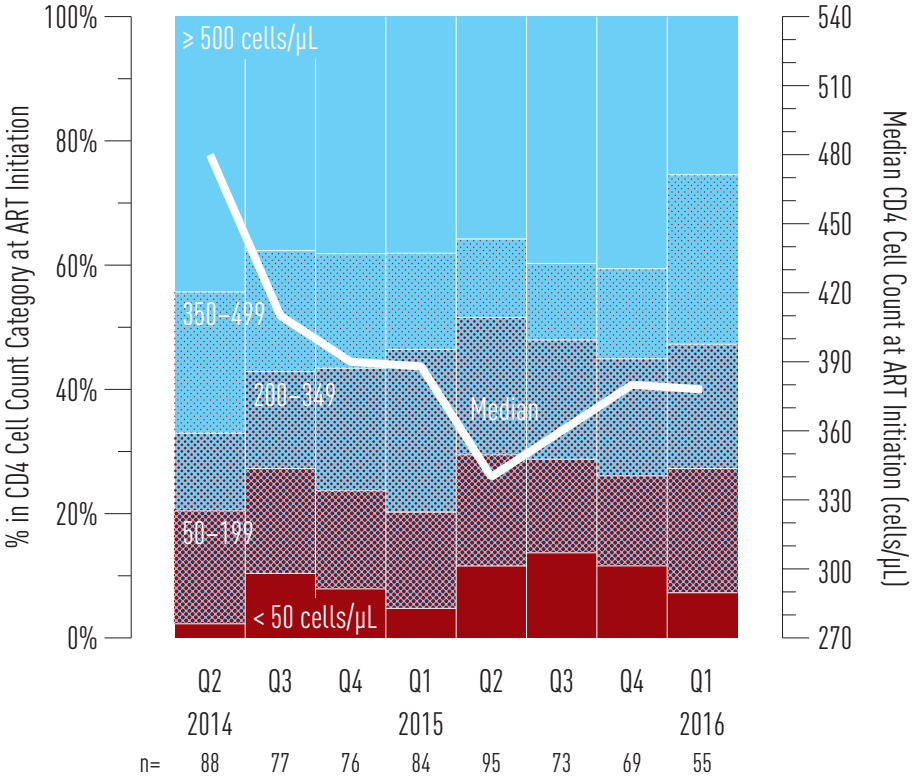
Indicator 7. New Antiretroviral Therapy Starts in BC

Figure 7 BC-CfE Drug Treatment Program Enrollment: New ART Participants in BC, 2014 Q2–2016 Q1 [12]



Indicator 8. CD4 Cell Count at ART Initiation

Figure 8 CD4 Cell Count at ART Initiation of ART-Naïve DTP Participants in BC, 2014 Q2–2016 Q1 [13]



12 *Data Source: Drug Treatment Program Database Limitation: DTP participants are designated to an HA based on most current residence provided by the participant.*

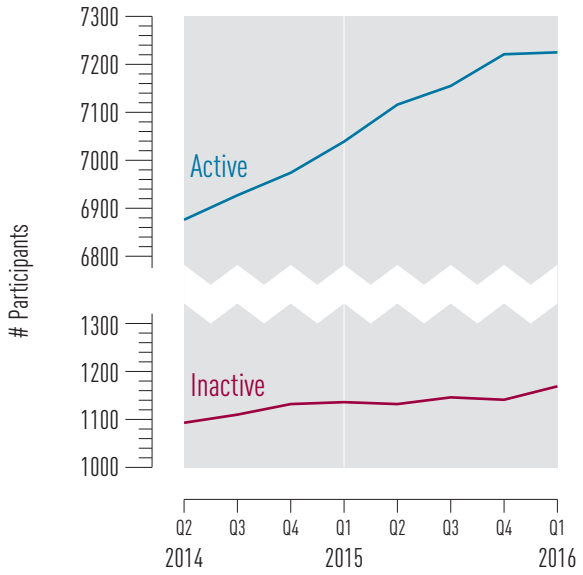
13 *Data Source: Drug Treatment Program Database Limitations: CD4 cell count data is approximately 80% complete.*

Indicator 9. Active and Inactive DTP Participants

Table 3. Distribution of People on ART for BC, 2016 Q1 [14]

		Fraser	Interior	Island	Northern	Vancouver Coastal	Total BC
Age	< 30	85	22	27	10	134	278
	30–39	262	55	101	45	534	999
	40–49	527	105	213	64	1050	1959
	≥ 50	895	291	502	97	2224	4009
Gender	Male	1366	375	683	136	3470	6031
	Female	403	98	160	80	472	1214
Exposure	MSM	563	143	235	31	1889	2862
	PWID	462	149	273	113	1118	2116
Total		1769	473	843	216	3942	7245

Figure 9 Active and Inactive DTP Participants for BC, 2014 Q2–2016 Q1 [15]



14 *Data Source: Drug Treatment Program Database*
Limitation: DTP participants are designated to an HA based on most current residence provided by the participant.

Definition:
'On antiretroviral therapy' defined as being on treatment in the current quarter

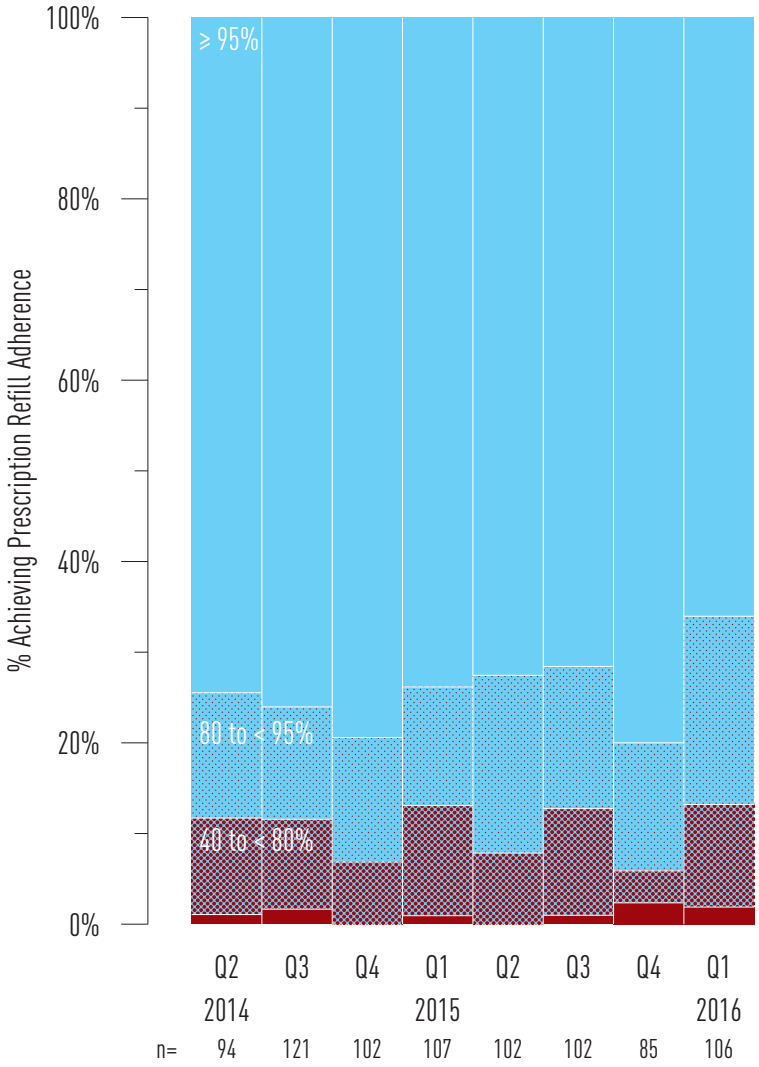
15 *Active DTP participants: An individual who has had medication prescribed at least once in the preceding quarter.*
Inactive DTP participants: Persons no longer prescribed drugs through the HIV/AIDS Drug Treatment Program in the last quarter.

Antiretroviral Adherence Level

In this section we present trends in prescription refill adherence levels for individuals in their first year of treatment. Given that the benefits of ART are compromised in the presence of imperfect ART adherence, we expect to see the proportion of persons on ART achieving near perfect adherence (ie. ≥95%) to increase with time. Furthermore, it is important that trends in the proportion of ART users achieving prescription refill adherence of ≥95% keep pace with new ART starts and increase among those continuing on ART.

Indicator 10. Antiretroviral Adherence

Figure 10 Distribution of Individuals by Adherence Level in 1st Year of Therapy, Based on Pharmacy Refill Compliance for BC, 2014 Q2–2016 Q1 [16]



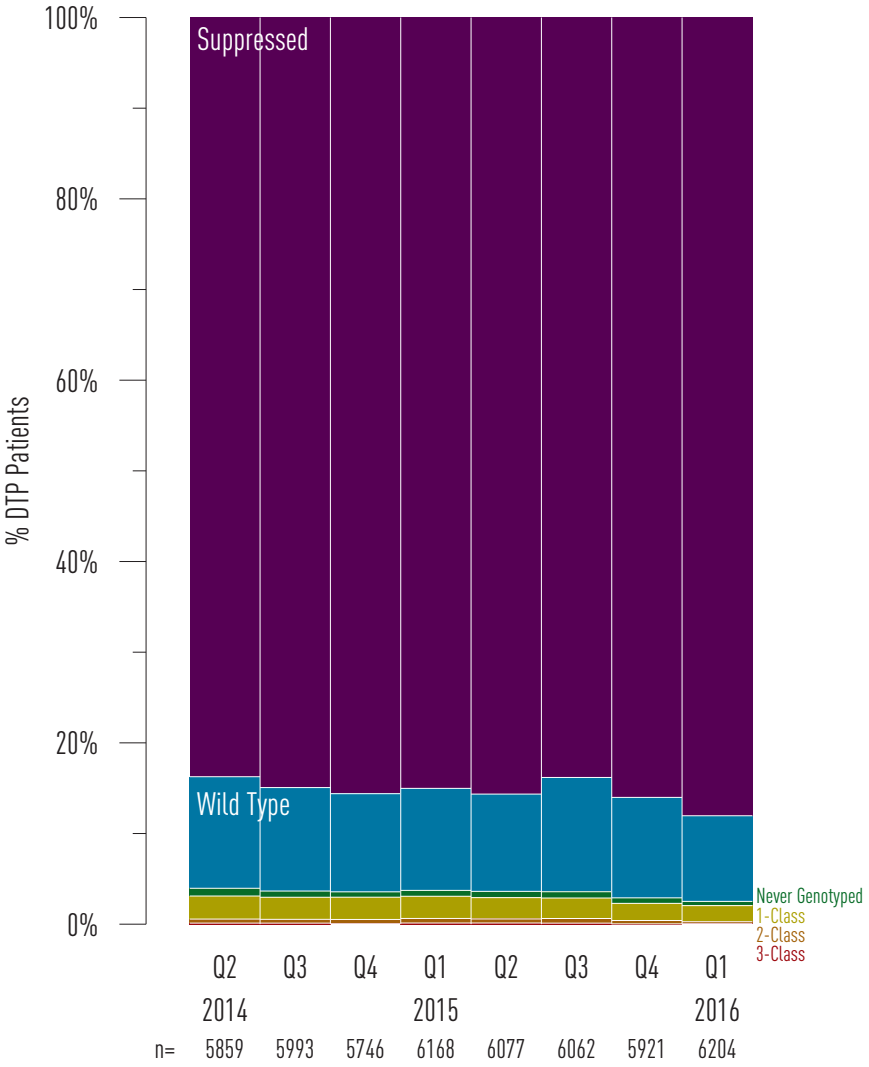
16 *Data Source: Drug Treatment Program Database*
Limitation: Prescription refill adherence is used as a proxy for patient adherence.

Resistance Testing and Results

Indicator 11. Resistance Testing and Results

In this section, we present trends in cumulative resistance testing by resistance category: Suppressed (where a DTP participant's viral load is too low to be genotyped); Wild Type (where no HIV treatment resistances were discovered), Never Genotyped, and Resistances to one, two, three, or four HIV treatment classes. Resistance testing prior to ART initiation is recommended in the BC HIV treatment primary care guidelines. Thus, it is expected that trends over time should find all persons enrolled in the DTP to have been genotyped. Trends over time should also show an increase in the proportion of DTP participants achieving a suppressed status and an increase in resistance testing should not lead to an increase in the number of ART resistances occurring.

Figure 11 Cumulative Resistance Testing Results by Resistance Category for BC, 2014 Q2–2016 Q1 [17]



17 *Data Source: Drug Treatment Program Database*

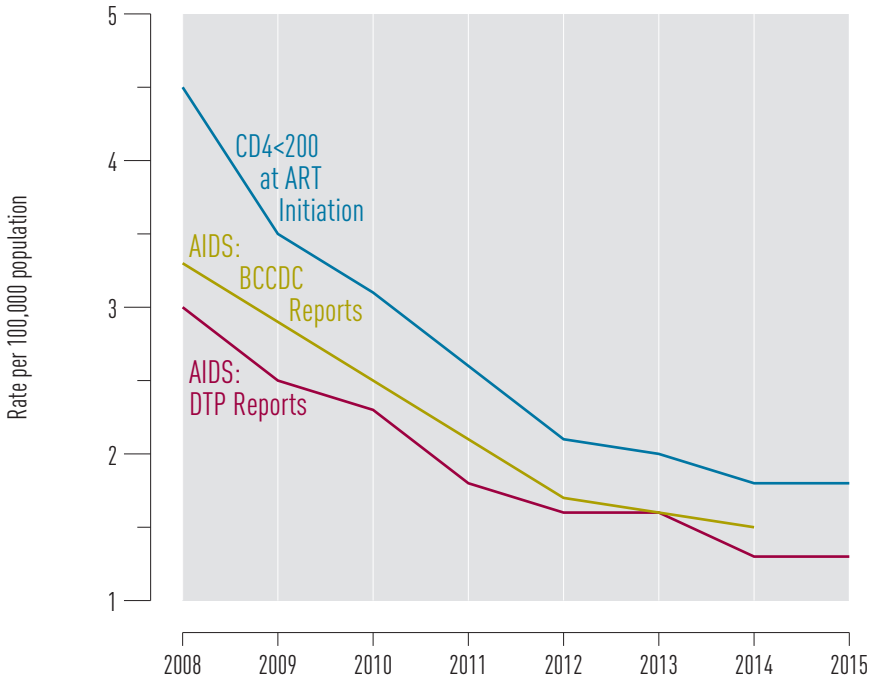
Limitation: DTP participants are designated to a HA based on most current residence provided by the participant.

AIDS-Defining Illness

Indicator 12. AIDS-Defining Illness

Improvements in ART and the expansion of ART province-wide has led to very low numbers of recorded AIDS cases across BC. However, interpreting trends in AIDS cases is challenging as AIDS reporting is passive in BC and it is likely that they are under-reported across all Health Authorities. In addition to under-reporting, methods of reporting AIDS cases are inconsistent across HA's and do not truly reflect the current reality of new AIDS diagnoses. Efforts will need to be made to improve under- and inconsistent reporting of AIDS cases across all HA's. The table below shows AIDS cases using three definitions. First, AIDS cases were defined as the number of physician-reported AIDS defining illness (ADI) in a given year. AIDS case reporting is a passive process and physicians can voluntarily report AIDS cases to the BCCDC or DTP. As such, we have plotted both BCCDC reports and DTP reported AIDS cases. We also show the proportion of persons initiating ART with a CD4<200 cells/μL.

Figure 12 AIDS Case Rate and Reports for BC [18]



		2008	2009	2010	2011	2012	2013	2014	2015
CD4<200 at ART initiation	CASES	194	155	138	115	96	90	84	86
	PER 100K	4.5	3.5	3.1	2.6	2.1	2.0	1.8	1.8
AIDS: DTP Reports	CASES	130	110	104	82	71	74	62	59
	PER 100K	3.0	2.5	2.3	1.8	1.6	1.6	1.3	1.3
AIDS: BCCDC Reports	CASES	143	127	113	95	76	72	70	–
	PER 100K	3.3	2.9	2.5	2.1	1.7	1.6	1.5	–

18 *Data Source: DTP AIDS cases are obtained from the Drug Treatment Program Database; BCCDC AIDS cases are obtained from the BCCDC; CD4<200 at ART initiation data came from the DTP database.*

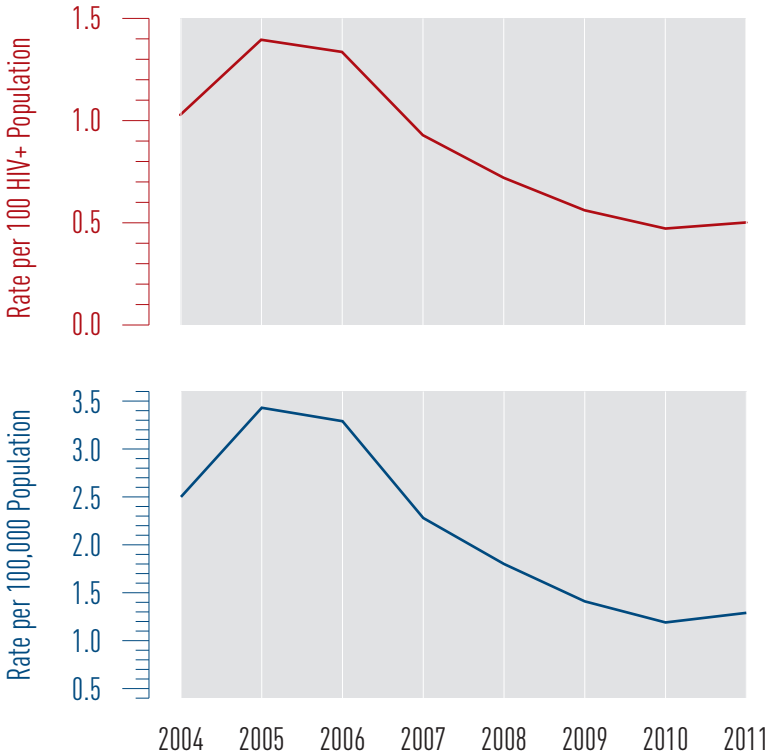
Limitation: AIDS case reporting was investigated using 3 definitions: First, using AIDS cases reported in AIDS case report forms from the DTP; Second, using AIDS cases reported via the BCCDC and third, using a CD4 cell count of <200 cells/μL at time of ART initiation using DTP data. AIDS case reporting is passive in BC, thus; AIDS case reporting is not well captured. The DTP sends out AIDS reporting forms to physicians annually. The BCCDC uses DTP AIDS case reports as well as physician AIDS case reports made directly to the BCCDC. Interpreting AIDS case reports should be done with these limitations in mind. AIDS data is updated annually as very few AIDS cases reports are reported in general and trends would be difficult to notice if reported quarterly.

HIV-Related Mortality

Indicator 13. HIV-Related Mortality

Evidence indicates that individuals who initiate treatment with recommended ART in a timely fashion may live near normal lifespans. Excess mortality among HIV positive persons is, therefore, an important measure of HIV care with a goal of minimizing HIV-related mortality in British Columbia.

Figure 13 HIV-Related Deaths by Year for BC, 2004–2011 [19]



	2004	2005	2006	2007	2008	2009	2010	2011
HIV-Related Deaths	105	146	142	100	79	63	54	59
Per 100 HIV+ Population	1.03	1.40	1.34	0.93	0.72	0.56	0.47	0.50
Per 100,000 Population	2.50	3.43	3.29	2.28	1.80	1.41	1.19	1.29

19 *Data Source: BC Vital Statistics*

Limitation:

1. DTP participants are designated to an HA based on most current residence provided by the participant.

2. Mortality data is updated annually.

3. The most recent available data was used.

Appendices

Indicator 1: **Test Episodes (thousands)**		2011 Q2	Q3	Q4	2012 Q1	Q2	Q3	Q4	2013 Q1	Q2	Q3	Q4	2014 Q1	Q2	Q3	Q4	2015 Q1	Q2	Q3	Q4	2016 Q1
British Columbia		33.5	40.3	37.6	42.3	41.5	45.0	46.6	54.8	58.0	55.9	54.6	62.0	66.1	71.2	70.5	77.8	76.9	79.8	80.7	88.3
Gender	Female	14.7	15.9	16.6	18.9	18.9	20.8	21.5	25.7	27.5	26.5	25.6	28.7	31.2	33.8	33.7	37.5	37.4	38.7	38.7	42.3
	Male	16.2	17.7	18.0	20.8	20.1	21.6	22.7	26.2	27.9	26.5	26.2	30.0	31.6	33.8	33.7	37.2	36.7	38.3	39.1	43.3
	Other	0.6	0.6	0.5	0.4	0.3	0.4	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3
Age	< 30	11.8	13.1	13.0	14.0	13.5	14.8	14.7	15.7	16.7	16.8	16.3	17.4	17.6	19.2	18.9	19.7	19.9	21.8	21.8	22.2
	30–39	8.0	8.7	8.7	10.1	9.7	10.2	10.3	12.2	12.7	12.3	11.9	13.9	13.9	14.6	14.1	16.1	16.1	16.7	16.1	18.6
	40–49	5.5	5.8	6.0	6.9	6.8	6.9	7.6	9.0	9.3	8.7	8.5	9.7	10.1	10.5	10.5	11.6	11.4	11.7	11.8	13.2
	≥ 50	5.7	6.2	7.0	8.8	9.1	10.5	11.7	15.2	16.9	15.2	15.2	17.8	21.4	23.5	24.0	27.4	26.9	27.0	28.3	31.7
POC HIV Tests		2.1	6.1	2.5	2.3	2.1	2.3	2.2	2.6	2.4	2.7	2.6	3.0	3.0	3.3	2.9	2.8	2.6	2.5	2.6	2.3
Fraser Health		8.2	9.1	9.0	10.1	10.1	10.8	11.6	13.5	14.0	13.8	12.9	13.6	14.5	14.9	15.1	16.1	15.9	16.8	17.1	18.4
Female		3.9	4.3	4.3	4.7	4.9	5.3	5.7	6.6	6.8	6.8	6.1	6.5	6.9	7.2	7.4	7.6	7.6	8.1	8.1	8.8
Male		4.3	4.7	4.6	5.3	5.1	5.4	5.7	6.6	7.0	6.7	6.5	6.9	7.1	7.3	7.5	8.1	7.8	8.4	8.6	9.4
Interior Health		3.8	3.9	4.2	4.1	4.0	4.2	4.2	4.4	4.7	4.6	4.9	5.3	5.5	5.6	5.9	6.6	7.1	7.9	9.1	10.4
Female		2.0	2.0	2.1	2.1	2.0	2.1	2.0	2.1	2.3	2.2	2.4	2.6	2.6	2.7	2.8	3.2	3.5	3.9	4.5	5.1
Male		1.8	1.8	2.0	2.0	1.9	2.0	2.1	2.2	2.3	2.3	2.4	2.6	2.8	2.7	2.9	3.2	3.4	3.8	4.4	5.1
Island Health		3.5	3.6	3.5	4.0	3.7	3.8	4.0	4.2	4.5	4.3	4.3	4.9	4.8	4.8	4.9	5.9	6.0	6.4	6.6	7.1
Female		1.7	1.8	1.7	1.9	1.8	1.9	2.0	2.1	2.2	2.1	2.1	2.3	2.3	2.4	2.4	2.9	3.0	3.2	3.3	3.5
Male		1.7	1.8	1.7	2.0	1.8	1.8	1.8	2.0	2.1	2.0	1.9	2.2	2.1	2.1	2.1	2.6	2.6	2.8	2.9	3.1
Northern Health		1.8	1.9	1.9	2.3	2.2	2.2	2.3	2.7	2.7	2.6	2.6	3.1	3.0	2.9	3.0	3.7	3.2	3.2	3.2	3.7
Female		0.9	1.0	1.0	1.2	1.1	1.2	1.2	1.3	1.4	1.3	1.3	1.6	1.5	1.5	1.5	1.9	1.6	1.6	1.6	1.9
Male		0.8	0.8	0.8	1.1	1.0	1.0	1.1	1.2	1.2	1.1	1.2	1.4	1.3	1.3	1.4	1.6	1.4	1.4	1.4	1.6
Vancouver Coastal Health		16.2	21.9	19.1	21.8	21.4	24.0	24.6	30.1	32.1	30.7	29.9	35.0	38.4	43.0	41.6	45.5	44.8	45.4	44.6	48.7
Female		6.1	6.9	7.4	9.0	9.0	10.3	10.7	13.6	14.8	14.0	13.6	15.8	17.9	20.0	19.6	21.8	21.6	21.8	21.2	23.0
Male		7.6	8.6	8.8	10.5	10.3	11.4	11.9	14.3	15.3	14.4	14.3	16.8	18.3	20.4	19.9	21.8	21.4	21.9	21.7	24.1

Indicator 2: **Rate of HIV Testing per 100,000**

		2009	2010	2011	2012	2013	2014	2015
British Columbia		2624.9	2645.8	2714.2	3318.5	4194.5	4968.9	5738.4
Fraser Health		2251.2	2267.6	2331.6	2795.3	3310.9	3584.8	4004.4
Interior Health		2026.9	2072.7	2094.1	2178.4	2566.9	2986.8	4074.5
Island Health		1927.0	1919.6	1851.0	1980.4	2148.6	2333.2	2939.1
Northern Health		2290.7	2348.6	2431.8	2909.8	3336.5	3827.6	4347.2
Vancouver Coastal Health		4125.4	4140.5	4342.2	5828.4	8130.3	10326.7	11602.2
Gender	Female	2446.8	2455.1	2523.7	3197.0	4168.6	4942.2	5769.8
	Male	2694.3	2734.5	2808.7	3383.3	4180.2	4951.7	5656.1
Age	< 30	2795.1	2802.3	2854.8	3231.4	3686.7	4047.3	4542.6
	30–39	5088.9	5225.7	5252.5	6074.0	7205.8	8108.3	9019.6
	40–49	3027.5	3025.9	3123.2	3832.5	4933.5	5705.2	6512.3
	≥ 50	1240.3	1280.6	1395.3	2168.5	3303.0	4415.0	5355.6

Indicator 3: **New HIV Diagnoses**		2011 Q2	Q3	2012 Q4	Q1	Q2	Q3	2013 Q4	Q1	Q2	Q3	2014 Q4	Q1	Q2	Q3	2015 Q4	Q1	Q2	Q3	2016 Q4	Q1
British Columbia	By Client Residence	82	87	65	70	55	52	60	49	80	80	58	63	75	63	60	64	64	64	49	59
	By Provider Address	*82*	*87*	*65*	*70*	*55*	*52*	*60*	*49*	*80*	*80*	*58*	*63*	*75*	*63*	*60*	*64*	*64*	*64*	*48*	*59*
Gender	Female	19	11	7	9	10	5	5	6	12	8	5	13	9	13	9	10	6	12	10	10
	Male	63	76	58	61	45	47	55	43	68	72	53	49	65	50	51	54	58	51	39	48
Age	< 30	18	17	18	18	14	9	18	9	18	23	15	17	15	13	18	14	15	20	13	20
	30–39	30	30	13	16	17	11	10	16	25	18	11	17	21	25	15	15	17	17	9	18
	40–49	22	22	19	20	11	19	19	12	14	21	20	14	14	7	13	11	20	10	11	12
	≥ 50	12	18	15	16	13	13	13	12	23	18	12	15	25	18	14	24	12	17	16	9
Exposure	MSM	43	56	38	42	34	37	36	28	46	45	38	35	46	34	36	36	37	32	–	–
	PWID	11	12	3	14	7	2	6	4	7	5	9	10	5	3	7	3	3	5	–	–
	HET	23	19	21	14	12	11	15	16	21	24	9	16	19	20	10	17	14	17	–	–
	Other	3	0	3	0	1	0	1	0	2	5	0	0	1	4	2	2	0	2	–	–
	NIR/Unknown	2	0	0	0	1	2	2	1	4	1	2	2	4	2	5	6	10	8	–	–
Fraser Health	By Client Residence	18	15	9	11	10	10	14	8	14	23	19	15	11	16	16	18	19	15	12	18
	By Provider Address	*20*	*9*	*8*	*10*	*5*	*7*	*8*	*9*	*8*	*14*	*15*	*11*	*10*	*12*	*13*	*11*	*12*	*15*	*13*	*16*
Interior Health	By Client Residence	4	3	3	5	5	0	2	1	4	4	4	3	4	4	6	5	1	6	4	8
	By Provider Address	*3*	*2*	*3*	*5*	*5*	*0*	*2*	*1*	*5*	*4*	*4*	*3*	*2*	*4*	*5*	*5*	*1*	*6*	*5*	*8*
Island Health	By Client Residence	2	7	7	6	3	5	12	4	9	10	7	6	4	7	8	3	7	8	6	7
	By Provider Address	*3*	*6*	*6*	*3*	*3*	*5*	*12*	*5*	*9*	*10*	*7*	*6*	*4*	*8*	*8*	*3*	*7*	*6*	*5*	*7*
Northern Health	By Client Residence	10	5	5	5	4	3	0	3	8	3	3	2	5	4	2	1	2	2	1	2
	By Provider Address	*9*	*5*	*6*	*5*	*4*	*3*	*0*	*3*	*8*	*3*	*3*	*2*	*5*	*3*	*2*	*1*	*2*	*2*	*1*	*3*
Vancouver Coastal Health	By Client Residence	48	57	41	43	33	33	32	31	45	40	25	37	49	32	28	37	35	33	25	24
	By Provider Address	*47*	*65*	*42*	*47*	*38*	*37*	*38*	*31*	*50*	*49*	*29*	*41*	*54*	*36*	*32*	*44*	*42*	*35*	*24*	*25*

Indicator 4: **Stage of HIV Infection at Baseline**

	British Columbia					Female					Male					< 30 years					30–39 years					40–49 years				
	'11	'12	'13	'14	'15	'11	'12	'13	'14	'15	'11	'12	'13	'14	'15	'11	'12	'13	'14	'15	'11	'12	'13	'14	'15	'11	'12	'13	'14	'15
Stage 0	64	54	49	64	51	3	6	3	5	9	61	48	45	59	42	14	18	19	28	14	26	19	15	18	16	19	10	10	7	6
Stage 1	55	50	57	49	38	9	6	9	11	5	45	43	48	38	33	14	12	22	11	17	20	13	18	17	6	10	16	7	9	7
Stage 2a	40	28	45	31	15	7	5	6	4	1	33	23	39	27	14	11	4	12	5	6	12	4	13	7	2	12	11	10	8	3
Stage 2b	47	31	35	29	28	10	6	4	5	3	37	25	31	23	24	6	7	4	4	5	10	7	12	7	8	17	10	9	8	7
Stage 3	55	57	65	43	38	10	5	8	9	4	45	52	57	34	34	3	7	4	4	4	13	11	10	11	7	19	15	25	13	10
Unknown	27	16	15	44	70	4	1	1	11	17	22	15	14	33	53	6	7	1	8	12	11	3	4	13	20	5	2	4	10	17
Total	288	236	266	260	240	43	29	31	45	39	243	206	234	214	200	54	55	62	60	58	92	57	72	73	59	82	64	65	55	50

	≥ 50 years					MSM				PWID				Heterosexual				Other Exposure				NIR/Unknown			
	'11	'12	'13	'14	'15	'11	'12	'13	'14	'11	'12	'13	'14	'11	'12	'13	'14	'11	'12	'13	'14	'11	'12	'13	'14
Stage 0	5	7	5	11	15	52	43	36	54	5	4	7	4	7	7	5	4	0	0	1	1	0	0	0	1
Stage 1	11	9	10	12	8	33	32	36	26	8	6	5	9	13	11	13	12	1	1	0	1	0	0	3	1
Stage 2a	5	9	10	11	4	26	17	31	17	5	6	5	1	7	5	7	10	2	0	2	0	0	0	0	3
Stage 2b	14	7	10	10	8	24	16	24	13	3	7	0	4	19	8	9	10	1	0	1	1	0	0	1	1
Stage 3	20	24	26	15	17	19	30	25	16	7	5	4	4	27	20	31	17	2	0	1	3	0	2	4	3
Unknown	5	4	6	13	21	16	10	4	24	6	1	4	3	2	1	5	12	1	1	2	1	2	3	0	4
Total	60	60	67	72	73	170	148	156	150	34	29	25	25	75	52	70	65	7	2	7	7	2	5	8	13

Indicator 5: **HIV Cascade of Care**			DIAGNOSED	LINKED	RETAINED	ON ART	ADHERENT	SUPPRESSED
British Columbia			10048	9229	7717	7191	6624	5605
Age Category	< 30		493	338	282	251	209	171
	30–39		1332	1221	1012	924	796	656
	40–49		2628	2453	2017	1863	1707	1423
	≥ 50		5585	5217	4406	4153	3912	3355
Age Category and MSM Status	MSM	< 30	129	117	105	97	83	70
		30–39	398	385	332	310	274	237
		40–49	720	710	642	600	561	502
		≥ 50	2082	2055	1898	1811	1745	1564
	Non-MSM	< 30	48	47	36	27	22	18
		30–39	374	365	329	303	251	185
		40–49	868	845	760	700	621	468
		≥ 50	1533	1504	1393	1312	1191	941
	Unknown	< 30	316	174	140	127	104	83
		30–39	560	471	352	311	271	234
		40–49	1040	898	615	563	525	453
		≥ 50	1970	1658	1116	1030	976	850
Gender	Male		8235	7619	6379	5978	5561	4764
	Female		1812	1610	1338	1213	1063	841
Injection Drug Use	PWID		2540	2484	2292	2140	1901	1458
	Non-PWID		4541	4462	4056	3835	3612	3188
	Unknown		2966	2282	1369	1216	1111	959
MSM Status	MSM		3330	3267	2976	2818	2663	2373
	Non-MSM		2824	2761	2518	2342	2085	1612
	Unknown		3894	3200	2223	2031	1876	1620
Health Authority	Fraser Health		2122	2040	1845	1749	1602	1375
	Interior Health		608	594	509	473	432	343
	Island Health		995	966	891	847	769	609
	Northern Health		287	271	238	218	193	127
	Vancouver Coastal Health		4727	4589	4097	3903	3627	3150

Indicator 6: **Programmatic Compliance Score (PCS)**

	2014 Q2	Q3	Q4	2015 Q1	Q2	Q3	Q4	2016 Q1
< 3 CD4 Tests	24.9%	22.4%	21.1%	19.3%	16.4%	16.2%	18.9%	18.6%
< 3 Viral Load Tests	7.4%	6.2%	5.9%	7.3%	6.6%	6.7%	7.5%	7.8%
No Baseline Genotype	3.2%	3.5%	2.2%	3.6%	4.6%	3.5%	4.0%	4.2%
Baseline CD4 < 200 cells/μL	24.4%	25.4%	24.2%	23.0%	21.6%	20.6%	23.0%	23.5%
Non-Recommended ART	11.2%	7.6%	3.7%	2.2%	1.7%	1.6%	3.4%	7.2%
Non Viral suppression at 9 Mo.	36.1%	33.2%	30.6%	27.7%	25.6%	24.4%	24.5%	25.2%
PCS Score: 0	121	141	159	171	178	172	163	142
PCS Score: 1	129	133	111	111	101	84	90	90
PCS Score: 2	66	67	62	46	47	37	42	51
PCS Score: 3	22	21	19	22	17	16	20	19
PCS Score: 4 or more	11	8	5	7	5	6	7	4
Total (n=)	**349**	**370**	**356**	**357**	**348**	**315**	**322**	**306**

Indicator 7: **New DTP ARV Participants**

	2014 Q2	Q3	Q4	2015 Q1	Q2	Q3	Q4	2016 Q1
First Starts	89	78	78	88	97	75	74	58
Experienced Starts	133	137	113	134	126	122	141	113

Indicator 8: **CD4 Cell Count at ART Initiation for ARV-Naïve DTP Participants**

CD4 ≥ 500	39	29	29	32	34	29	28	14
CD4 350–499	20	15	14	13	12	9	10	15
CD4 200–349	11	12	15	22	21	14	13	11
CD4 50–199	16	13	12	13	17	11	10	11
CD4 < 50	2	8	6	4	11	10	8	4
CD4 Median (cells/μL)	*480*	*410*	*390*	*388*	*340*	*360*	*380*	*378*
Total (n=)	**88**	**77**	**76**	**84**	**95**	**73**	**69**	**55**

Indicator 9: **Active and Inactive DTP Participants**

Active DTP Participants	6896	6947	6994	7059	7136	7175	7241	7245
Inactive DTP Participants	1113	1130	1152	1156	1152	1166	1161	1189

Indicator 10: **Antiretroviral Adherence**

≥ 95%	70	92	81	79	74	73	68	70
80% to < 95%	13	15	14	14	20	16	12	22
40% to < 80%	10	12	7	13	8	12	3	12
< 40%	1	2	0	1	0	1	2	2
Total (n=)	**94**	**121**	**102**	**107**	**102**	**102**	**85**	**106**

Indicator 11: **Resistance Testing and Results**

Suppressed	4906	5090	4919	5244	5205	5081	5093	5462
Wild Type	721	684	622	694	652	764	656	586
Never Genotyped	50	41	34	40	42	42	36	29
1-Class	149	146	141	151	143	137	112	110
2-Class	26	25	27	31	27	31	22	14
3-Class	7	7	3	8	8	7	2	3
Total (n=)	**5859**	**5993**	**5746**	**6168**	**6077**	**6062**	**5922**	**6204**

Indicator 12: **AIDS-Defining Illness**		2007	2008	2009	2010	2011	2012	2013	2014	2015
CD4 < 200 at ART initiation	Cases	224	194	155	138	115	96	90	84	86
	Rate per 100,000	*5.2*	*4.5*	*3.5*	*3.1*	*2.6*	*2.1*	*2.0*	*1.8*	*1.8*
AIDS Cases (DTP Reports)	Cases	135	130	110	104	82	71	74	62	59
	Rate per 100,000	*2.8*	*3.0*	*2.5*	*2.3*	*1.8*	*1.6*	*1.6*	*1.3*	*1.3*
AIDS Cases (BCCDC Reports)	Cases	143	143	127	113	95	76	72	70	–
	Rate per 100,000	*3.3*	*3.3*	*2.9*	*2.5*	*2.1*	*1.7*	*1.6*	*1.5*	–

Indicator 13: **HIV-Related Mortality**	2004	2005	2006	2007	2008	2009	2010	2011
British Columbia	105	146	142	100	79	63	54	59
Per 100 HIV+ Population	1.03	1.40	1.34	0.93	0.72	0.56	0.47	0.50
Per 100,000 Population	2.50	3.43	3.29	2.28	1.80	1.41	1.19	1.29