BRITISH COLUMBIA
CENTRE *for* EXCELLENCE
in HIV/AIDS

HIV MONITORING QUARTERLY REPORT

FOR BRITISH COLUMBIA

FIRST QUARTER 2015

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

First Nations Health Authority
Health through wellness

fraserhealth

Interior Health
For your whole life

island health

northern health
the northern way of caring

Providence HEALTH CARE
How you want to be treated.

Vancouver CoastalHealth
Promoting wellness. Ensuring care.

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

BRITISH COLUMBIA
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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. Ana Prado writes and compiles the monitoring report. Guillaume Colley, Dr. Viviane Lima and Nada Gataric perform analysis of Indicators 5–13. James Nakagawa is responsible for publishing and editing. This report was conceived and guided by Dr. Julio Montaner.

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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 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.

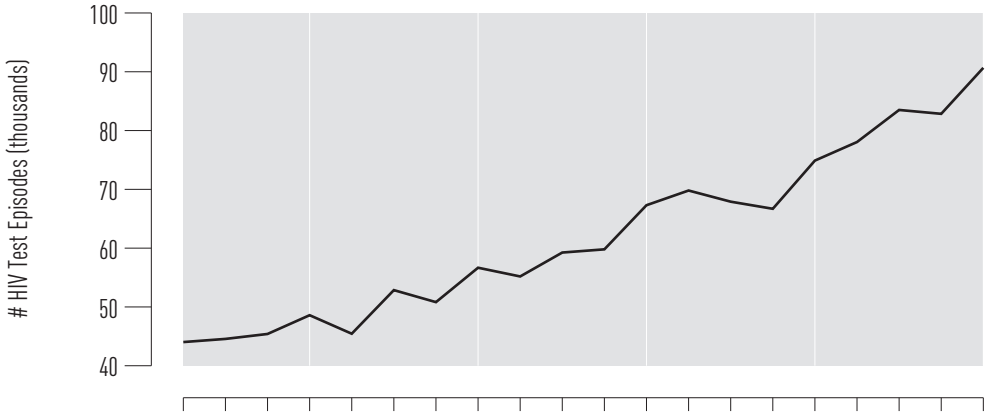
The goals of HA-led STOP-funded initiatives are to work toward achieving these goals. To these ends some outcome measures or indicators of progress have been drafted that should be considered in the design and implementation phases of these initiatives.

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.

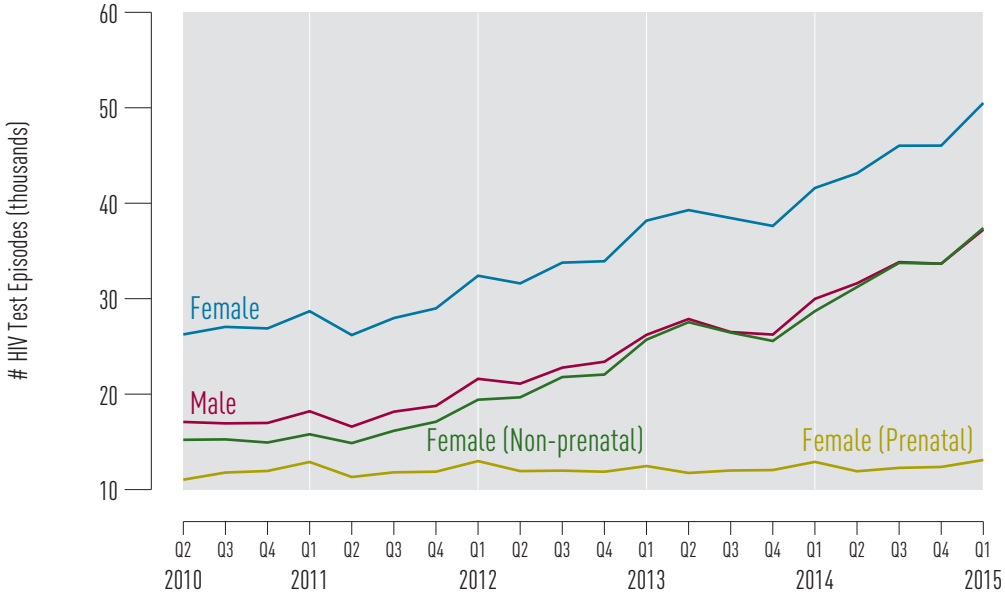
Indicator 1. HIV Testing Episodes

Figure 1.1 HIV Test Episodes for BC



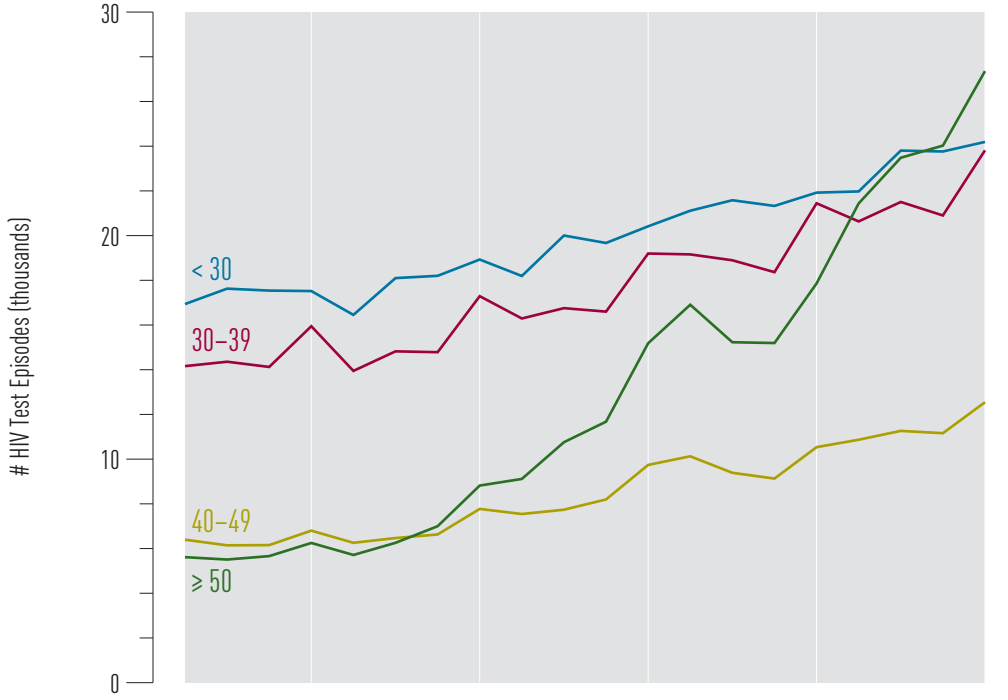
BC	44.0	44.6	45.4	48.6	45.4	52.9	50.8	56.7	55.2	59.3	59.8	67.3	69.8	67.9	66.7	74.9	78.0	83.5	82.8	90.7

Figure 1.2 HIV Test Episodes by Gender and Prenatal Status for BC [1]



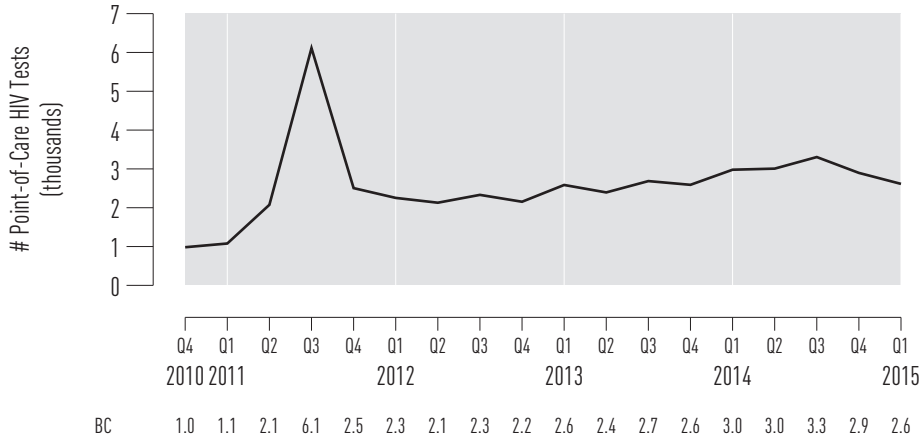
Female	26.3	27.0	26.9	28.7	26.2	28.0	29.0	32.4	31.6	33.8	33.9	38.2	39.3	38.4	37.6	41.6	43.1	46.0	46.0	50.5
Male	17.1	16.9	17.0	18.2	16.6	18.2	18.8	21.6	21.1	22.8	23.4	26.2	27.9	26.5	26.2	30.0	31.6	33.8	33.7	37.2
Female (Prenatal)	11.0	11.8	12.0	12.9	11.3	11.8	11.9	13.0	11.9	12.0	11.9	12.5	11.7	12.0	12.0	12.9	11.9	12.3	12.4	13.1
Female (Non-prenatal)	15.2	15.3	14.9	15.8	14.9	16.2	17.1	19.4	19.7	21.8	22.1	25.7	27.5	26.4	25.6	28.7	31.2	33.7	33.7	37.4

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



< 30	16.9	17.6	17.5	17.5	16.5	18.1	18.2	18.9	18.2	20.0	19.7	20.4	21.1	21.6	21.3	21.9	22.0	23.8	23.8	24.2
30–39	14.2	14.4	14.1	15.9	13.9	14.8	14.8	17.3	16.3	16.8	16.6	19.2	19.2	18.9	18.4	21.4	20.6	21.5	20.9	23.8
40–49	6.4	6.1	6.2	6.8	6.3	6.5	6.6	7.8	7.5	7.7	8.2	9.7	10.1	9.4	9.1	10.5	10.9	11.3	11.2	12.5
≥ 50	5.6	5.5	5.7	6.2	5.7	6.3	7.0	8.8	9.1	10.8	11.7	15.2	16.9	15.2	15.2	17.9	21.4	23.5	24.0	27.4

Figure 1.4 Point-of-Care HIV Tests for BC



BC	1.0	1.1	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	2.6

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.*

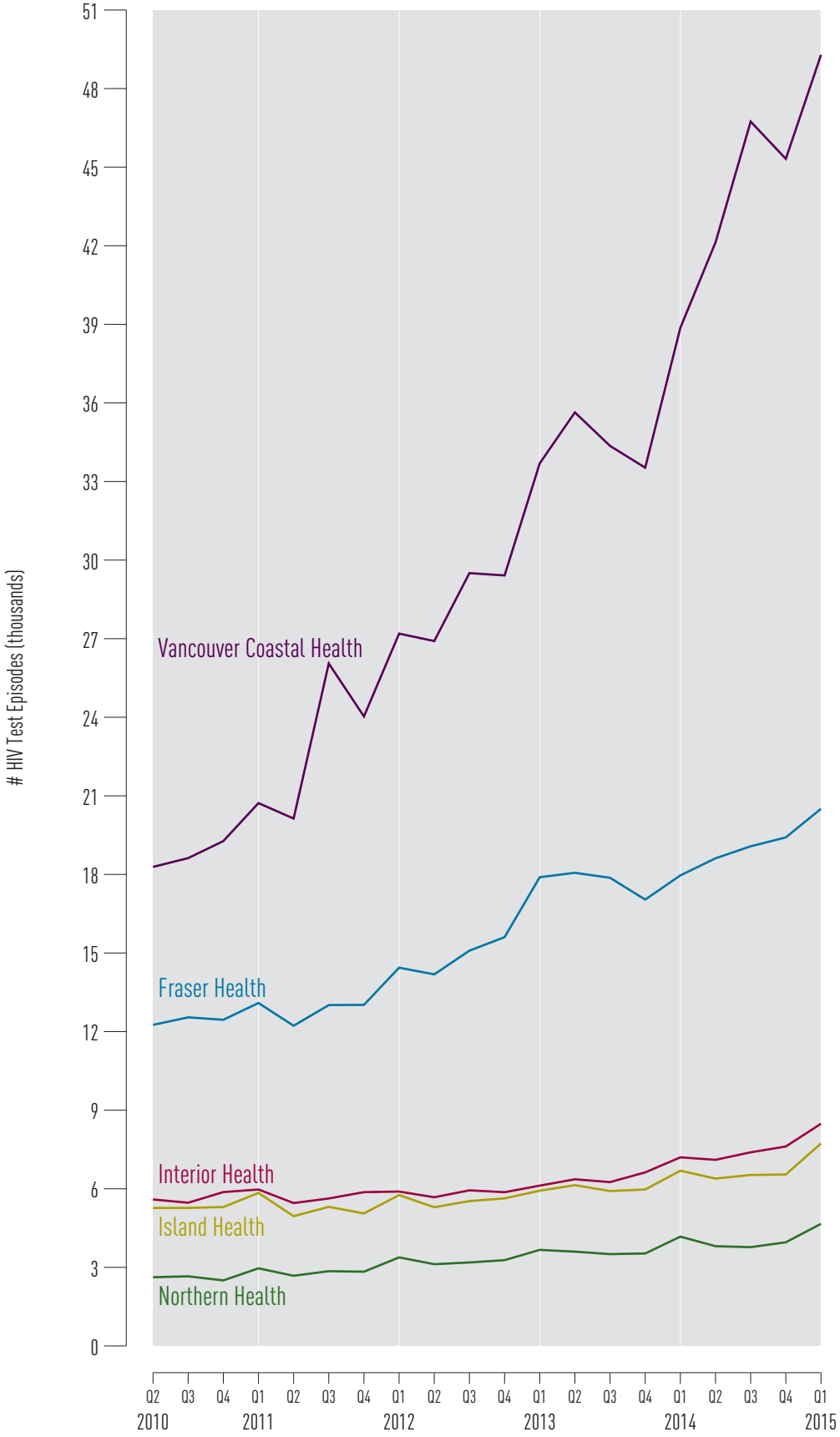
Limitations:

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

ii In Fraser Health, POC testing data are available from March 2011 forward. In Interior Health, POC testing data are available for May 2011 forward. For all other health authorities, POC testing data are available from the fourth quarter of 2010 forward.

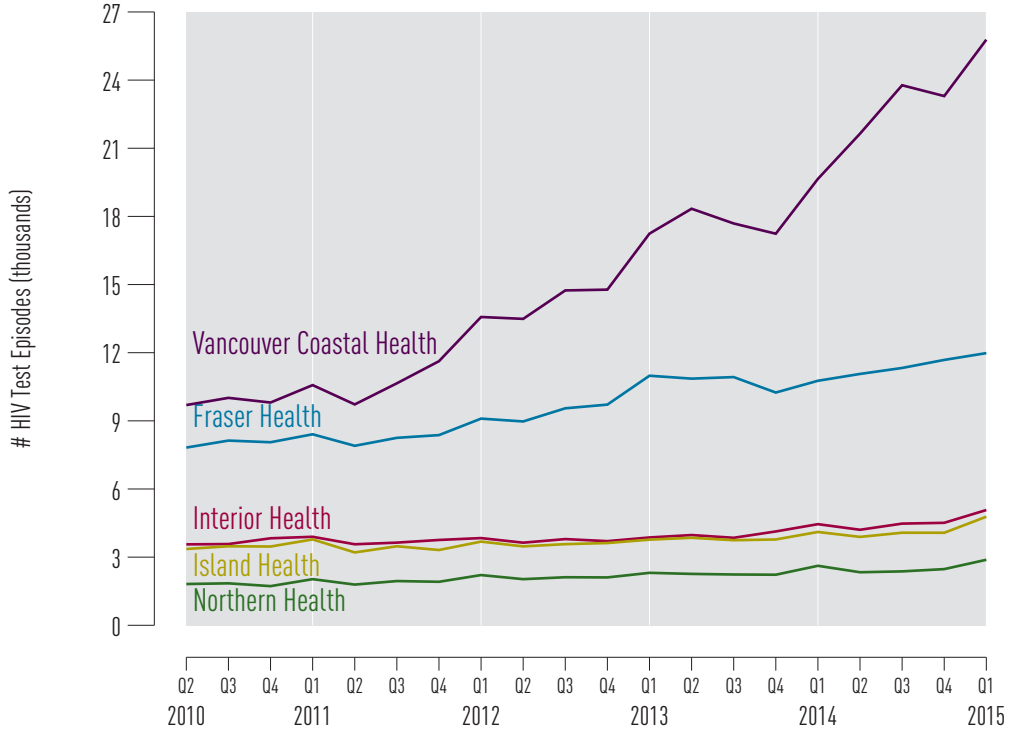
2 *Testing does not include point of care tests.*

Figure 1.5 HIV Test Episodes for BC by Health Authorities [1]



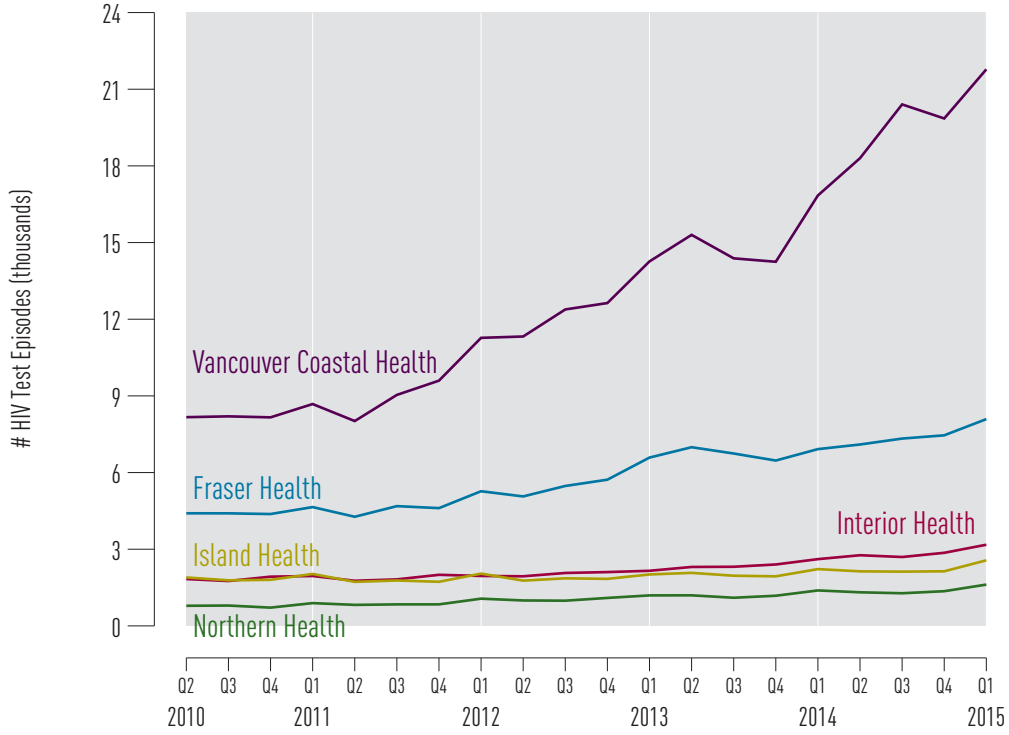
Fraser Health	12.3	12.5	12.5	13.1	12.2	13.0	13.0	14.4	14.2	15.1	15.6	17.9	18.1	17.9	17.0	18.0	18.6	19.1	19.4	20.5
Interior Health	5.6	5.5	5.9	6.0	5.5	5.6	5.9	5.9	5.7	5.9	5.9	6.1	6.4	6.3	6.6	7.2	7.1	7.4	7.6	8.5
Island Health	5.3	5.3	5.3	5.8	5.0	5.3	5.1	5.8	5.3	5.5	5.6	5.9	6.1	5.9	6.0	6.7	6.4	6.5	6.5	7.7
Northern Health	2.6	2.7	2.5	3.0	2.7	2.9	2.8	3.4	3.1	3.2	3.3	3.7	3.6	3.5	3.5	4.2	3.8	3.8	4.0	4.7
Vancouver Coastal Health	18.3	18.6	19.3	20.7	20.1	26.1	24.0	27.2	26.9	29.5	29.4	33.7	35.6	34.4	33.5	38.9	42.1	46.7	45.3	49.3

Figure 1.6 HIV Test Episodes for Non-prenatal Females in BC by Health Authorities [1]



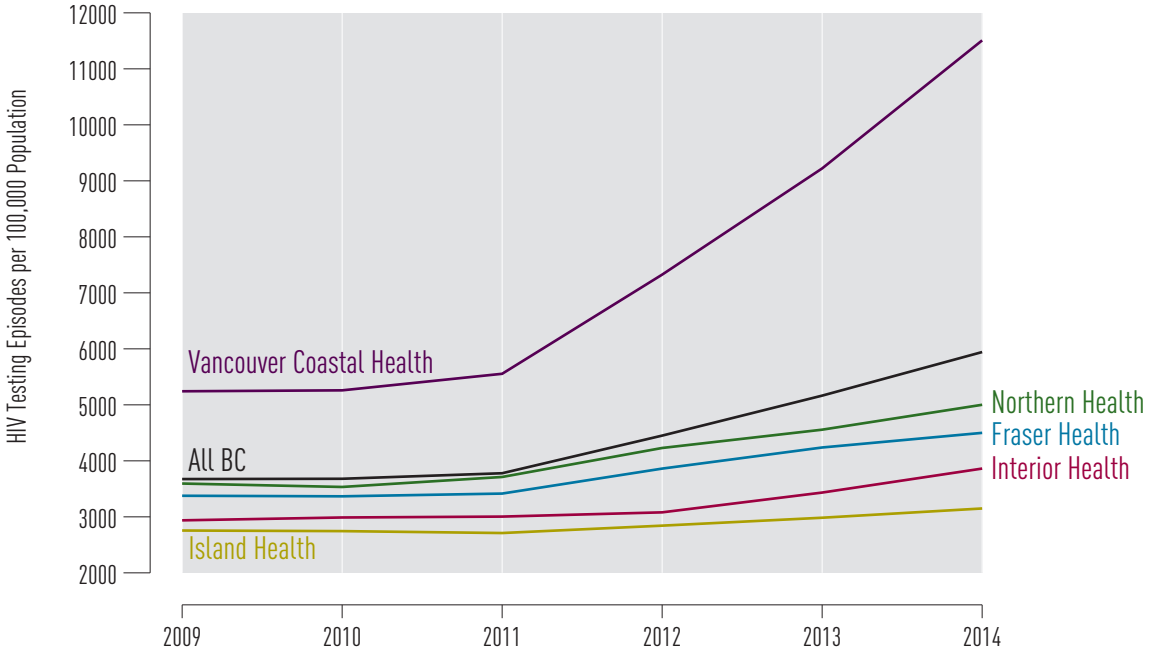
	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011	Q1 2012	Q2 2012	Q3 2012	Q4 2012	Q1 2013	Q2 2013	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015
Fraser Health	7.8	8.1	8.1	8.4	7.9	8.3	8.4	9.1	9.0	9.6	9.7	11.0	10.9	10.9	10.2	10.8	11.1	11.3	11.7	12.0
Interior Health	3.6	3.6	3.8	3.9	3.6	3.6	3.8	3.8	3.6	3.8	3.7	3.9	4.0	3.9	4.1	4.5	4.2	4.5	4.5	5.1
Island Health	3.4	3.5	3.5	3.8	3.2	3.5	3.3	3.7	3.5	3.6	3.6	3.8	3.9	3.7	3.8	4.1	3.9	4.1	4.1	4.8
Northern Health	1.8	1.8	1.7	2.0	1.8	1.9	1.9	2.2	2.0	2.1	2.1	2.3	2.3	2.2	2.2	2.6	2.3	2.4	2.5	2.9
Vancouver Coastal Health	9.7	10.0	9.8	10.6	9.7	10.7	11.6	13.6	13.5	14.7	14.8	17.2	18.3	17.7	17.2	19.7	21.6	23.8	23.3	25.8

Figure 1.7 HIV Test Episodes for Males in BC by Health Authorities [1]



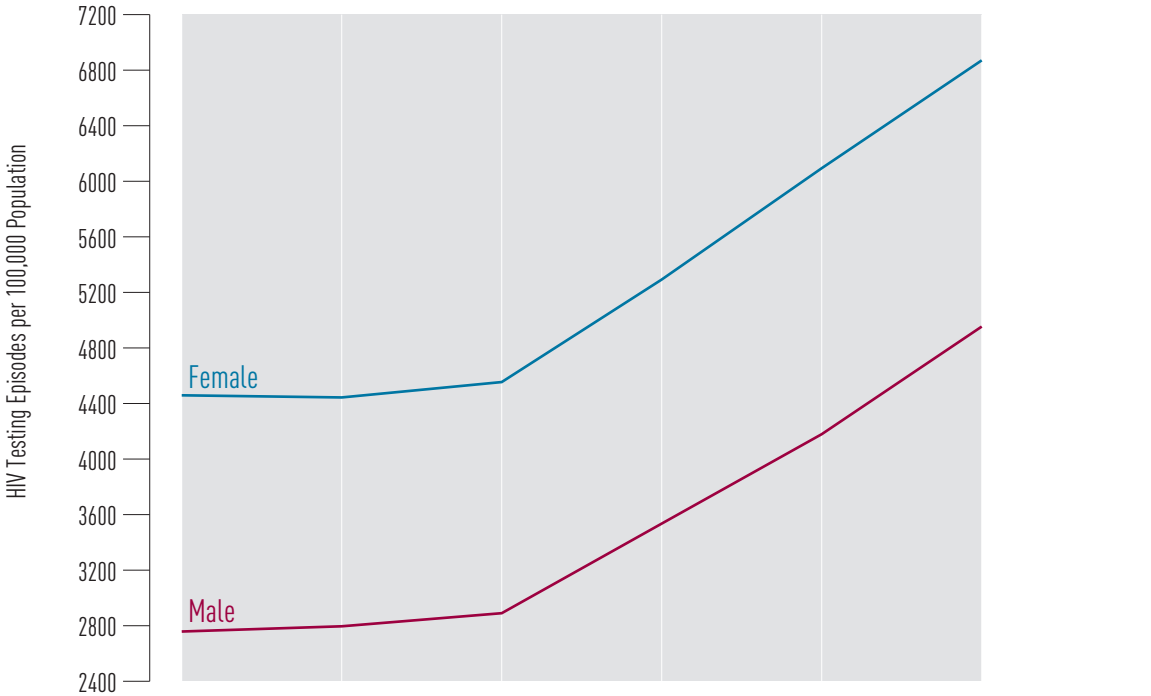
	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011	Q1 2012	Q2 2012	Q3 2012	Q4 2012	Q1 2013	Q2 2013	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015
Fraser Health	4.4	4.4	4.4	4.6	4.3	4.7	4.6	5.3	5.1	5.5	5.7	6.6	7.0	6.7	6.5	6.9	7.1	7.3	7.5	8.1
Interior Health	1.8	1.8	1.9	2.0	1.8	1.8	2.0	2.0	1.9	2.1	2.1	2.2	2.3	2.3	2.4	2.6	2.8	2.7	2.9	3.2
Island Health	1.9	1.8	1.8	2.0	1.7	1.8	1.7	2.0	1.8	1.9	1.8	2.0	2.1	2.0	1.9	2.2	2.1	2.1	2.1	2.6
Northern Health	0.8	0.8	0.7	0.9	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
Vancouver Coastal Health	8.2	8.2	8.2	8.7	8.0	9.0	9.6	11.3	11.3	12.4	12.6	14.3	15.3	14.4	14.2	16.8	18.3	20.4	19.9	21.8

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



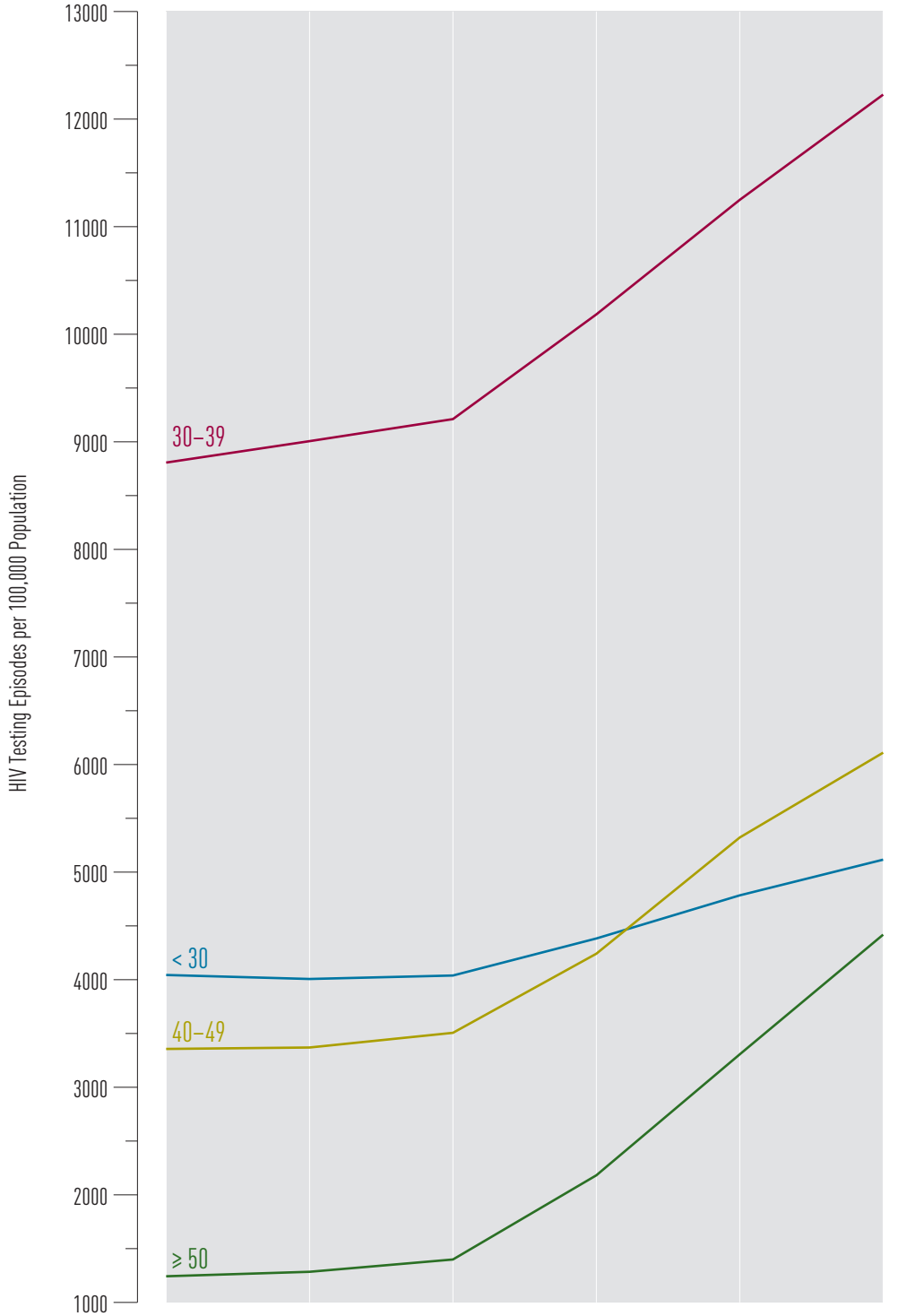
	2009	2010	2011	2012	2013	2014
All BC	3674.5	3679.9	3778.7	4450.7	5164.6	5942.8
Fraser Health	3376.4	3366.6	3415.6	3861.4	4238.5	4499.7
Interior Health	2937.6	2988.6	3004.5	3080.3	3433.5	3862.1
Island Health	2755.7	2745.2	2711.0	2842.7	2984.1	3149.5
Northern Health	3594.7	3533.6	3712.1	4229.7	4556.5	5001.1
Vancouver Coastal Health	5242.3	5259.0	5554.7	7325.4	9221.7	11508.4

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



	2009	2010	2011	2012	2013	2014
Female	4459.0	4443.6	4554.4	5292.6	6094.1	6870.7
Male	2758.2	2795.9	2890.2	3535.4	4179.1	4953.9

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



	2009	2010	2011	2012	2013	2014
< 30	4043.7	4006.6	4038.9	4383.1	4784.0	5115.8
30–39	8807.0	9006.2	9211.3	10184.5	11249.1	12227.4
40–49	3356.3	3369.6	3506.2	4241.5	5321.8	6110.2
≥ 50	1243.0	1284.7	1399.1	2181.6	3306.1	4418.6

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

New HIV Diagnoses

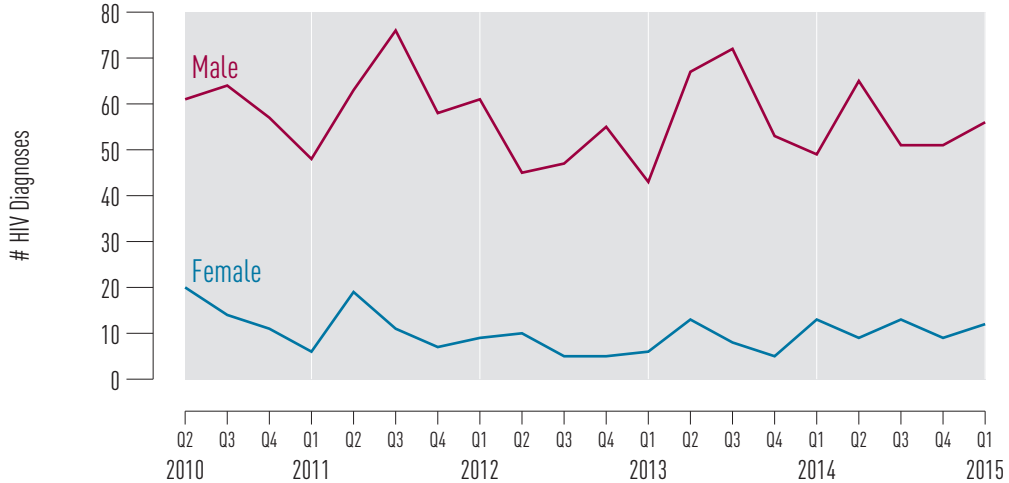
Trends in HIV diagnoses by gender and exposure category are described. Interpreting HIV diagnoses must be done with consideration that trends are influenced by both changes in testing rate as well as changes in transmission rates. It is important to note that new HIV diagnoses cases and rates are not 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 BC [3]

British Columbia	81	78	68	54	82	87	65	70	55	52	60	49	80	80	58	63	75	64	60	69
by Provider Address	*81*	*78*	*68*	*54*	*82*	*87*	*65*	*70*	*55*	*52*	*60*	*49*	*80*	*80*	*58*	*63*	*75*	*64*	*60*	*69*

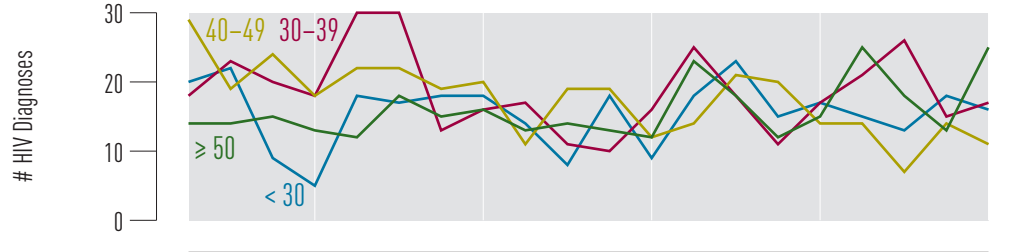
Figure 3.2 New HIV Diagnoses for BC by Gender [3]



Female	20	14	11	6	19	11	7	9	10	5	5	6	13	8	5	13	9	13	9	12
Male	61	64	57	48	63	76	58	61	45	47	55	43	67	72	53	49	65	51	51	56

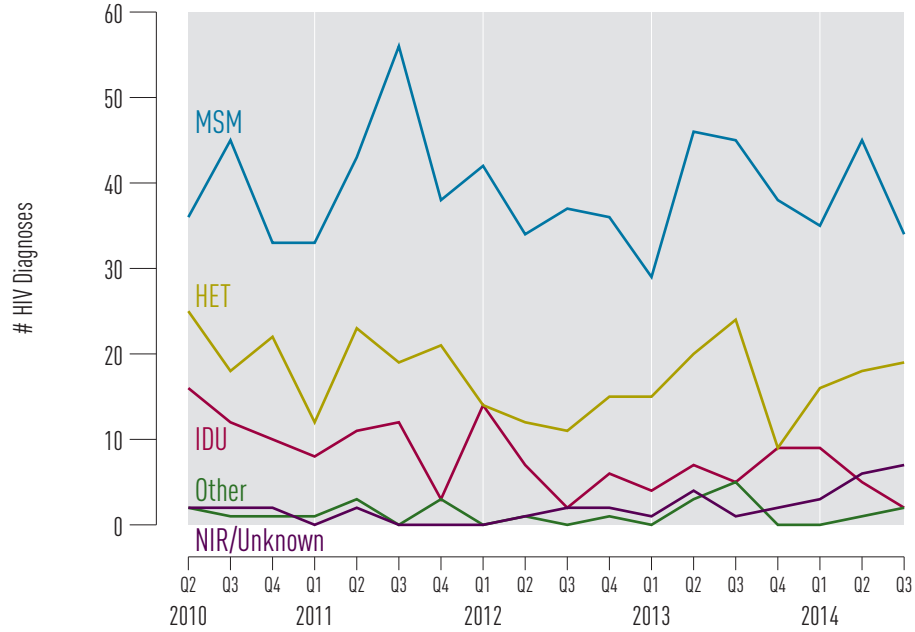
3 *Data Source: BCCDC. "By Provider Address" is graphed as dashed line in same colour.*

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



< 30	20	22	9	5	18	17	18	18	14	8	18	9	18	23	15	17	15	13	18	16
30–39	18	23	20	18	30	30	13	16	17	11	10	16	25	18	11	17	21	26	15	17
40–49	29	19	24	18	22	22	19	20	11	19	19	12	14	21	20	14	14	7	14	11
≥ 50	14	14	15	13	12	18	15	16	13	14	13	12	23	18	12	15	25	18	13	25

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

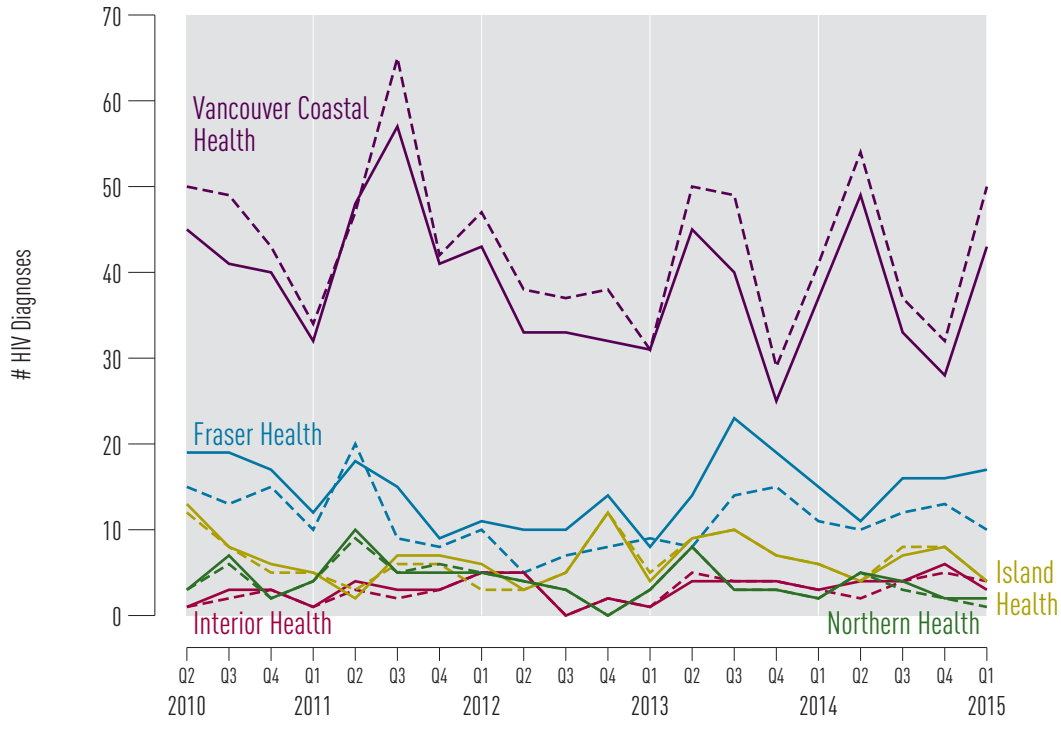


MSM (men who have sex with men)	36	45	33	33	43	56	38	42	34	37	36	29	46	45	38	35	45	34
IDU (injection drug user)	16	12	10	8	11	12	3	14	7	2	6	4	7	5	9	9	5	2
HET (heterosexual)	25	18	22	12	23	19	21	14	12	11	15	15	20	24	9	16	18	19
Other (other exposure identified)	2	1	1	1	3	0	3	0	1	0	1	0	3	5	0	0	1	2
NIR/Unknown (no identified exposure)	2	2	2	0	2	0	0	0	1	2	2	1	4	1	2	3	6	7

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

4 *MSM=men who have sex with men; IDU= injection drug user; HET=heterosexual. NIR=No identified risk/exposure. "By Provider Address" is graphed as dashed line in same colour.*

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



	Q2 2010	Q3	Q4	Q1 2011	Q2	Q3	Q4	Q1 2012	Q2	Q3	Q4	Q1 2013	Q2	Q3	Q4	Q1 2014	Q2	Q3	Q4	Q1 2015
Fraser Health	19	19	17	12	18	15	9	11	10	10	14	8	14	23	19	15	11	16	16	17
by Provider Address	*15*	*13*	*15*	*10*	*20*	*9*	*8*	*10*	*5*	*7*	*8*	*9*	*8*	*14*	*15*	*11*	*10*	*12*	*13*	*10*
Interior Health	1	3	3	1	4	3	3	5	5	0	2	1	4	4	4	3	4	4	6	3
by Provider Address	*1*	*2*	*3*	*1*	*3*	*2*	*3*	*5*	*5*	*0*	*2*	*1*	*5*	*4*	*4*	*3*	*2*	*4*	*5*	*4*
Island Health	13	8	6	5	2	7	7	6	3	5	12	4	9	10	7	6	4	7	8	4
by Provider Address	*12*	*8*	*5*	*5*	*3*	*6*	*6*	*3*	*3*	*5*	*12*	*5*	*9*	*10*	*7*	*6*	*4*	*8*	*8*	*4*
Northern Health	3	7	2	4	10	5	5	5	4	3	0	3	8	3	3	2	5	4	2	2
by Provider Address	*3*	*6*	*2*	*4*	*9*	*5*	*6*	*5*	*4*	*3*	*0*	*3*	*8*	*3*	*3*	*2*	*5*	*3*	*2*	*1*
Vancouver Coastal Health	45	41	40	32	48	57	41	43	33	33	32	31	45	40	25	37	49	33	28	43
by Provider Address	*50*	*49*	*43*	*34*	*47*	*65*	*42*	*47*	*38*	*37*	*38*	*31*	*50*	*49*	*29*	*41*	*54*	*37*	*32*	*50*

3 *Data Source: BCCDC. "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, laboratory results suggestive of acute HIV infection, and clinical presentation with an AIDS-defining illness (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	*and*	No AIDS case report
2a			CD4 350–499		
2b			CD4 200–349		
3			(CD4 <200	*or*	AIDS case report)
Unknown			No available CD4	*and*	No AIDS case report

Figure 4.1 Stage of HIV Infection at Diagnosis for BC, 2010–2014 [5]

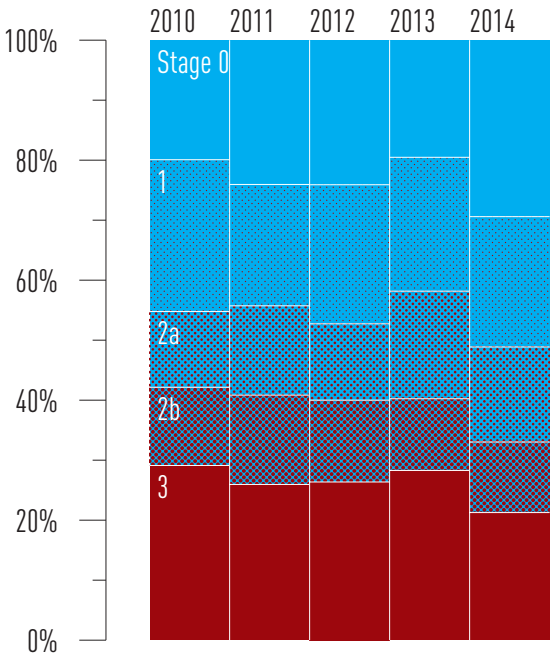
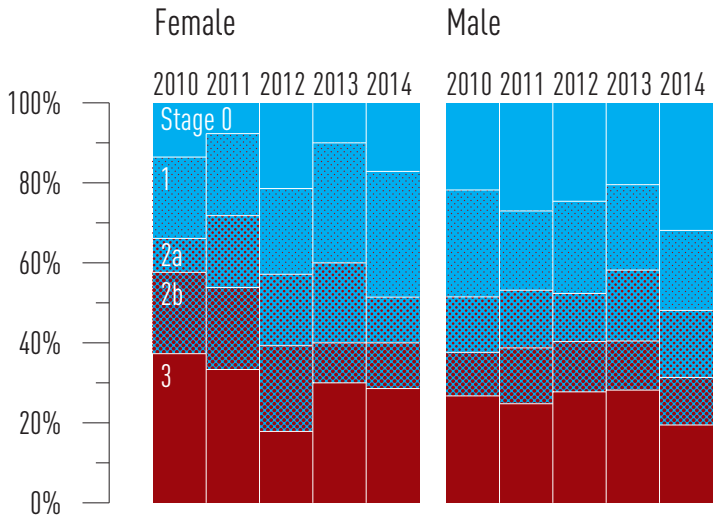


Figure 4.2 Stage of HIV Infection at Diagnosis by Gender for BC, 2010–2014 [5]



	British Columbia					*Female*					*Male*				
	2010	'11	'12	'13	'14	'10	'11	'12	'13	'14	'10	'11	'12	'13	'14
Stage 0	52	63	53	49	65	8	3	6	3	6	44	60	47	45	59
Stage 1	66	53	51	56	48	12	8	6	9	11	54	44	44	47	37
Stage 2a	33	39	28	45	35	5	7	5	6	4	28	32	23	39	31
Stage 2b	34	39	30	30	26	12	8	6	3	4	22	31	24	27	22
Stage 3	76	68	58	71	47	22	13	5	9	10	54	55	53	62	36
Unknown	35	26	16	15	40	2	4	1	1	10	33	21	15	14	30
Total *(n=)*	296	288	236	266	261	61	43	29	31	45	235	243	206	234	215

5 *Data Source: BCCDC*

Figure 4.3 Stage of HIV Infection at Diagnosis by Age Category for BC, 2010–2014 [5]

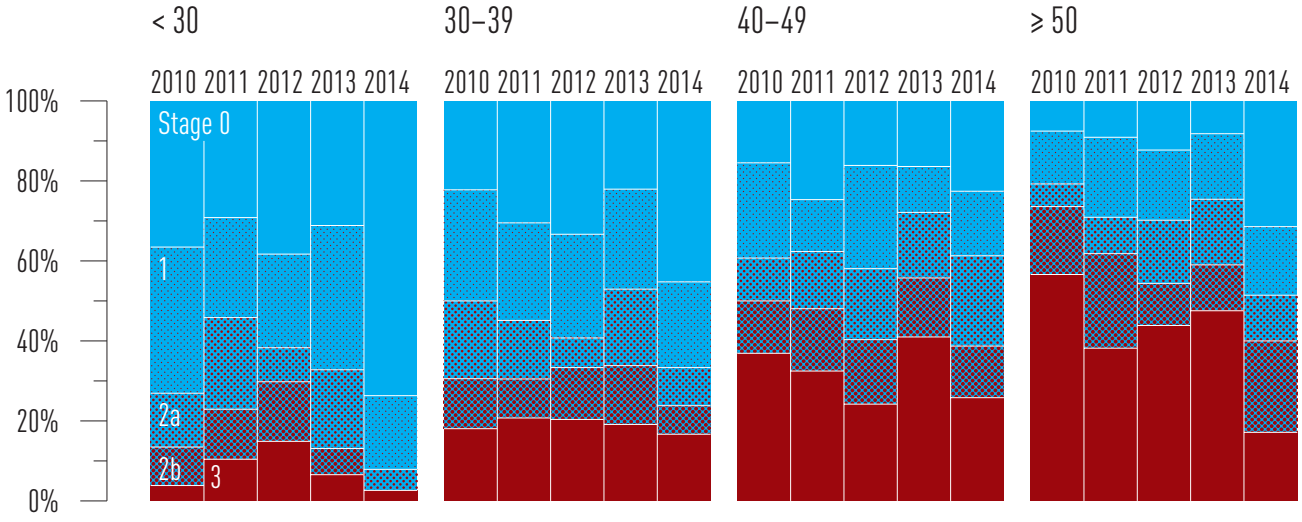
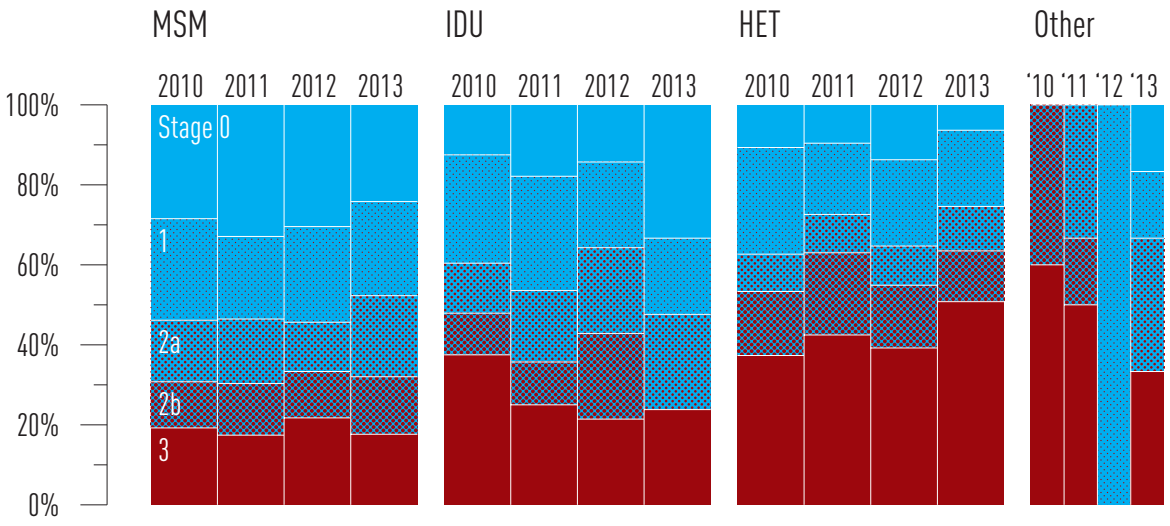


Figure 4.4 Stage of HIV Infection at Diagnosis by Exposure Category for BC, 2010–2013 [5,6]



	< 30 years					*30–39 years*					*40–49 years*					*≥ 50 years*					*MSM*				*IDU*				*Heterosexual*				*Other*				*NIR/Unknown*			
	2010	'11	'12	'13	'14	'10	'11	'12	'13	'14	'10	'11	'12	'13	'14	'10	'11	'12	'13	'14	'10	'11	'12	'13	'10	'11	'12	'13	'10	'11	'12	'13	10	11	12	13	10	11	12	13
Stage 0	19	14	18	19	28	16	25	18	15	19	13	19	10	10	7	4	5	7	5	11	37	51	42	37	6	5	4	7	8	7	7	4	0	0	0	1	1	0	0	0
Stage 1	19	12	11	22	7	20	20	14	17	9	20	10	16	7	5	7	11	10	10	6	33	32	33	36	13	8	6	4	20	13	11	12	0	0	1	1	0	0	0	3
Stage 2a	7	11	4	12	2	14	12	4	13	4	9	11	11	10	7	3	5	9	10	4	20	25	17	31	6	5	6	5	7	7	5	7	0	2	0	2	0	0	0	0
Stage 2b	5	6	7	4	0	9	8	7	10	3	11	12	10	9	4	9	13	6	7	8	15	20	16	22	5	3	6	0	12	15	8	8	2	1	0	0	0	0	0	0
Stage 3	2	5	7	4	1	13	17	11	13	7	31	25	15	25	8	30	21	25	29	6	25	27	30	27	18	7	6	5	28	31	20	32	3	3	0	2	2	0	2	5
Unknown	11	6	7	1	23	13	10	3	4	33	10	5	2	4	26	1	5	4	6	37	22	15	10	4	4	6	1	4	7	2	1	4	1	1	1	3	1	2	3	0
Total *(n=)*	63	54	54	62	61	85	92	57	72	75	94	82	64	65	57	54	60	61	67	72	152	170	148	157	52	34	29	25	82	75	52	67	6	7	2	9	4	2	5	8

6 *MSM=men who have sex with men; IDU= injection drug user; HET=heterosexual. NIR=No identified risk/exposure.*

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. Leakage 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 year 2012 in BC overall and stratified by sex and age for each Health Authority.

Figure 5.1 Estimated Cascade of Care for British Columbia, Year Ending 2015 Q1 [7]

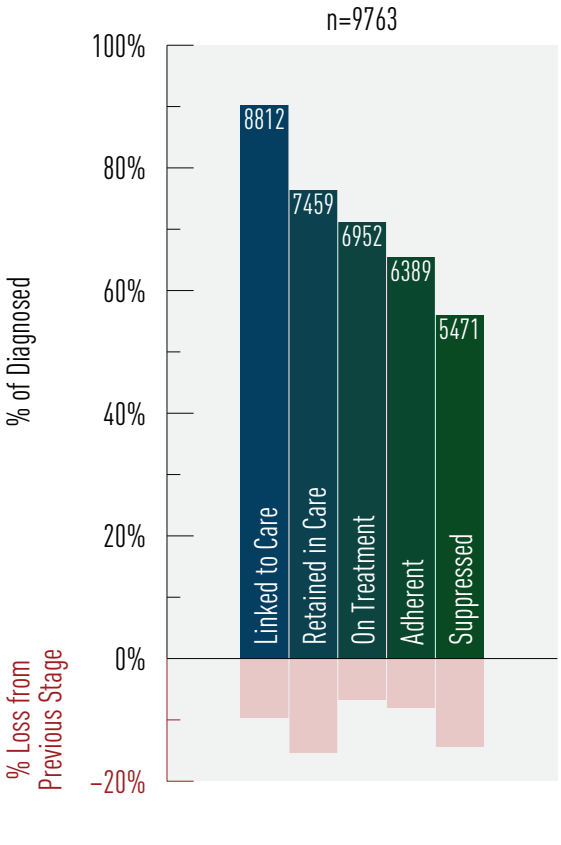
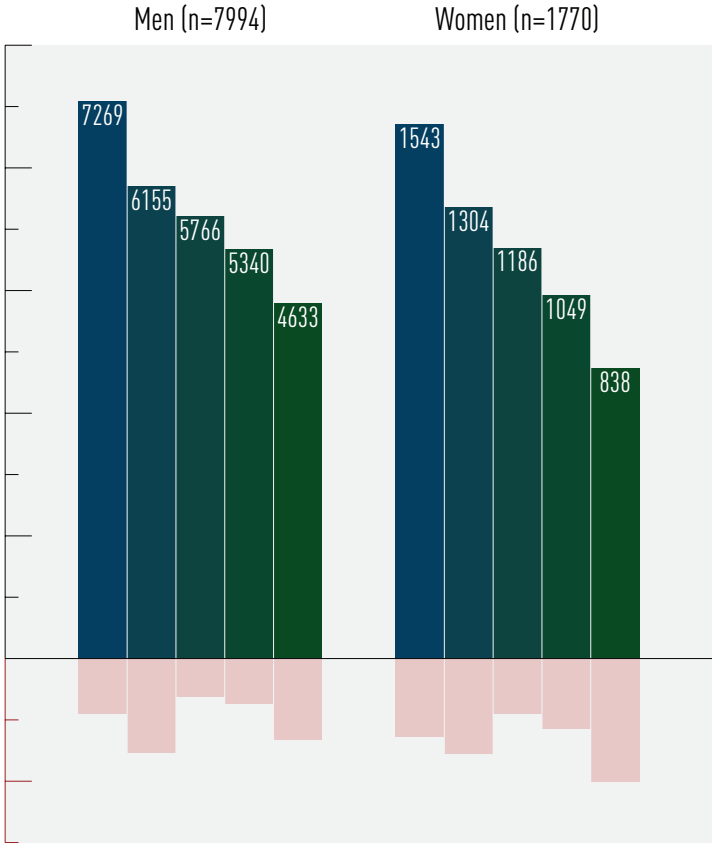


Figure 5.2 Estimated Cascade of Care for British Columbia by Gender, Year Ending 2015 Q1 [7]

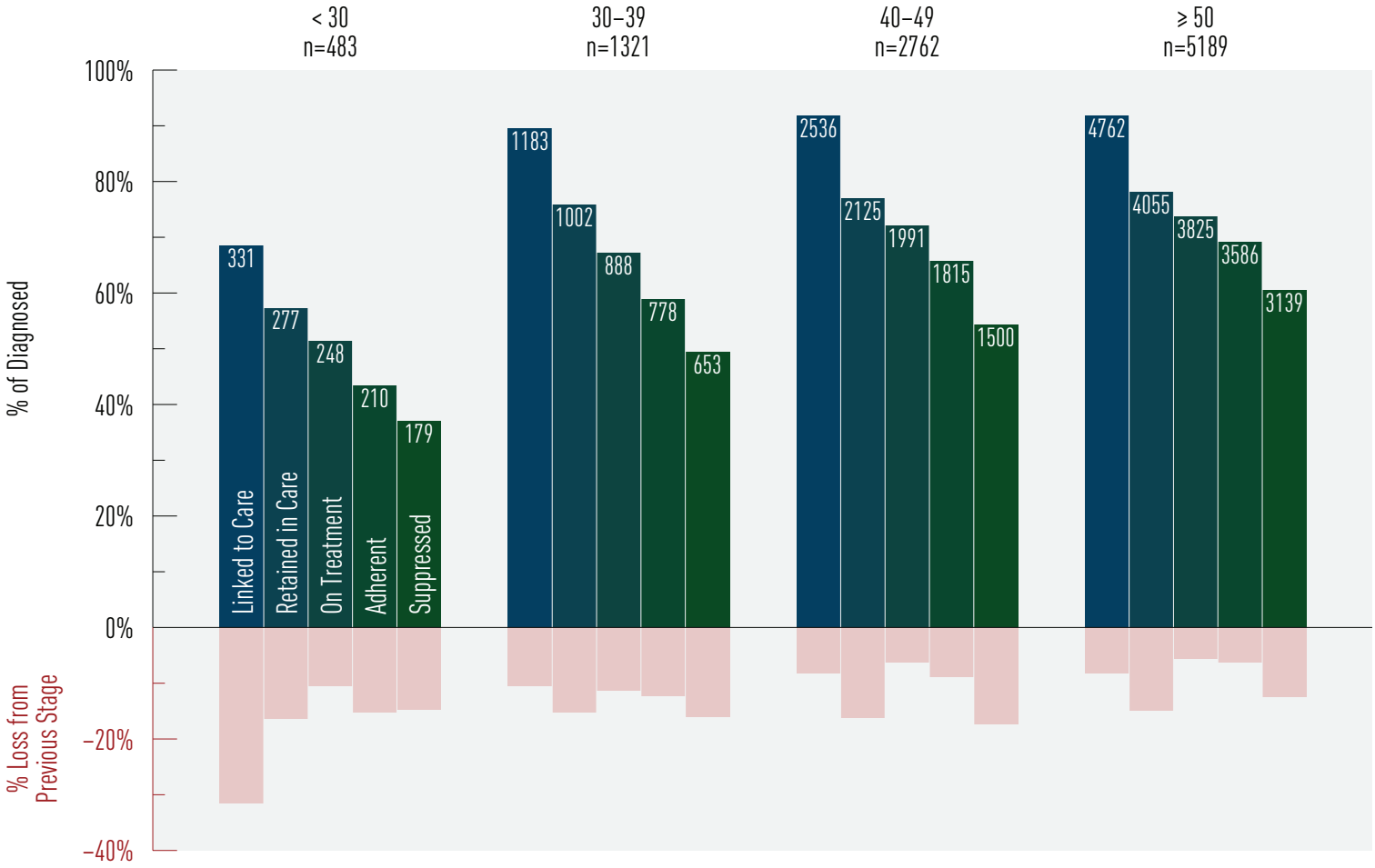


7 *Data is for the period 2014 Q2–2015 Q1.*
Data Sources:
i British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).
ii Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).

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 has been assigned to their biological sex.

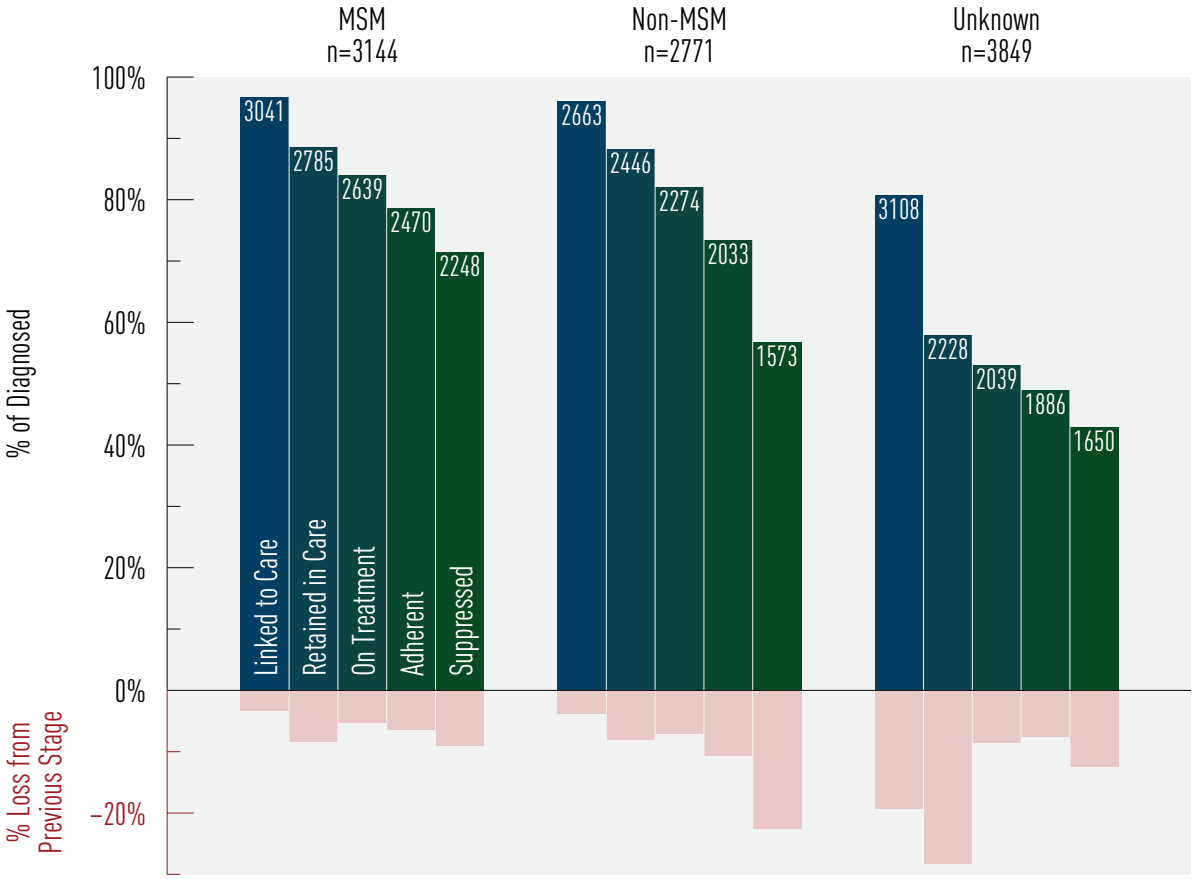
Figure 5.3 Estimated Cascade of Care for British Columbia by Age Category, Year Ending 2015 Q1 [8]



8 *Data is for the period 2014 Q2–2015 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 2015 Q1 [9]

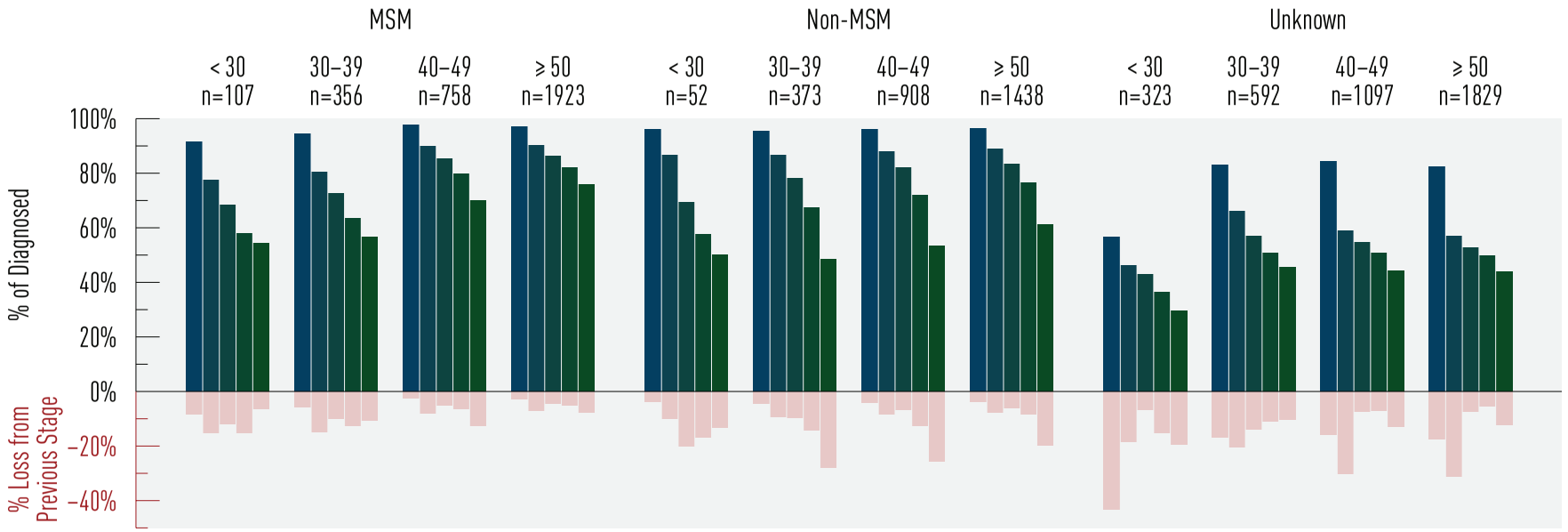


9 *Data is for the period 2014 Q2–2015 Q1.*
Data Sources:
i British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).
ii Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).

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.

Recent updates to the DTP database have allowed for more comprehensive information on HIV risk group category. As a result, 2014 Q4 data may differ significantly from preceding reports in terms of total numbers ascribed to each risk group.

Figure 5.5 Estimated Cascade of Care for British Columbia by Age Category and MSM Status, Year Ending 2015 Q1 [9]

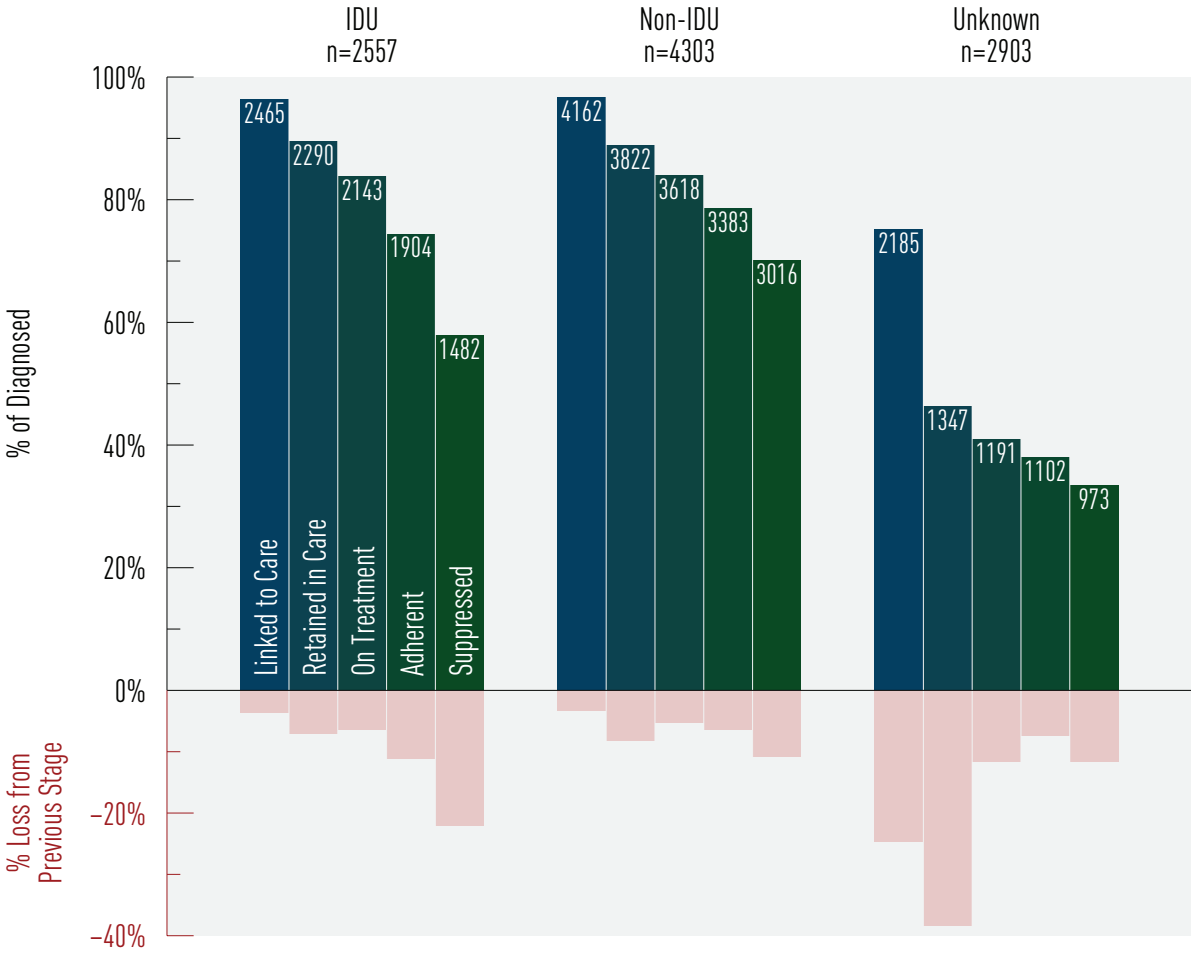


9 *Data is for the period 2014 Q2–2015 Q1.*
Data Sources:
i British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).
ii Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).

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.

Recent updates to the DTP database have allowed for more comprehensive information on HIV risk group category. As a result, 2014 Q4 data may differ significantly from preceding reports in terms of total numbers ascribed to each risk group.

Figure 5.6 Estimated Cascade of Care for British Columbia by History of IDU, Year Ending 2015 Q1 [9]

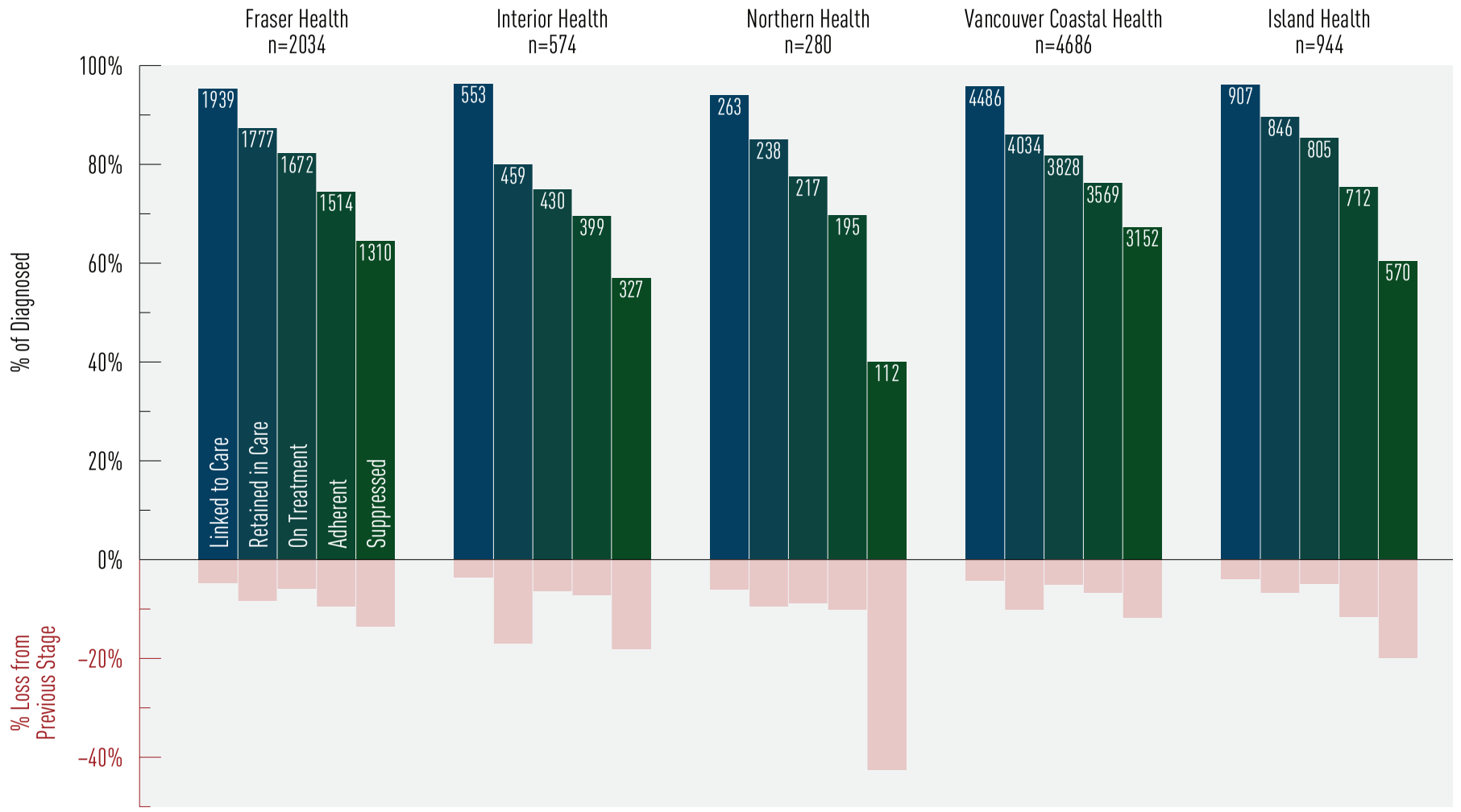


9 *Data is for the period 2014 Q2–2015 Q1.*
Data Sources:
i British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).
ii Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).

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.

Recent updates to the DTP database have allowed for more comprehensive information on HIV risk group category. As a result, 2014 Q4 data may differ significantly from preceding reports in terms of total numbers ascribed to each risk group.

Figure 5.7 Estimated Cascade of Care for British Columbia by Health Authority, Year Ending 2015 Q1 [9]



9 *Data is for the period 2014 Q2–2015 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.

Recent updates to the DTP database have allowed for more comprehensive information on HIV risk group category. As a result, 2014 Q4 data may differ significantly from preceding reports in terms of total numbers ascribed to each risk group.

Indicator 6. The 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. The 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, 2013 Q2–2015 Q1 [10]

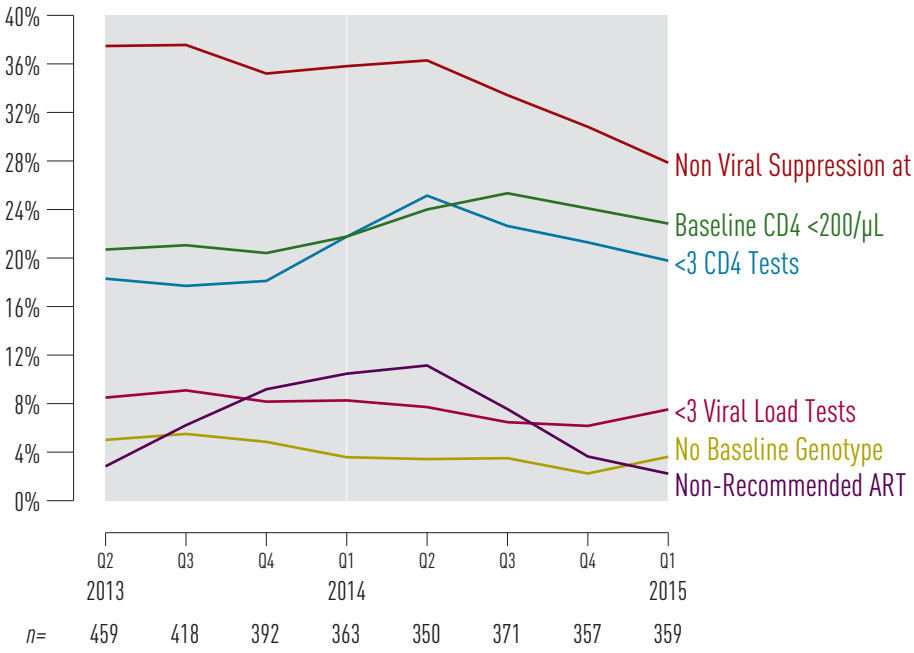
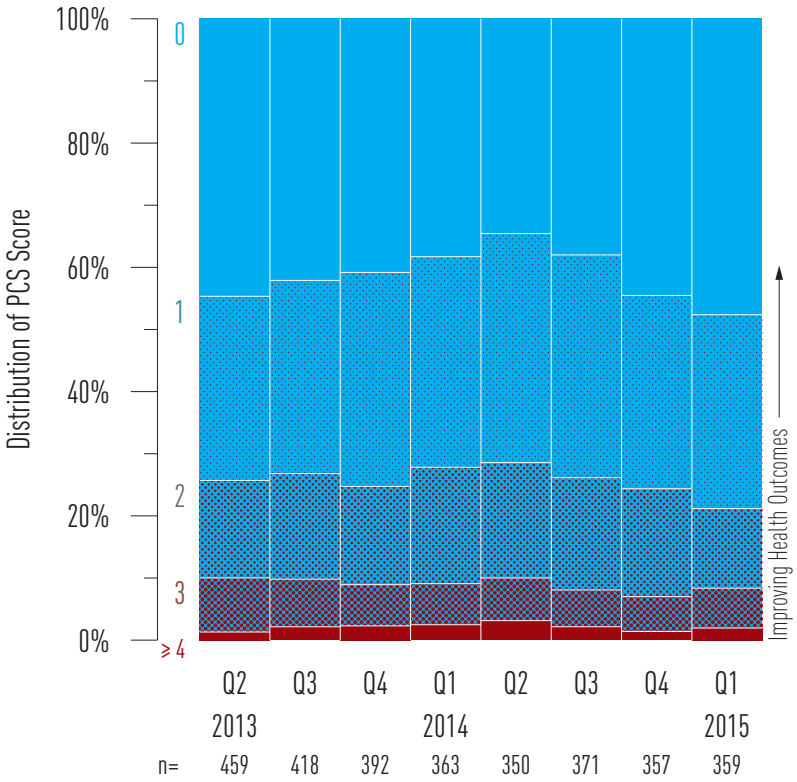


Figure 6.2 Historical Trends for PCS Score for BC, 2013 Q2–2015 Q1 [10,11]



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

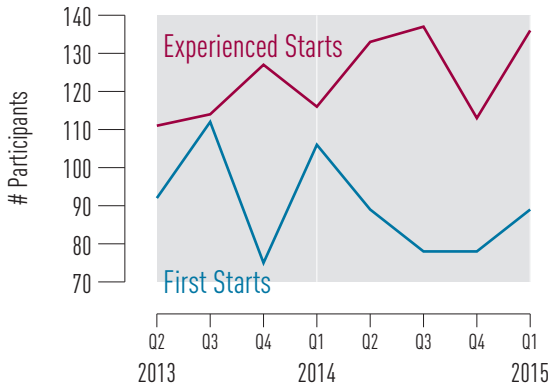
11 *Each quarter's data is calculated as the sum of the 4 quarters leading up to it. e.g. 2013 Q1 is calculated from 2012 Q2 – 2013 Q1.*
NB: A score of 0 is the best score and a score of 4 or more is the worst score.

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.

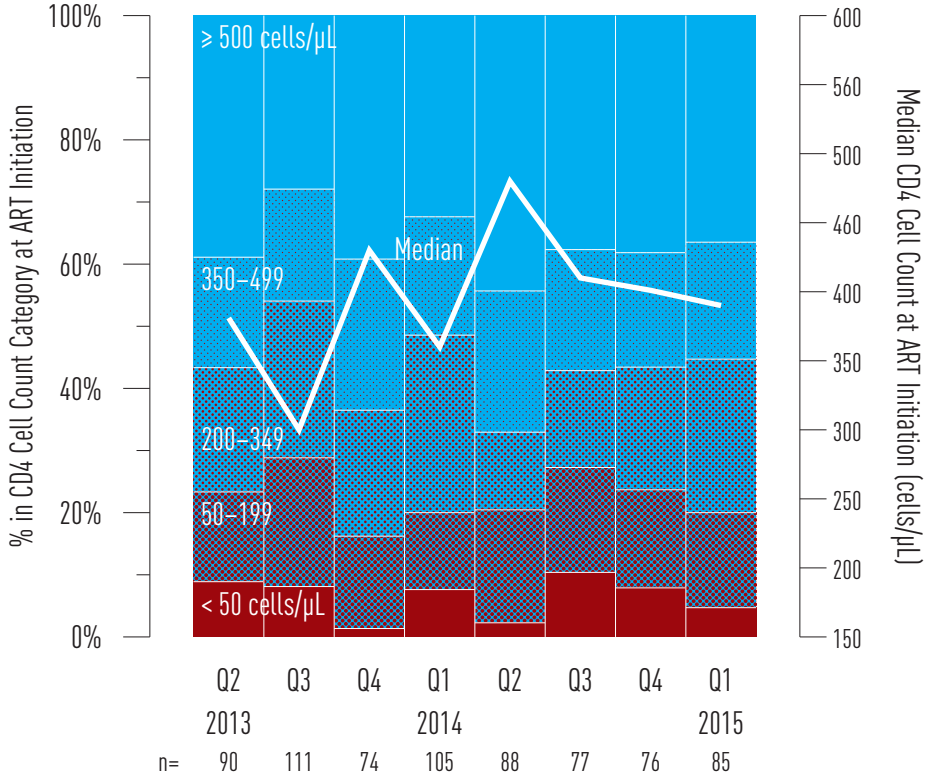
Indicator 7. New Antiretroviral Therapy Starts in BC

Figure 7 BC-CfE Drug Treatment Program Enrollment: New ART Participants in BC, 2013 Q2–2015 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, 2013 Q2–2015 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.*

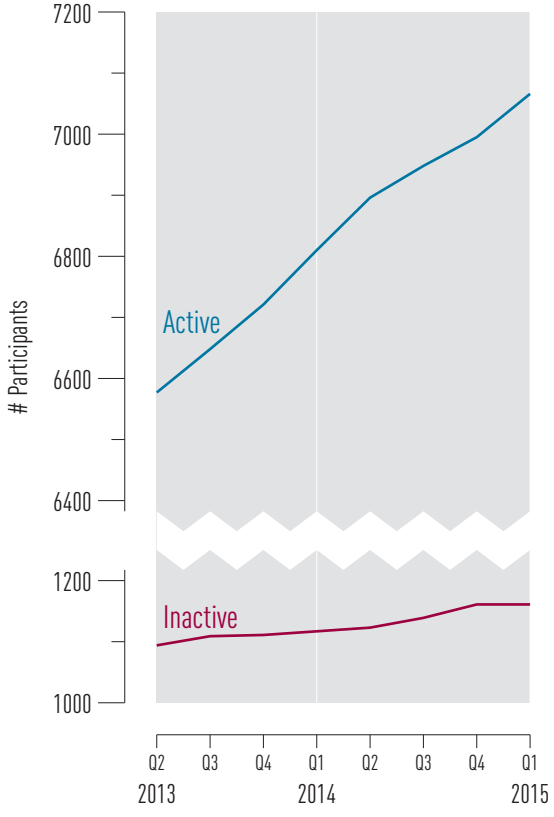
13 *Data Source: Drug Treatment Program Database Limitations: CD4 cell count data is approximately 80% complete.*

Indicator 9. Active and Inactive DTP Participants

Table 3. Distribution of People on ART for BC, 2015 Q1 [14]

		Fraser	Interior	Island	Northern	Vancouver Coastal	Total BC
Age	< 30	89	14	24	16	148	291
	30–39	259	54	92	50	507	962
	40–49	543	103	228	63	1157	2095
	≥ 50	814	270	468	93	2072	3718
Gender	Male	1309	345	655	134	3424	5869
	Female	396	96	157	88	460	1197
Exposure	MSM	521	125	209	28	1824	2708
	IDU	461	147	278	125	1126	2137
Total		1705	441	812	222	3884	7066

Figure 9 Active and Inactive DTP Participants for BC, 2013 Q2–2015 Q1 [15]



	Q2 2013	Q3	Q4	Q1 2014	Q2	Q3	Q4	Q1 2015
Active	6577	6648	6721	6810	6896	6948	6995	7066
Inactive	1094	1109	1111	1117	1123	1139	1161	1161

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

Recent updates to the DTP database provides for improved classification allowing some individuals previously classified as 'unknown' to be reclassified into specific risk groups. This update is in effect from 2014Q4 and may result in noticeable changes of numbers in each risk group category compared to previous reports.

Definitions:
'On antiretroviral therapy' defined as being on treatment in the current quarter
'Unknown/not stated' defined as being on treatment in the current quarter, and city of residence unknown

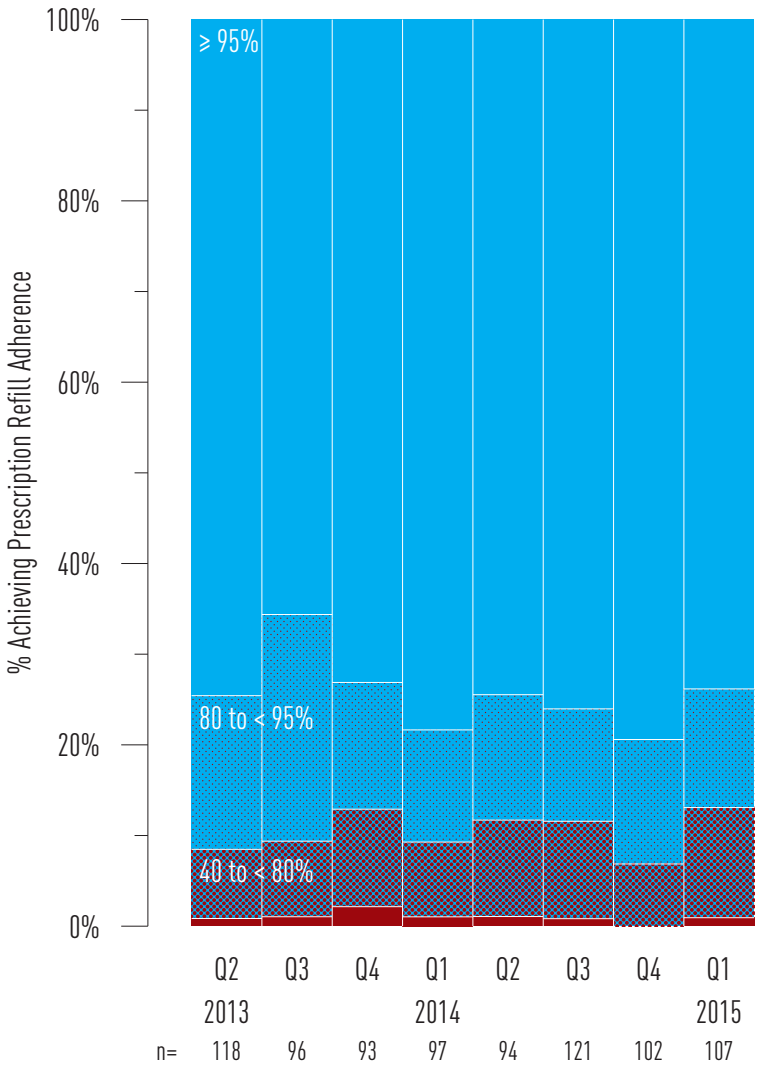
15 *Active DTP participants: An individual who has had medication prescribed at least once in the preceding quarter.*
Inactive DTP participants: Persons no longer prescribed drugs through the HIV/AIDS Drug Treatment Program in the last quarter.

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, 2013 Q2–2015 Q1 [16]

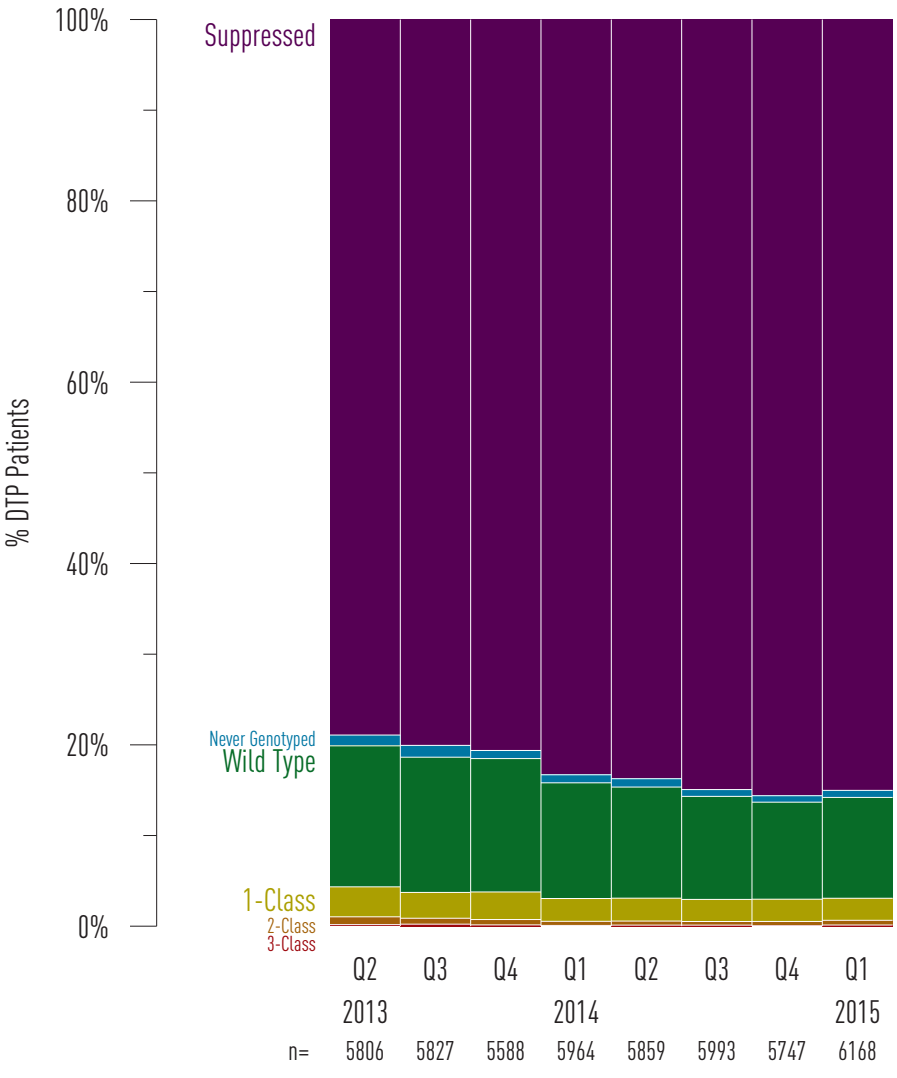


16 *Data Source: Drug Treatment Program Database*
Limitation: Prescription refill adherence is used as a proxy for patient adherence.

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 or three 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, 2013 Q2–2015 Q1 [17]



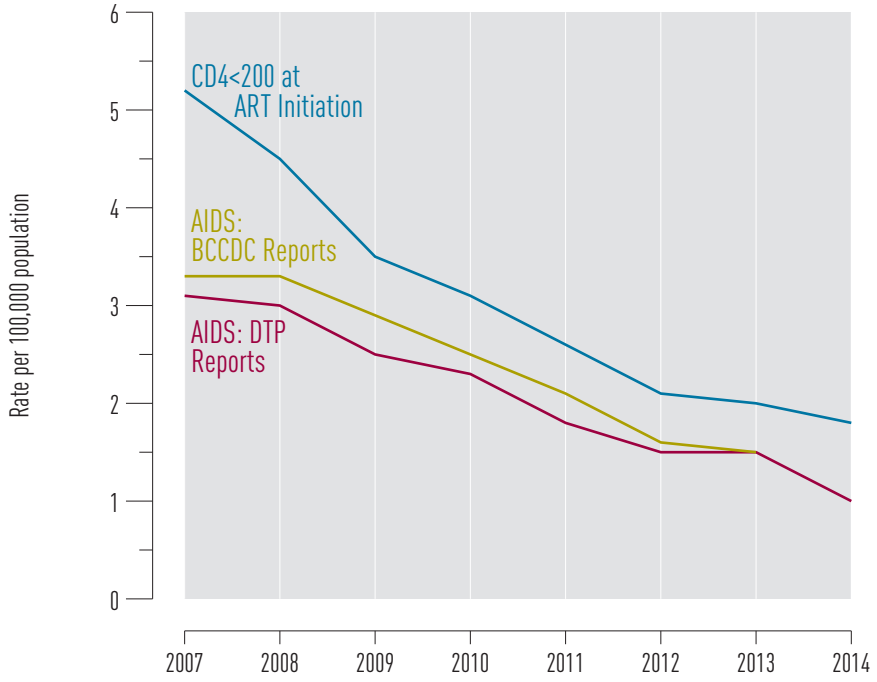
17 *Data Source: Drug Treatment Program Database*

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

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 British Columbia [18]



		2007	2008	2009	2010	2011	2012	2013	2014
CD4<200 at ART initiation	CASES	224	194	155	138	115	95	90	84
	PER 100K	5.2	4.5	3.5	3.1	2.6	2.1	2.0	1.8
AIDS: DTP Reports	CASES	134	130	110	103	81	67	68	48
	PER 100K	3.1	3.0	2.5	2.3	1.8	1.5	1.5	1.0
AIDS: BCCDC Reports	CASES	143	142	126	112	95	74	68	–
	PER 100K	3.3	3.3	2.9	2.5	2.1	1.6	1.5	–

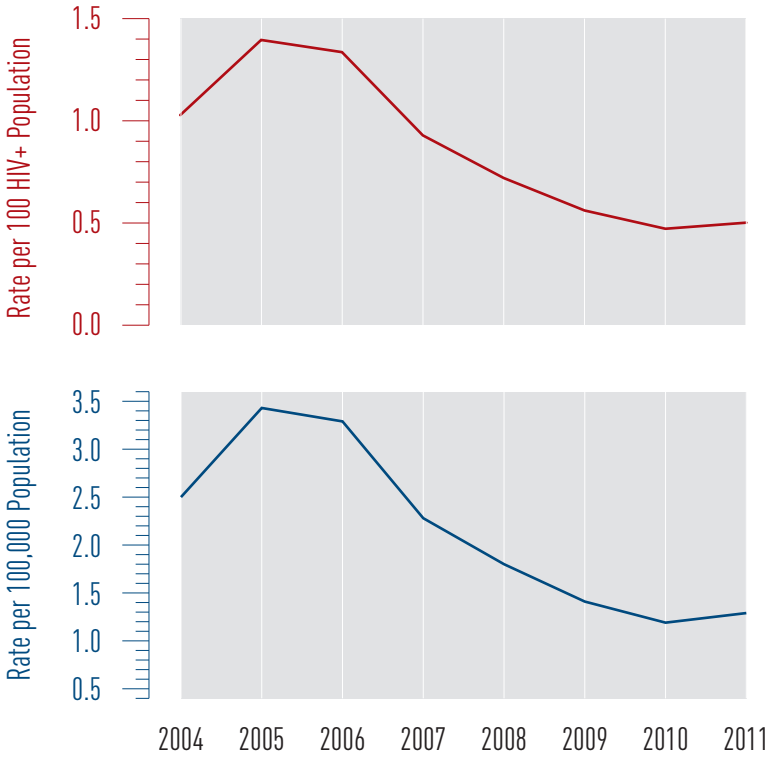
18 *Data Source: DTP AIDS cases are obtained from the Drug Treatment Program Database; BCCDC AIDS cases are obtained from the BCCDC; CD4<200 at ART initiation data came from the DTP database.*

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.

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)**

		2010 Q2	Q3	Q4	2011 Q1	Q2	Q3	Q4	2012 Q1	Q2	Q3	Q4	2013 Q1	Q2	Q3	Q4	2014 Q1	Q2	Q3	Q4	2015 Q1
British Columbia		44.0	44.6	45.4	48.6	45.4	52.9	50.8	56.7	55.2	59.3	59.8	67.3	69.8	67.9	66.7	74.9	78.0	83.5	82.8	90.7
Gender	Female	26.3	27.0	26.9	28.7	26.2	28.0	29.0	32.4	31.6	33.8	33.9	38.2	39.3	38.4	37.6	41.6	43.1	46.0	46.0	50.5
	Male	17.1	16.9	17.0	18.2	16.6	18.2	18.8	21.6	21.1	22.8	23.4	26.2	27.9	26.5	26.2	30.0	31.6	33.8	33.7	37.2
	Other	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.3
Female (Prenatal)		11.0	11.8	12.0	12.9	11.3	11.8	11.9	13.0	11.9	12.0	11.9	12.5	11.7	12.0	12.0	12.9	11.9	12.3	12.4	13.1
Female (Non-prenatal)		15.2	15.3	14.9	15.8	14.9	16.2	17.1	19.4	19.7	21.8	22.1	25.7	27.5	26.4	25.6	28.7	31.2	33.7	33.7	37.4
Age	< 30	16.9	17.6	17.5	17.5	16.5	18.1	18.2	18.9	18.2	20.0	19.7	20.4	21.1	21.6	21.3	21.9	22.0	23.8	23.8	24.2
	30–39	14.2	14.4	14.1	15.9	13.9	14.8	14.8	17.3	16.3	16.8	16.6	19.2	19.2	18.9	18.4	21.4	20.6	21.5	20.9	23.8
	40–49	6.4	6.1	6.2	6.8	6.3	6.5	6.6	7.8	7.5	7.7	8.2	9.7	10.1	9.4	9.1	10.5	10.9	11.3	11.2	12.5
	≥ 50	5.6	5.5	5.7	6.2	5.7	6.3	7.0	8.8	9.1	10.8	11.7	15.2	16.9	15.2	15.2	17.9	21.4	23.5	24.0	27.4
POC HIV Tests		0.0	0.0	1.0	1.1	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	2.6
Fraser Health		12.3	12.5	12.5	13.1	12.2	13.0	13.0	14.4	14.2	15.1	15.6	17.9	18.1	17.9	17.0	18.0	18.6	19.1	19.4	20.5
Female (Non-prenatal)		4.0	4.0	3.9	4.0	3.9	4.3	4.3	4.7	4.9	5.4	5.7	6.6	6.8	6.8	6.2	6.5	6.9	7.2	7.4	7.6
Male		4.4	4.4	4.4	4.6	4.3	4.7	4.6	5.3	5.1	5.5	5.7	6.6	7.0	6.7	6.5	6.9	7.1	7.3	7.5	8.1
Interior Health		5.6	5.5	5.9	6.0	5.5	5.6	5.9	5.9	5.7	5.9	5.9	6.1	6.4	6.3	6.6	7.2	7.1	7.4	7.6	8.5
Female (Non-prenatal)		1.9	1.9	2.1	2.0	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
Male		1.8	1.8	1.9	2.0	1.8	1.8	2.0	2.0	1.9	2.1	2.1	2.2	2.3	2.3	2.4	2.6	2.8	2.7	2.9	3.2
Island Health		5.3	5.3	5.3	5.8	5.0	5.3	5.1	5.8	5.3	5.5	5.6	5.9	6.1	5.9	6.0	6.7	6.4	6.5	6.5	7.7
Female (Non-prenatal)		1.8	1.8	1.8	1.9	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
Male		1.9	1.8	1.8	2.0	1.7	1.8	1.7	2.0	1.8	1.9	1.8	2.0	2.1	2.0	1.9	2.2	2.1	2.1	2.1	2.6
Northern Health		2.6	2.7	2.5	3.0	2.7	2.9	2.8	3.4	3.1	3.2	3.3	3.7	3.6	3.5	3.5	4.2	3.8	3.8	4.0	4.7
Female (Non-prenatal)		1.0	0.9	0.9	1.0	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
Male		0.8	0.8	0.7	0.9	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
Vancouver Coastal Health		18.3	18.6	19.3	20.7	20.1	26.1	24.0	27.2	26.9	29.5	29.4	33.7	35.6	34.4	33.5	38.9	42.1	46.7	45.3	49.3
Female (Non-prenatal)		6.6	6.6	6.3	6.8	6.4	7.1	8.0	9.5	9.8	11.1	11.2	13.6	14.8	14.0	13.6	15.8	17.9	20.0	19.6	21.8
Male		8.2	8.2	8.2	8.7	8.0	9.0	9.6	11.3	11.3	12.4	12.6	14.3	15.3	14.4	14.2	16.8	18.3	20.4	19.9	21.8

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

		2009	2010	2011	2012	2013	2014
British Columbia		3674.5	3679.9	3778.7	4450.7	5164.6	5942.8
Fraser Health		3376.4	3366.6	3415.6	3861.4	4238.5	4499.7
Interior Health		2937.6	2988.6	3004.5	3080.3	3433.5	3862.1
Island Health		2755.7	2745.2	2711.0	2842.7	2984.1	3149.5
Northern Health		3594.7	3533.6	3712.1	4229.7	4556.5	5001.1
Vancouver Coastal Health		5242.3	5259.0	5554.7	7325.4	9221.7	11508.4
Gender	Female	4459.0	4443.6	4554.4	5292.6	6094.1	6870.7
	Male	2758.2	2795.9	2890.2	3535.4	4179.1	4953.9
Age	< 30	4043.7	4006.6	4038.9	4383.1	4784.0	5115.8
	30–39	8807.0	9006.2	9211.3	10184.5	11249.1	12227.4
	40–49	3356.3	3369.6	3506.2	4241.5	5321.8	6110.2
	≥ 50	1243.0	1284.7	1399.1	2181.6	3306.1	4418.6

Indicator 3: **New HIV Diagnoses**		2010 Q2	Q3	2011 Q4	Q1	Q2	Q3	Q4	2012 Q1	Q2	Q3	Q4	2013 Q1	Q2	Q3	Q4	2014 Q1	Q2	Q3	Q4	2015 Q1
British Columbia	By Client Residence	81	78	68	54	82	87	65	70	55	52	60	49	80	80	58	63	75	64	60	69
	By Provider Address	*81*	*78*	*68*	*54*	*82*	*87*	*65*	*70*	*55*	*52*	*60*	*49*	*80*	*80*	*58*	*63*	*75*	*64*	*60*	*69*
Gender	Female	20	14	11	6	19	11	7	9	10	5	5	6	13	8	5	13	9	13	9	12
	Male	61	64	57	48	63	76	58	61	45	47	55	43	67	72	53	49	65	51	51	56
Age	< 30	20	22	9	5	18	17	18	18	14	8	18	9	18	23	15	17	15	13	18	16
	30–39	18	23	20	18	30	30	13	16	17	11	10	16	25	18	11	17	21	26	15	17
	40–49	29	19	24	18	22	22	19	20	11	19	19	12	14	21	20	14	14	7	14	11
	≥ 50	14	14	15	13	12	18	15	16	13	14	13	12	23	18	12	15	25	18	13	25
Exposure	MSM	36	45	33	33	43	56	38	42	34	37	36	29	46	45	38	35	45	34	–	–
	IDU	16	12	10	8	11	12	3	14	7	2	6	4	7	5	9	9	5	2	–	–
	HET	25	18	22	12	23	19	21	14	12	11	15	15	20	24	9	16	18	19	–	–
	Other	2	1	1	1	3	0	3	0	1	0	1	0	3	5	0	0	1	2	–	–
	NIR/Unknown	2	2	2	0	2	0	0	0	1	2	2	1	4	1	2	3	6	7	–	–
Fraser Health	By Client Residence	19	19	17	12	18	15	9	11	10	10	14	8	14	23	19	15	11	16	16	17
	By Provider Address	*15*	*13*	*15*	*10*	*20*	*9*	*8*	*10*	*5*	*7*	*8*	*9*	*8*	*14*	*15*	*11*	*10*	*12*	*13*	*10*
Interior Health	By Client Residence	1	3	3	1	4	3	3	5	5	0	2	1	4	4	4	3	4	4	6	3
	By Provider Address	*1*	*2*	*3*	*1*	*3*	*2*	*3*	*5*	*5*	*0*	*2*	*1*	*5*	*4*	*4*	*3*	*2*	*4*	*5*	*4*
Island Health	By Client Residence	13	8	6	5	2	7	7	6	3	5	12	4	9	10	7	6	4	7	8	4
	By Provider Address	*12*	*8*	*5*	*5*	*3*	*6*	*6*	*3*	*3*	*5*	*12*	*5*	*9*	*10*	*7*	*6*	*4*	*8*	*8*	*4*
Northern Health	By Client Residence	3	7	2	4	10	5	5	5	4	3	0	3	8	3	3	2	5	4	2	2
	By Provider Address	*3*	*6*	*2*	*4*	*9*	*5*	*6*	*5*	*4*	*3*	*0*	*3*	*8*	*3*	*3*	*2*	*5*	*3*	*2*	*1*
Vancouver Coastal Health	By Client Residence	45	41	40	32	48	57	41	43	33	33	32	31	45	40	25	37	49	33	28	43
	By Provider Address	*50*	*49*	*43*	*34*	*47*	*65*	*42*	*47*	*38*	*37*	*38*	*31*	*50*	*49*	*29*	*41*	*54*	*37*	*32*	*50*

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

	British Columbia					Female					Male					< 30 years					30–39 years					40–49 years				
	'10	'11	'12	'13	'14	'10	'11	'12	'13	'14	'10	'11	'12	'13	'14	'10	'11	'12	'13	'14	'10	'11	'12	'13	'14	'10	'11	'12	'13	'14
Stage 0	52	63	53	49	65	8	3	6	3	6	44	60	47	45	59	19	14	18	19	28	16	25	18	15	19	13	19	10	10	7
Stage 1	66	53	51	56	48	12	8	6	9	11	54	44	44	47	37	19	12	11	22	7	20	20	14	17	9	20	10	16	7	5
Stage 2a	33	39	28	45	35	5	7	5	6	4	28	32	23	39	31	7	11	4	12	2	14	12	4	13	4	9	11	11	10	7
Stage 2b	34	39	30	30	26	12	8	6	3	4	22	31	24	27	22	5	6	7	4	0	9	8	7	10	3	11	12	10	9	4
Stage 3	76	68	58	71	47	22	13	5	9	10	54	55	53	62	36	2	5	7	4	1	13	17	11	13	7	31	25	15	25	8
Unknown	35	26	16	15	40	2	4	1	1	10	33	21	15	14	30	11	6	7	1	23	13	10	3	4	33	10	5	2	4	26
Total	296	288	236	266	261	61	43	29	31	45	235	243	206	234	215	63	54	54	62	61	85	92	57	72	75	94	82	64	65	57

	≥ 50 years					MSM				IDU				Heterosexual				Other Exposure				NIR/Unknown			
	'10	'11	'12	'13	'14	'10	'11	'12	'13	'10	'11	'12	'13	'10	'11	'12	'13	'10	'11	'12	'13	'10	'11	'12	'13
Stage 0	4	5	7	5	11	37	51	42	37	6	5	4	7	8	7	7	4	0	0	0	1	1	0	0	0
Stage 1	7	11	10	10	6	33	32	33	36	13	8	6	4	20	13	11	12	0	0	1	1	0	0	0	3
Stage 2a	3	5	9	10	4	20	25	17	31	6	5	6	5	7	7	5	7	0	2	0	2	0	0	0	0
Stage 2b	9	13	6	7	8	15	20	16	22	5	3	6	0	12	15	8	8	2	1	0	0	0	0	0	0
Stage 3	30	21	25	29	6	25	27	30	27	18	7	6	5	28	31	20	32	3	3	0	2	2	0	2	5
Unknown	1	5	4	6	37	22	15	10	4	4	6	1	4	7	2	1	4	1	1	1	3	1	2	3	0
Total	54	60	61	67	72	152	170	148	157	52	34	29	25	82	75	52	67	6	7	2	9	4	2	5	8

Indicator 5: **HIV Cascade of Care**			DIAGNOSED	LINKED	RETAINED	ON ART	ADHERENT	SUPPRESSED
British Columbia			9763	8812	7459	6952	6389	5471
Age Category	< 30		483	331	277	248	210	179
	30–39		1321	1183	1002	888	778	653
	40–49		2762	2536	2125	1991	1815	1500
	≥ 50		5189	4762	4055	3825	3586	3139
Age Category and MSM Status	MSM	< 30	107	98	83	73	62	58
		30–39	356	336	286	258	226	202
		40–49	758	740	680	646	605	530
		≥ 50	1923	1868	1736	1662	1577	1458
	Non-MSM	< 30	52	50	45	36	30	26
		30–39	373	356	323	292	251	181
		40–49	908	871	799	746	653	485
		≥ 50	1438	1386	1279	1200	1099	881
	Unknown	< 30	323	183	149	139	118	95
		30–39	592	492	392	338	301	270
		40–49	1097	925	647	599	557	485
		≥ 50	1829	1508	1040	963	910	800
Gender	Male		7994	7269	6155	5766	5340	4633
	Female		1770	1543	1304	1186	1049	838
Injection Drug Use	IDU		2557	2465	2290	2143	1904	1482
	Non-IDU		4303	4162	3822	3618	3383	3016
	Unknown		2903	2185	1347	1191	1102	973
MSM Status	MSM		3144	3041	2785	2639	2470	2248
	Non-MSM		2771	2663	2446	2274	2033	1573
	Unknown		3849	3108	2228	2039	1886	1650
Health Authority	Fraser Health		2034	1939	1777	1672	1514	1310
	Interior Health		574	553	459	430	399	327
	Island Health		944	907	846	805	712	570
	Northern Health		280	263	238	217	195	112
	Vancouver Coastal Health		4686	4486	4034	3828	3569	3152

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

	2013 Q2	Q3	Q4	2014 Q1	Q2	Q3	Q4	2015 Q1
< 3 CD4 Tests	18.3%	17.7%	18.1%	21.8%	25.1%	22.6%	21.3%	19.8%
< 3 Viral Load Tests	8.5%	9.1%	8.2%	8.3%	7.7%	6.5%	6.2%	7.5%
No Baseline Genotype	5.0%	5.5%	4.8%	3.6%	3.4%	3.5%	2.2%	3.6%
Baseline CD4 < 200 cells/μL	20.7%	21.1%	20.4%	21.8%	24.0%	25.3%	24.1%	22.8%
Non-Recommended ART	2.8%	6.2%	9.2%	10.5%	11.1%	7.5%	3.6%	2.2%
Non Viral suppression at 9 Mo.	37.5%	37.6%	35.2%	35.8%	36.3%	33.4%	30.8%	27.9%
PCS Score: 0	205	176	160	139	121	141	159	171
PCS Score: 1	136	130	135	123	129	133	111	112
PCS Score: 2	72	71	62	68	65	67	62	46
PCS Score: 3	40	32	26	24	24	22	20	23
PCS Score: 4 or more	6	9	9	9	11	8	5	7
Total (n=)	**459**	**418**	**392**	**363**	**350**	**371**	**357**	**359**

Indicator 7: **New DTP ARV Participants**

First Starts	92	112	75	106	89	78	78	89
Experienced Starts	111	114	127	116	133	137	113	136

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

	2013 Q2	Q3	Q4	2014 Q1	Q2	Q3	Q4	2015 Q1
CD4 ≥ 500	35	31	29	34	39	29	29	31
CD4 350–499	16	20	18	20	20	15	14	16
CD4 200–349	18	28	15	30	11	12	15	21
CD4 50–199	13	23	11	13	16	13	12	13
CD4 < 50	8	9	1	8	2	8	6	4
CD4 Median (cells/μL)	*381*	*300*	*430*	*360*	*480*	*410*	*401*	*390*
Total (n=)	**90**	**111**	**74**	**105**	**88**	**77**	**76**	**85**

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

Active DTP Participants	6577	6648	6721	6810	6896	6948	6995	7066
Inactive DTP Participants	1094	1109	1111	1117	1123	1139	1161	1161

Indicator 10: **Antiretroviral Adherence**

≥ 95%	88	63	68	76	70	92	81	79
80% to < 95%	20	24	13	12	13	15	14	14
40% to < 80%	9	8	10	8	10	13	7	13
< 40%	1	1	2	1	1	1	0	1
Total (n=)	**118**	**96**	**93**	**97**	**94**	**121**	**102**	**107**

Indicator 11: **Resistance Testing and Results**

Suppressed	4582	4665	4505	4968	4906	5090	4920	5244
Wild Type	903	869	822	761	718	681	615	686
Never Genotyped	69	76	50	53	54	45	41	48
1-Class	192	166	170	150	148	146	141	150
2-Class	50	38	33	27	26	24	27	32
3-Class	10	13	8	5	7	7	3	8
Total (n=)	**5806**	**5827**	**5588**	**5964**	**5859**	**5993**	**5747**	**6168**

Indicator 12: **AIDS-Defining Illness**		2007	2008	2009	2010	2011	2012	2013	2014
CD4 < 200 at ART initiation	Cases	224	194	155	138	115	95	90	84
	Rate per 100,000	*5.2*	*4.5*	*3.5*	*3.1*	*2.6*	*2.1*	*2.0*	*1.8*
AIDS Cases (DTP Reports)	Cases	134	130	110	103	81	67	68	48
	Rate per 100,000	*3.1*	*3.0*	*2.5*	*2.3*	*1.8*	*1.5*	*1.5*	*1.0*
AIDS Cases (BCCDC Reports)	Cases	143	142	126	112	95	74	68	–
	Rate per 100,000	*3.3*	*3.3*	*2.9*	*2.5*	*2.1*	*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