BRITISH COLUMBIA
CENTRE *for* EXCELLENCE
in HIV/AIDS

HIV MONITORING QUARTERLY REPORT

FOR VANCOUVER COASTAL HEALTH

THIRD QUARTER 2016

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

First Nations Health Authority
Health through wellness

fraserhealth

Interior Health
Every person matters

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, BC Vital Statistics, 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

Table of Contents

Acknowledgements and Contributions

BRITISH COLUMBIA
CENTRE *for* EXCELLENCE
in HIV/AIDS

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 is responsible for compiling and publishing this report. Lilith Swetland is the editor of this 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. Olga Mazo, 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

Dr. Rolando Barrios, *Chair*, BC-CFE

Dr. Kate Heath, BC-CFE

Dr. Bohdan Nosyk, BC-CFE

Dr. Viviane Dias Lima, BC-CFE

Irene Day, BC-CFE

Dr. Jean Shoveller, BC-CFE

Dr. Jason Wong, BCCDC

Dr. Mel Krajden, BCCDC

Salman Klar, FHA

Jennifer May-Hadford, IHA

Kari Harder, NHA

Dr. Neora Pick, PHSA

Dr. Reka Gustafson, VCHA

Dr. Melanie Rusch, VIHA

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.

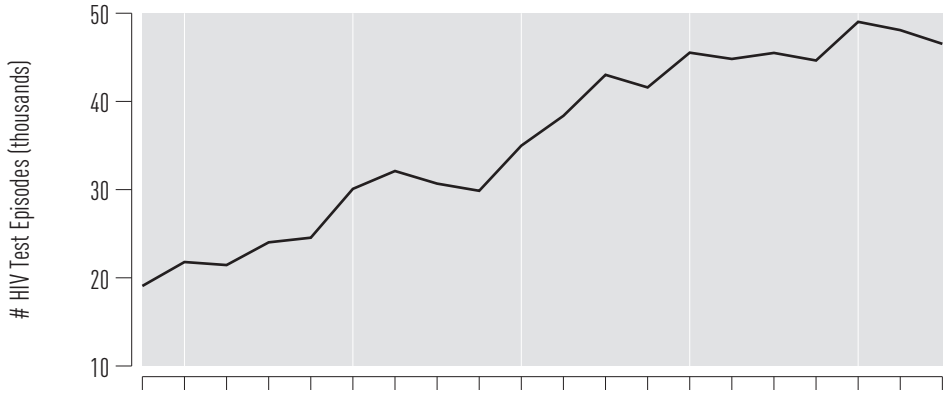
The goals of HA-led STOP-funded initiatives are to work toward achieving these goals. To these ends some outcome measures or indicators of progress have been drafted that should be considered in the design and implementation phases of these initiatives.

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.

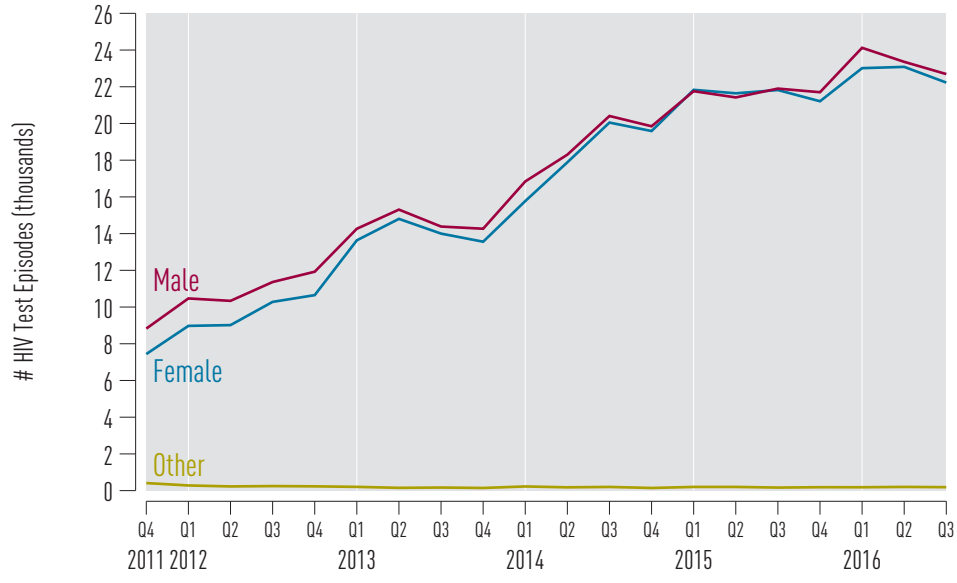
Indicator 1. HIV Testing Episodes

Figure 1.1 HIV Test Episodes for Vancouver Coastal Health, 2011 Q4–2016 Q3



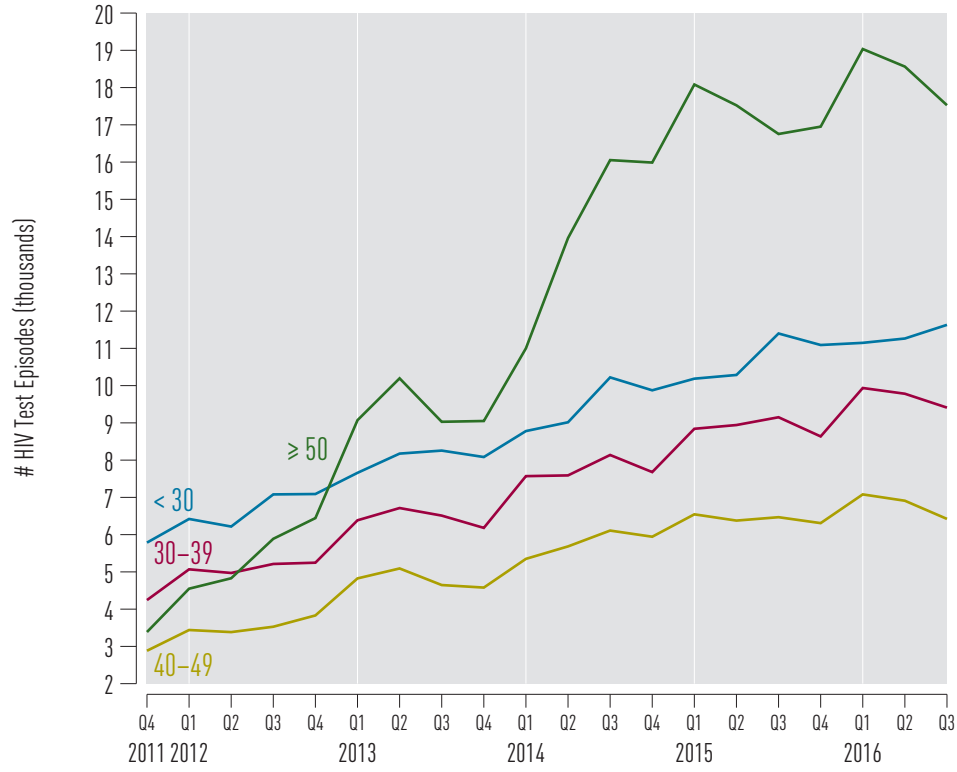
	Q4 2011	Q1 2012	Q2	Q3	Q4	Q1 2013	Q2	Q3	Q4	Q1 2014	Q2	Q3	Q4	Q1 2015	Q2	Q3	Q4	Q1 2016	Q2	Q3
Vancouver Coastal Health	19.1	21.8	21.4	24.0	24.5	30.1	32.1	30.7	29.9	35.0	38.4	43.0	41.6	45.5	44.8	45.5	44.6	49.0	48.1	46.5

Figure 1.2 HIV Test Episodes by Gender for Vancouver Coastal Health [1]



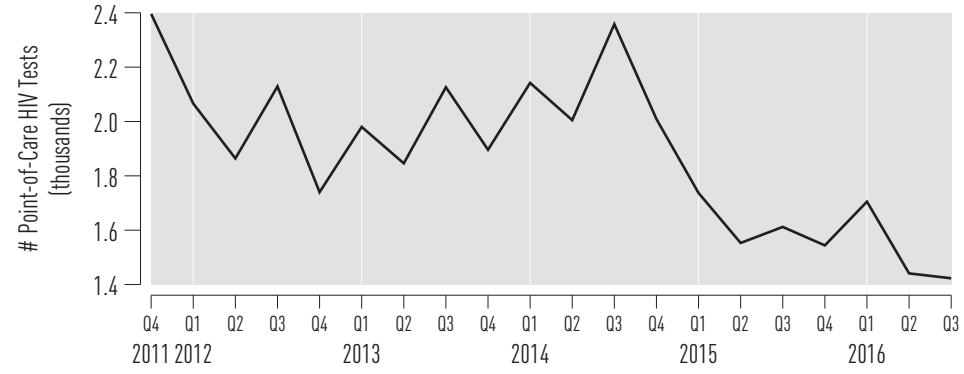
	Q4 2011	Q1 2012	Q2	Q3	Q4	Q1 2013	Q2	Q3	Q4	Q1 2014	Q2	Q3	Q4	Q1 2015	Q2	Q3	Q4	Q1 2016	Q2	Q3
Female	7.4	9.0	9.0	10.3	10.6	13.6	14.8	14.0	13.6	15.8	17.9	20.0	19.6	21.8	21.6	21.8	21.2	23.0	23.1	22.2
Male	8.8	10.5	10.3	11.4	11.9	14.3	15.3	14.4	14.3	16.8	18.3	20.4	19.8	21.8	21.4	21.9	21.7	24.1	23.4	22.7
Other	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2

Figure 1.3 HIV Test Episodes by Age Category for Vancouver Coastal Health [1,2]



< 30	5.8	6.4	6.2	7.1	7.1	7.7	8.2	8.3	8.1	8.8	9.0	10.2	9.9	10.2	10.3	11.4	11.1	11.1	11.3	11.6
30–39	4.2	5.1	5.0	5.2	5.2	6.4	6.7	6.5	6.2	7.6	7.6	8.1	7.7	8.8	8.9	9.2	8.6	9.9	9.8	9.4
40–49	2.9	3.4	3.4	3.5	3.8	4.8	5.1	4.6	4.6	5.3	5.7	6.1	5.9	6.5	6.4	6.5	6.3	7.1	6.9	6.4
≥ 50	3.4	4.5	4.8	5.9	6.4	9.1	10.2	9.0	9.1	11.0	14.0	16.1	16.0	18.1	17.5	16.8	17.0	19.0	18.6	17.5

Figure 1.4 Point-of-Care HIV Tests for Vancouver Coastal Health



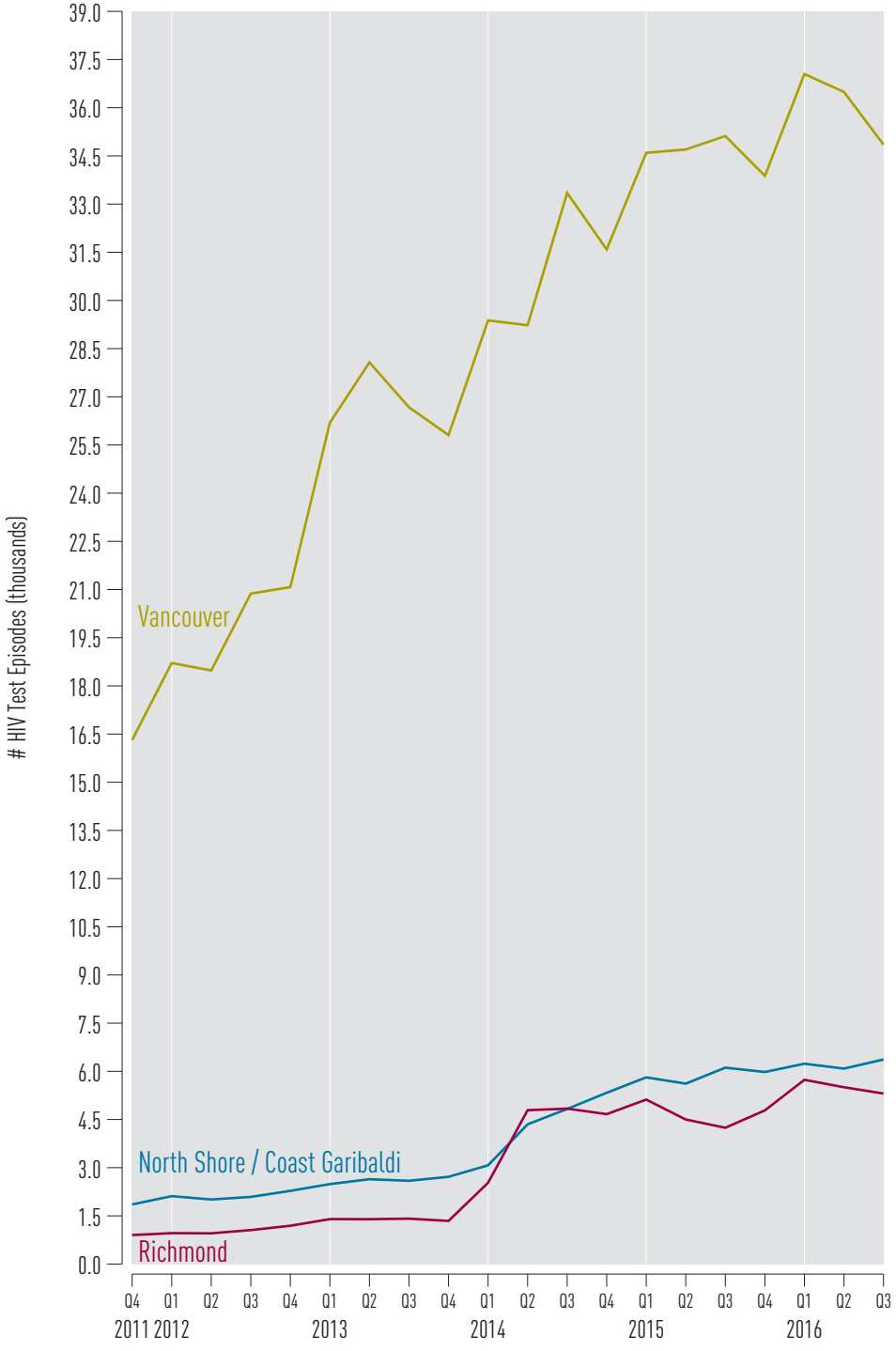
Vancouver Coastal Health	2.4	2.1	1.9	2.1	1.7	2.0	1.8	2.1	1.9	2.1	2.0	2.4	2.0	1.7	1.6	1.6	1.5	1.7	1.4	1.4

1 *Data Source: The BC Public Health Microbiology and Reference Laboratory (BCPHMRL) courtesy of the BC Centre for Disease Control (BCCDC).*

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

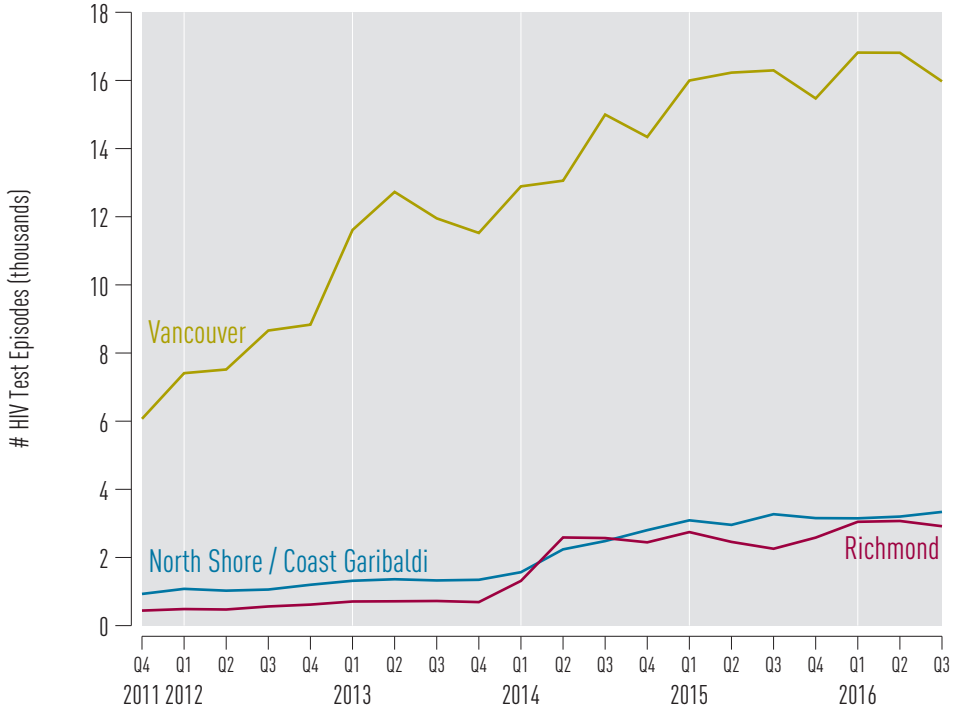
2 *Testing does not include point of care tests.*

Figure 1.5 HIV Test Episodes for Vancouver Coastal Health by HSDA, 2011 Q4–2016 Q3 [1]



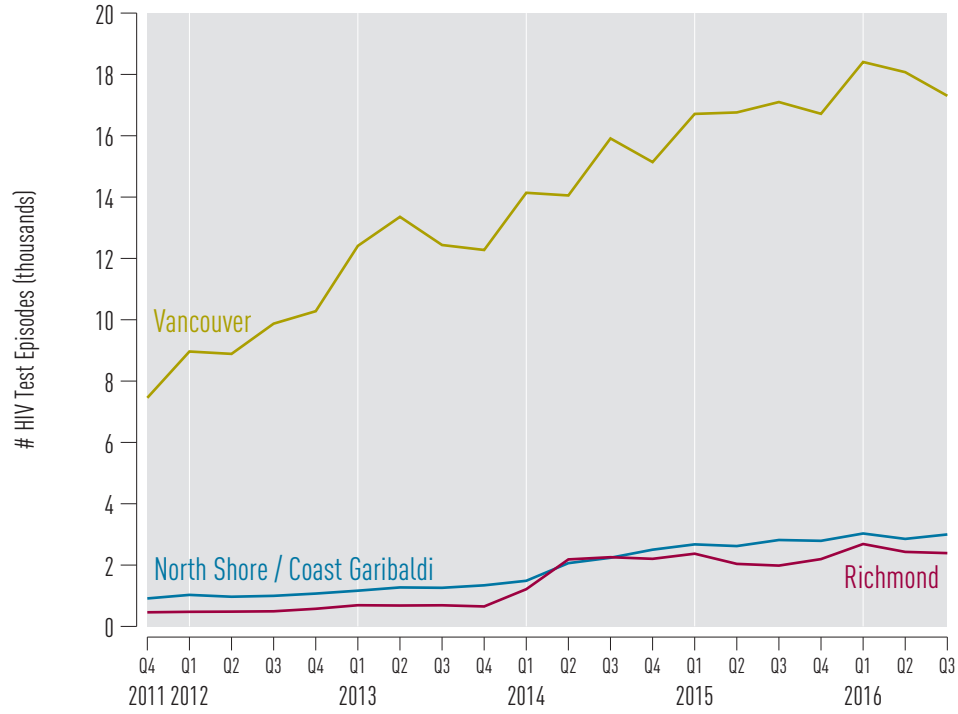
	Q4 2011	Q1 2012	Q2 2012	Q3 2012	Q4 2012	Q1 2013	Q2 2013	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Q3 2016
North Shore / Coast Garibaldi	1.9	2.1	2.0	2.1	2.3	2.5	2.6	2.6	2.7	3.1	4.3	4.8	5.3	5.8	5.6	6.1	6.0	6.2	6.1	6.4
Richmond	0.9	1.0	1.0	1.1	1.2	1.4	1.4	1.4	1.3	2.5	4.8	4.8	4.7	5.1	4.5	4.2	4.8	5.7	5.5	5.3
Vancouver	16.3	18.7	18.5	20.9	21.1	26.2	28.1	26.7	25.8	29.4	29.2	33.3	31.6	34.6	34.7	35.1	33.9	37.0	36.5	34.9

Figure 1.6 HIV Test Episodes for Non-prenatal Females in Vancouver Coastal Health by HSDA [1]



North Shore / Coast Garibaldi	0.9	1.1	1.0	1.1	1.2	1.3	1.4	1.3	1.3	1.6	2.2	2.5	2.8	3.1	3.0	3.3	3.2	3.1	3.2	3.3
Richmond	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	1.3	2.6	2.6	2.4	2.7	2.5	2.3	2.6	3.0	3.1	2.9
Vancouver	6.1	7.4	7.5	8.7	8.8	11.6	12.7	12.0	11.5	12.9	13.1	15.0	14.3	16.0	16.2	16.3	15.5	16.8	16.8	16.0

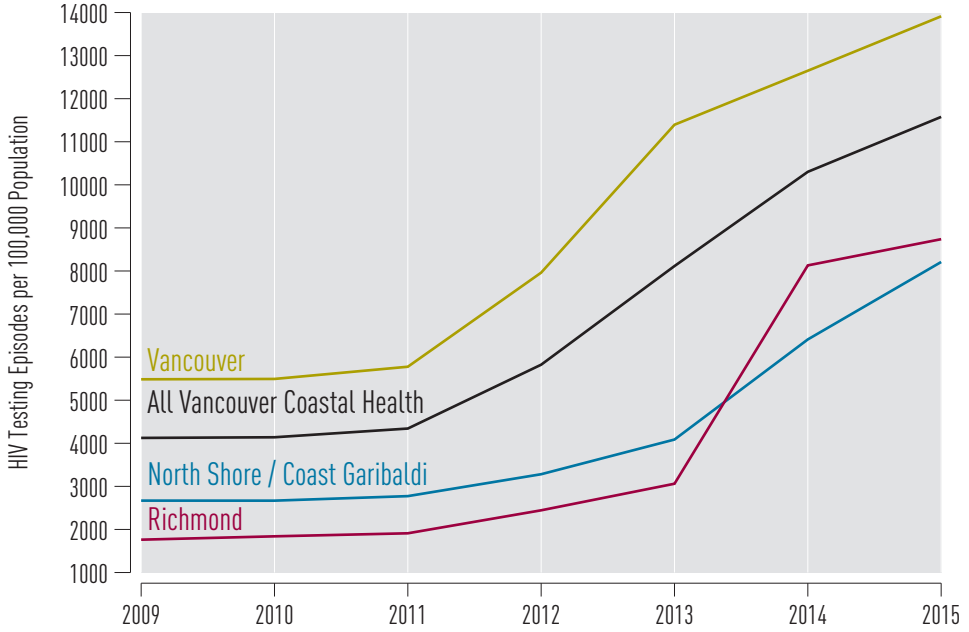
Figure 1.7 HIV Test Episodes for Males in Vancouver Coastal Health by HSDA [1]



North Shore / Coast Garibaldi	0.9	1.0	1.0	1.0	1.1	1.2	1.3	1.3	1.3	1.5	2.1	2.2	2.5	2.7	2.6	2.8	2.8	3.0	2.9	3.0
Richmond	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.7	0.7	1.2	2.2	2.3	2.2	2.4	2.0	2.0	2.2	2.7	2.4	2.4
Vancouver	7.5	9.0	8.9	9.9	10.3	12.4	13.4	12.4	12.3	14.1	14.1	15.9	15.1	16.7	16.8	17.1	16.7	18.4	18.1	17.3

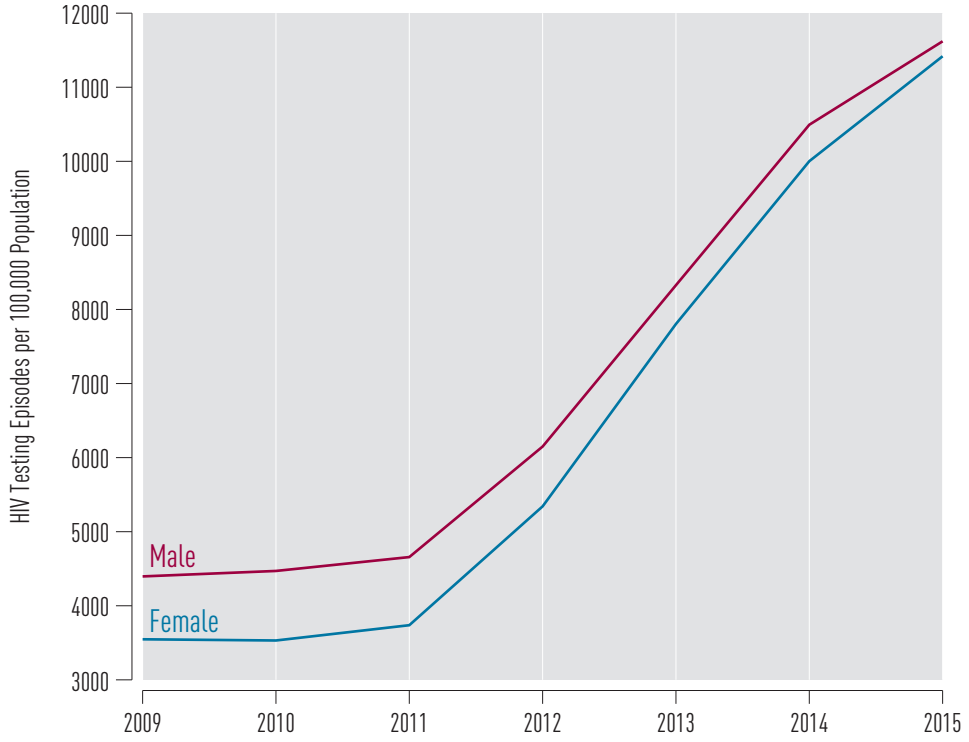
Indicator 2. HIV Testing Rates

Figure 2.1 Rate of HIV Testing for Vancouver Coastal Health and HSDAs [2]



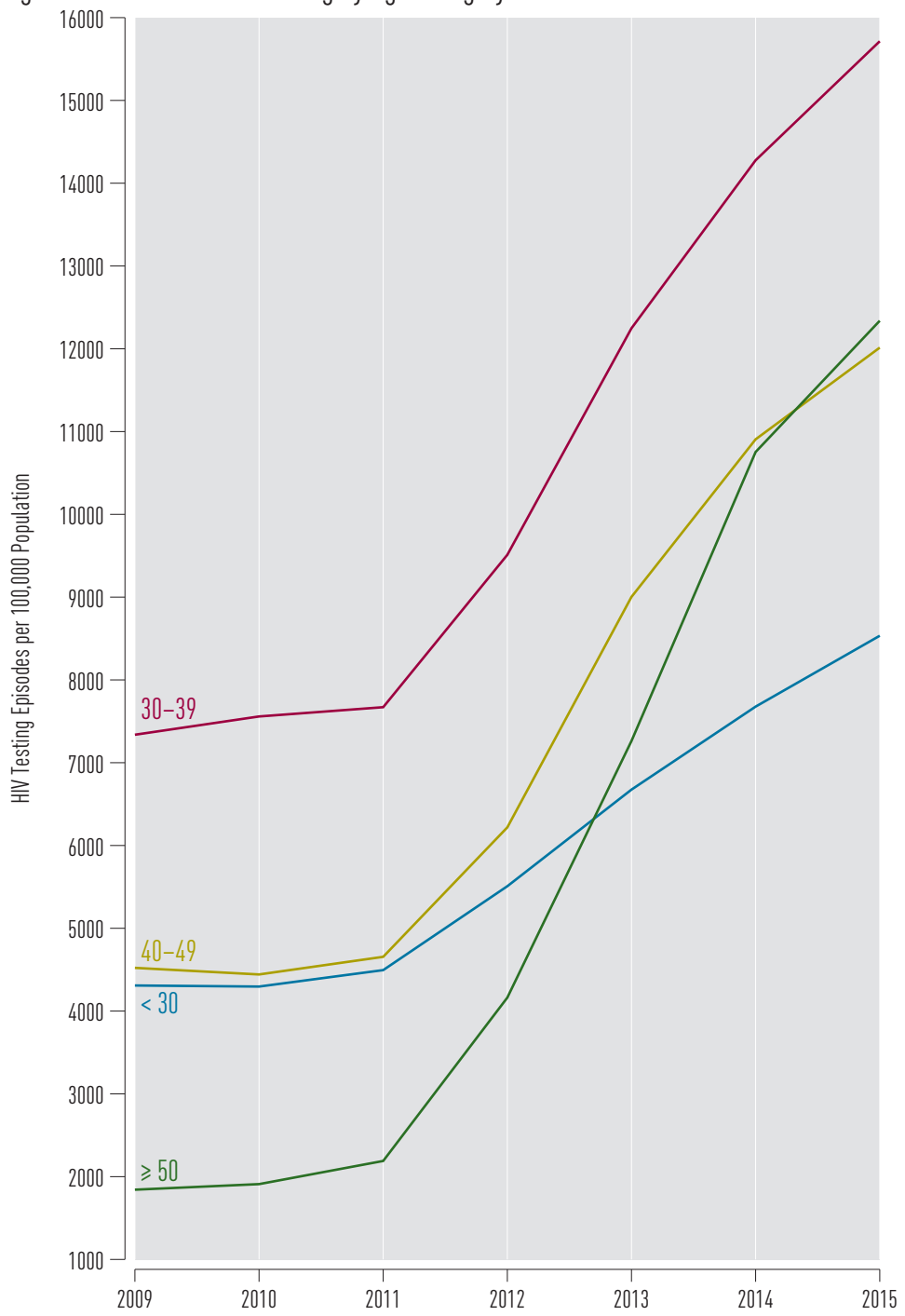
All Vancouver Coastal Health	4124.7	4139.9	4342.3	5824.7	8114.3	10302.2	11577.1
North Shore / Coast Garibaldi	2669.2	2668.3	2773.5	3282.0	4087.2	6411.3	8208.8
Richmond	1762.3	1840.3	1910.7	2444.4	3061.2	8130.1	8738.5
Vancouver	5485.5	5493.9	5777.2	7961.7	11395.3	12648.9	13911.9

Figure 2.2 Rate of HIV Testing by Gender for Vancouver Coastal Health [2]



Female	3547.4	3531.2	3737.6	5342.0	7804.3	10001.5	11418.5
Male	4396.2	4470.0	4657.3	6149.6	8327.9	10493.6	11620.3

Figure 2.3 Rate of HIV Testing by Age Category for Vancouver Coastal Health [2]



< 30	4309.0	4296.1	4494.8	5508.2	6675.1	7677.6	8533.6
30–39	7337.9	7558.7	7670.6	9511.2	12247.6	14276.9	15714.7
40–49	4521.9	4442.3	4655.3	6219.0	9002.8	10906.4	12013.8
≥ 50	1842.4	1909.7	2189.5	4162.6	7262.4	10753.4	12338.5

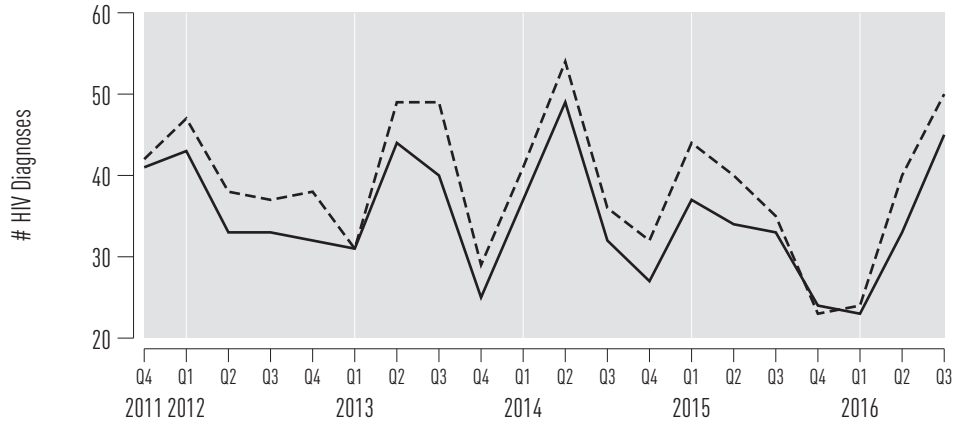
2 *Testing does not include point of care tests.*

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.

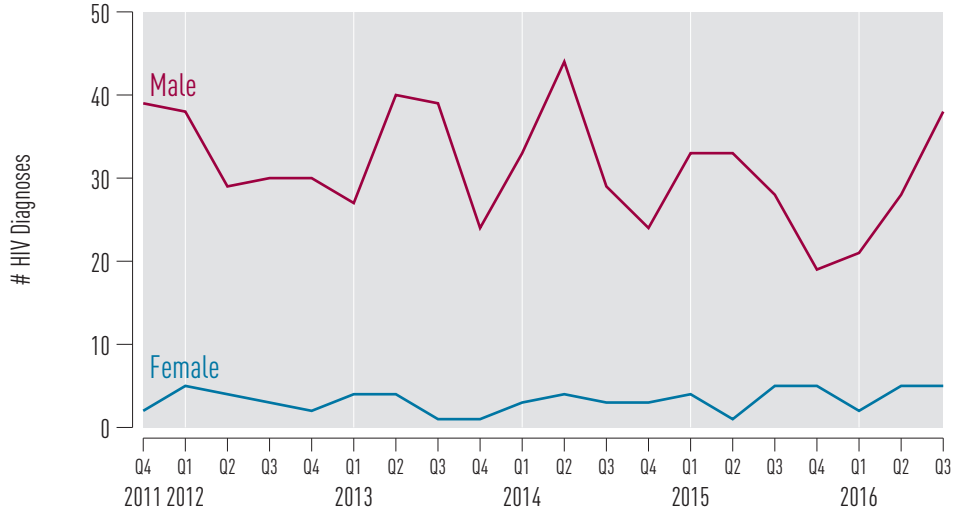
Indicator 3. New HIV Diagnoses

Figure 3.1 New HIV Diagnoses for Vancouver Coastal Health [3]



Vancouver Coastal Health	41	43	33	33	32	31	44	40	25	37	49	32	27	37	34	33	24	23	33	45
By Provider Address	*42*	*47*	*38*	*37*	*38*	*31*	*49*	*49*	*29*	*41*	*54*	*36*	*32*	*44*	*40*	*35*	*23*	*24*	*40*	*50*

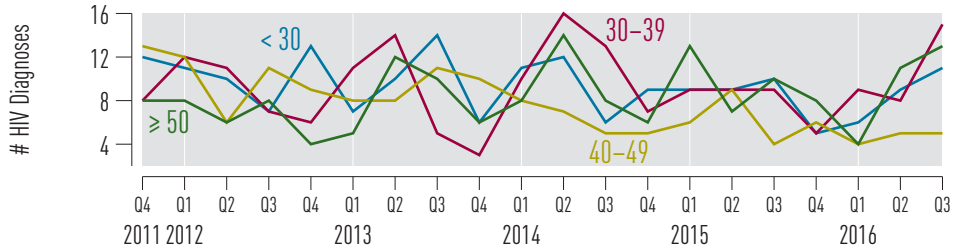
Figure 3.2 New HIV Diagnoses for Vancouver Coastal Health by Gender [3]



Female	2	5	4	3	2	4	4	1	1	3	4	3	3	4	1	5	5	2	5	5
Male	39	38	29	30	30	27	40	39	24	33	44	29	24	33	33	28	19	21	28	38

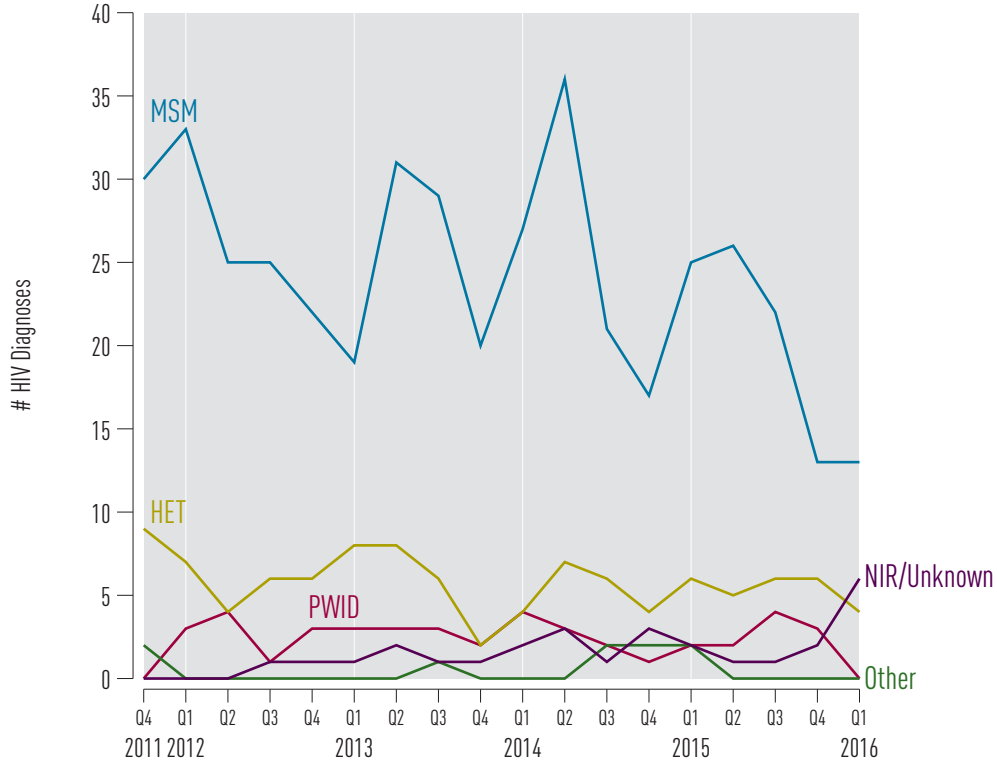
3 *Data Source: BCCDC. When present, "By Provider Address" is graphed as dashed line in same colour.*

Figure 3.3 New HIV Diagnoses for Vancouver Coastal Health by Age Category [3]



< 30	12	11	10	7	13	7	10	14	6	11	12	6	9	9	9	10	5	6	9	11
30–39	8	12	11	7	6	11	14	5	3	10	16	13	7	9	9	9	5	9	8	15
40–49	13	12	6	11	9	8	8	11	10	8	7	5	5	6	9	4	6	4	5	5
≥ 50	8	8	6	8	4	5	12	10	6	8	14	8	6	13	7	10	8	4	11	13

Figure 3.4 New HIV Diagnoses for Vancouver Coastal Health by Exposure Category [3,4]

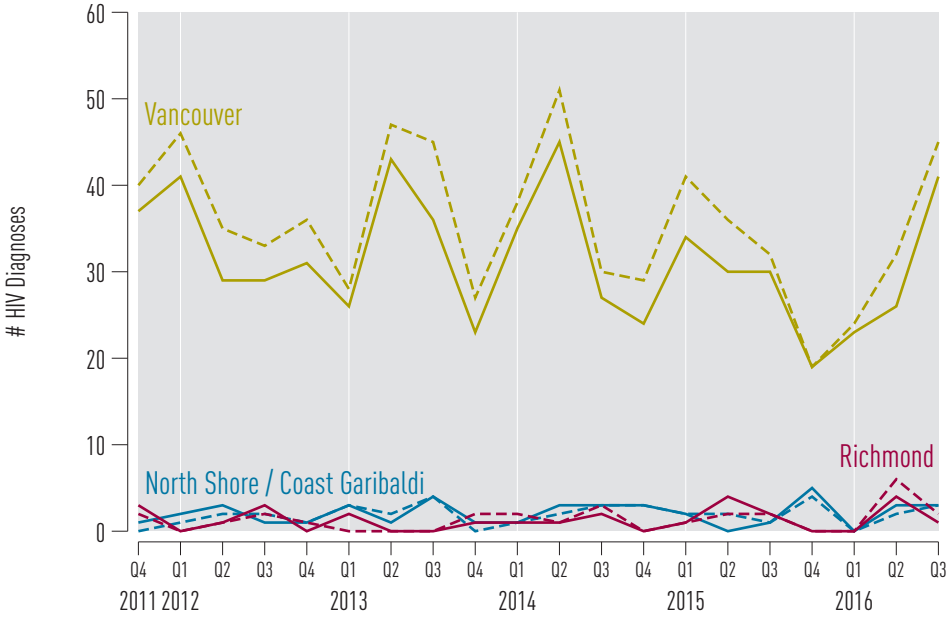


MSM (men who have sex with men)	30	33	25	25	22	19	31	29	20	27	36	21	17	25	26	22	13	13
PWID (persons who inject drugs)	0	3	4	1	3	3	3	3	2	4	3	2	1	2	2	4	3	0
HET (heterosexual)	9	7	4	6	6	8	8	6	2	4	7	6	4	6	5	6	6	4
Other (other exposure identified)	2	0	0	0	0	0	0	1	0	0	0	2	2	2	0	0	0	0
NIR/Unknown (no identified exposure)	0	0	0	1	1	1	2	1	1	2	3	1	3	2	1	1	2	6

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 Vancouver Coastal Health by HSDA [3]



North Shore / Coast Garibaldi	1	2	3	1	1	3	1	4	1	1	3	3	3	2	0	1	5	0	3	3
By Provider Address	*0*	*1*	*2*	*2*	*1*	*3*	*2*	*4*	*0*	*1*	*2*	*3*	*3*	*2*	*2*	*1*	*4*	*0*	*2*	*3*
Richmond	3	0	1	3	0	2	0	0	1	1	1	2	0	1	4	2	0	0	4	1
By Provider Address	*2*	*0*	*1*	*2*	*1*	*0*	*0*	*0*	*2*	*2*	*1*	*3*	*0*	*1*	*2*	*2*	*0*	*0*	*6*	*2*
Vancouver	37	41	29	29	31	26	43	36	23	35	45	27	24	34	30	30	19	23	26	41
By Provider Address	*40*	*46*	*35*	*33*	*36*	*28*	*47*	*45*	*27*	*38*	*51*	*30*	*29*	*41*	*36*	*32*	*19*	*24*	*32*	*45*

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 Vancouver Coastal Health, 2011–2015 [5]

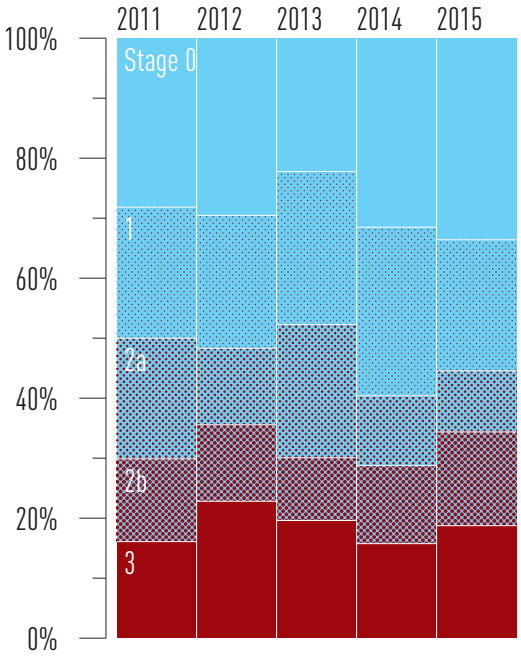
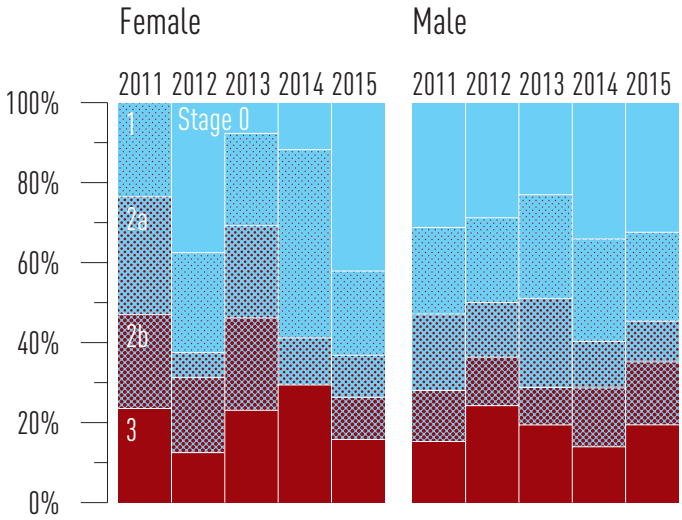


Figure 4.2 Stage of HIV Infection at Diagnosis by Gender for Vancouver Coastal Health, 2011–2015 [5]



	Vancouver Coastal					*Female*					*Male*				
	'11	'12	'13	'14	'15	'11	'12	'13	'14	'15	'11	'12	'13	'14	'15
Stage 0	49	44	34	46	43	0	6	1	2	8	49	38	32	44	35
Stage 1	38	33	39	41	28	4	4	3	8	4	34	28	36	33	24
Stage 2a	35	19	34	17	13	5	1	3	2	2	30	18	31	15	11
Stage 2b	24	19	16	19	20	4	3	3	0	2	20	16	13	19	17
Stage 3	28	34	30	23	24	4	2	3	5	3	24	32	27	18	21
Unknown	13	8	4	12	11	0	1	0	1	0	12	7	4	11	11
Total *(n=)*	187	157	157	158	139	17	17	13	18	19	169	139	143	140	119

5 *Data Source: BCCDC*

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

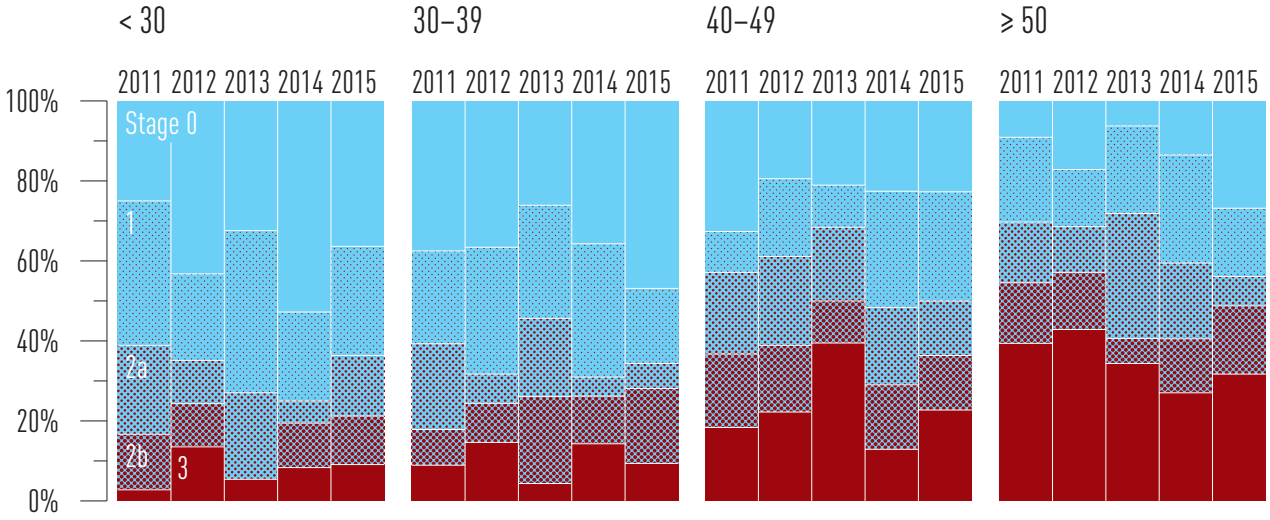
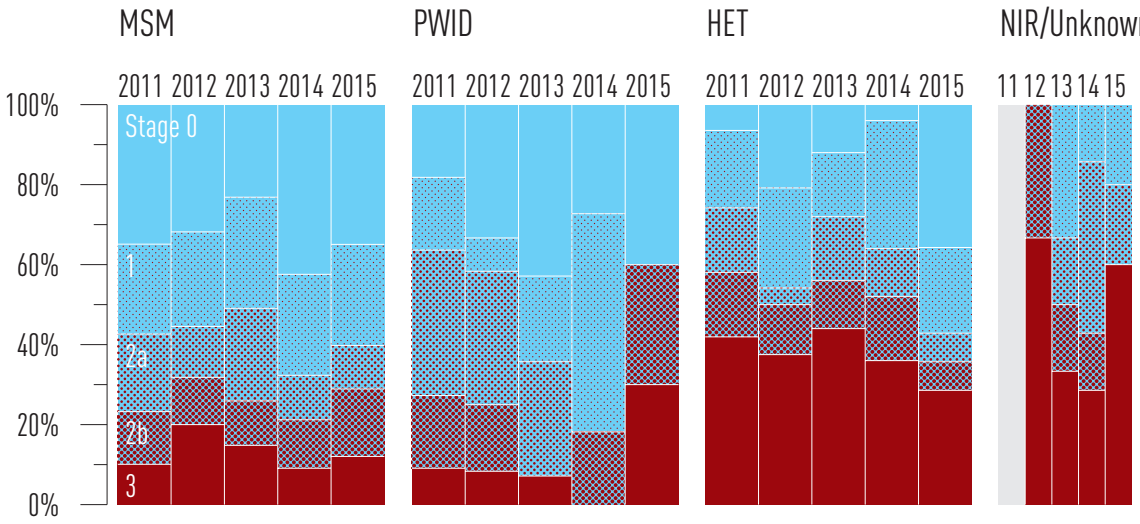


Figure 4.4 Stage of HIV Infection at Diagnosis by Exposure Category for Vancouver Coastal Health, 2011–2015 [5,6]



	< 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	15	11	12	13	14	15	11	12	13	14	15	11	12	13	14	15	11	12	13	14	15
Stage 0	9	16	12	19	12	21	15	12	15	15	16	7	8	7	5	3	6	2	5	11	45	35	25	42	29	2	4	6	3	4	2	5	3	1	10	0	0	0	0	0	0	0	0	0	0
Stage 1	13	8	15	8	9	13	13	13	14	6	5	7	4	9	6	7	5	7	10	7	29	26	30	25	21	2	1	3	6	0	6	6	4	8	6	1	0	0	1	0	0	0	2	1	1
Stage 2a	8	4	8	2	5	12	3	9	2	2	10	8	7	6	3	5	4	10	7	3	25	14	25	11	9	4	4	4	0	0	5	1	4	3	2	1	0	0	0	1	0	0	1	3	1
Stage 2b	5	4	0	4	4	5	4	10	5	6	9	6	4	5	3	5	5	2	5	7	17	13	12	12	14	2	2	0	2	3	5	3	3	4	2	0	0	0	0	1	0	1	1	1	0
Stage 3	1	5	2	3	3	5	6	2	6	3	9	8	15	4	5	13	15	11	10	13	13	22	16	9	10	1	1	1	0	3	13	9	11	9	8	1	0	0	3	0	0	2	2	2	3
Unknown	3	5	0	2	1	4	2	1	6	3	2	0	0	2	4	4	1	3	2	3	9	7	3	9	7	2	0	0	0	0	1	1	0	1	1	1	0	1	0	0	0	0	0	2	3
Total *(n=)*	39	42	37	38	34	60	43	47	48	35	51	36	38	33	26	37	36	35	39	44	138	117	111	108	90	13	12	14	11	10	32	25	25	26	29	4	0	1	4	2	0	3	6	9	8

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 Q4–2016 Q3 in Vancouver Coastal Health and stratified by sex and age.

Figure 5.1 Estimated Cascade of Care for Vancouver Coastal Health, Year Ending 2016 Q3 [7]

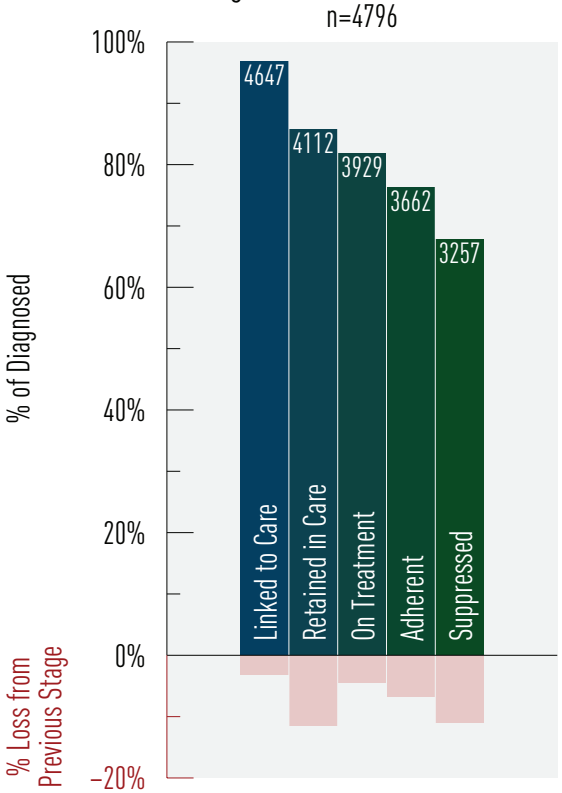
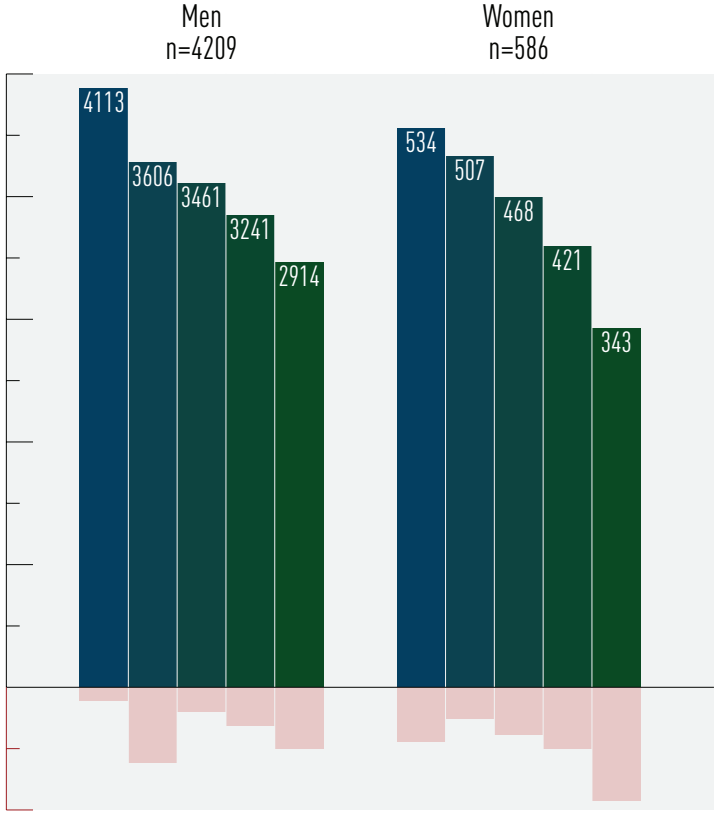


Figure 5.2 Estimated Cascade of Care for Vancouver Coastal Health by Gender, Year Ending 2016 Q3 [7]

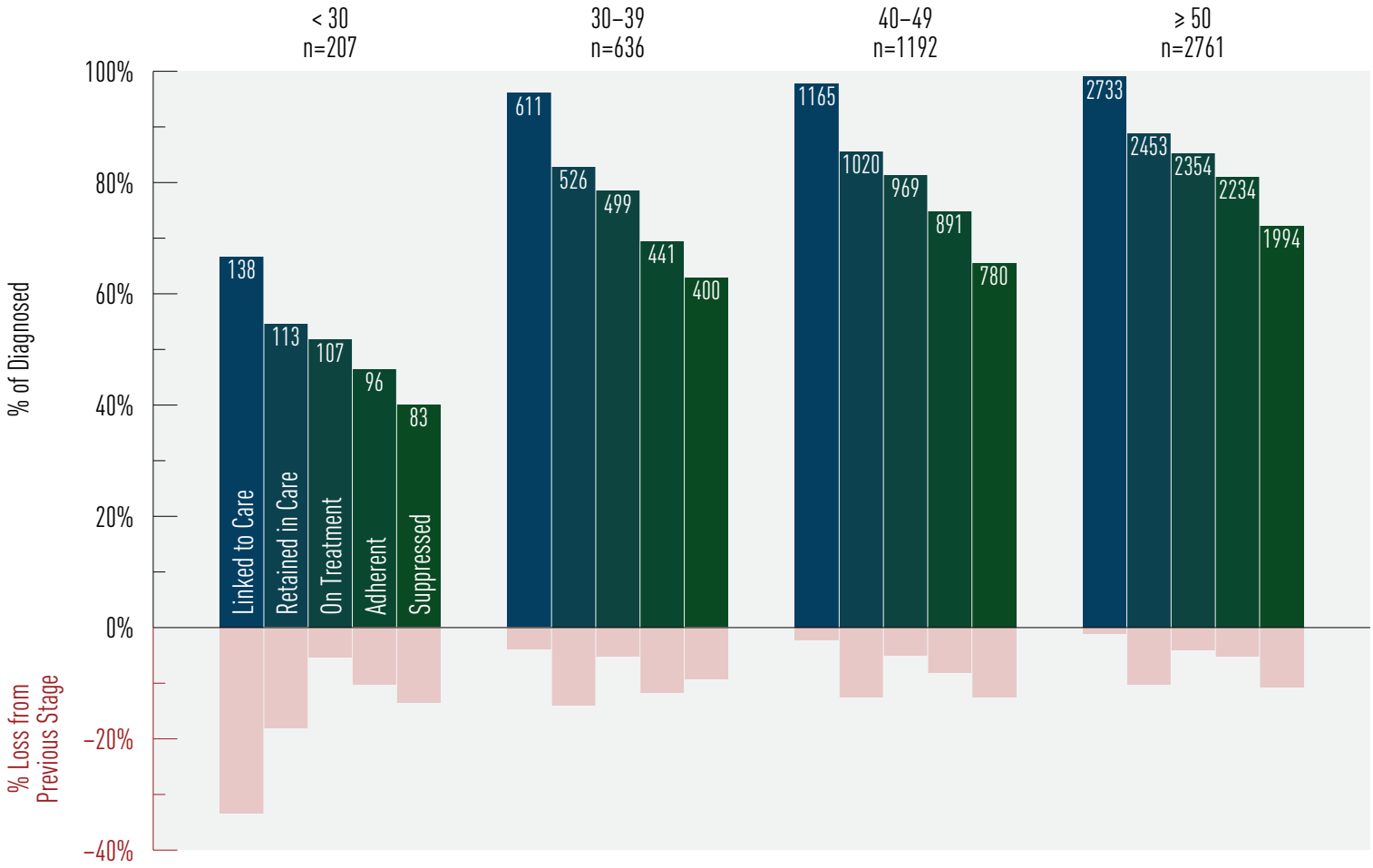


7 *Data is for the period 2015 Q4–2016 Q3.*
Data Sources:
i British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).
ii Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).

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.

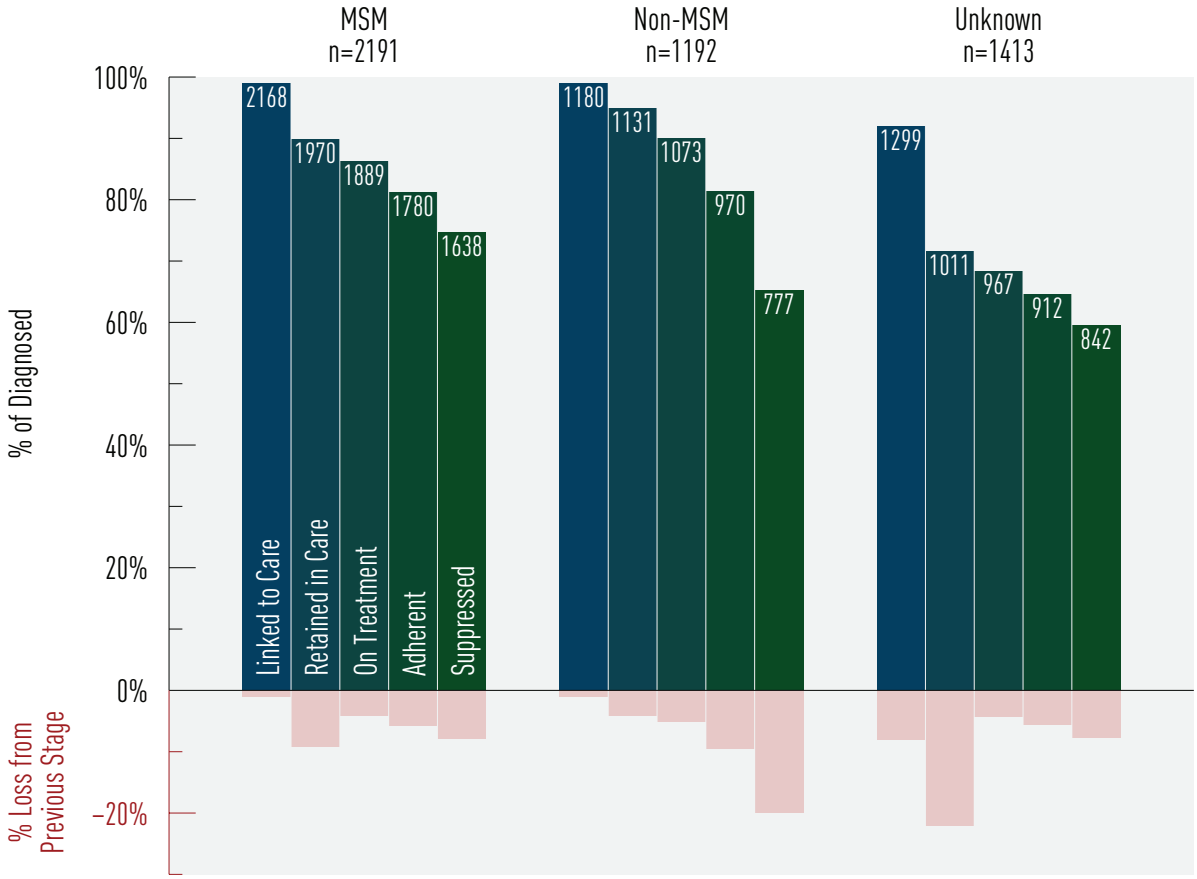
Figure 5.3 Estimated Cascade of Care for Vancouver Coastal Health by Age Category, Year Ending 2016 Q3 [8]



8 *Data is for the period 2015 Q4–2016 Q3.*
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.

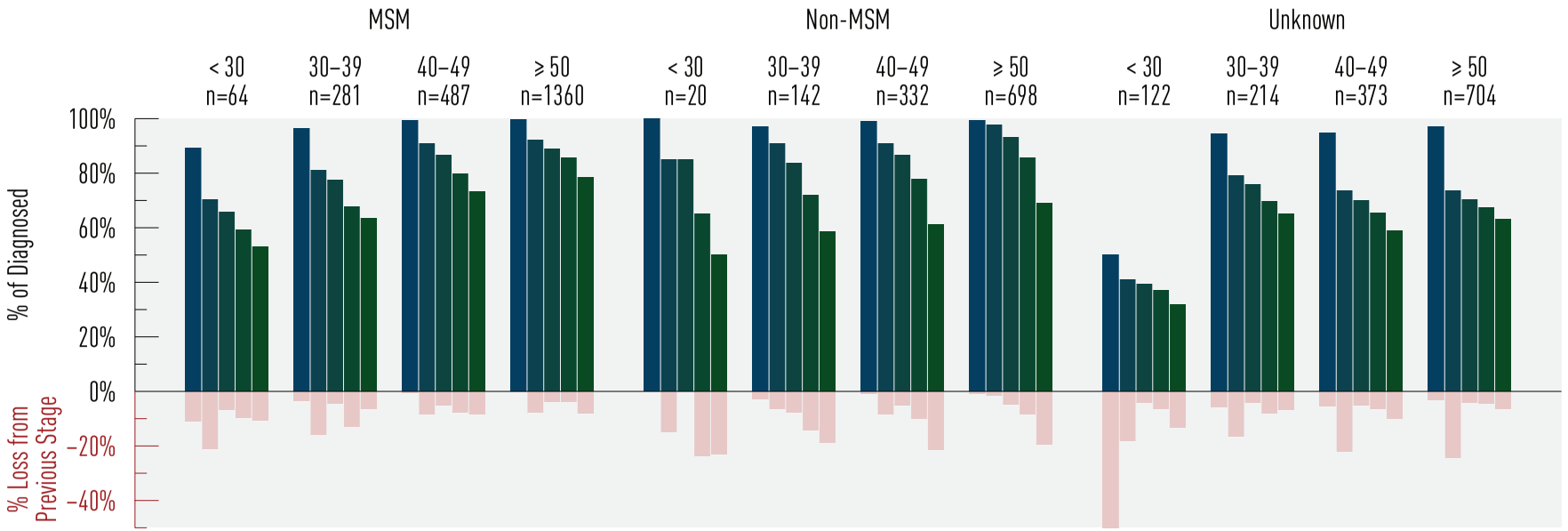
Figure 5.4 Estimated Cascade of Care for Vancouver Coastal Health by MSM Status, Year Ending 2016 Q3 [9]



9 *Data is for the period 2015 Q4–2016 Q3.*
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.

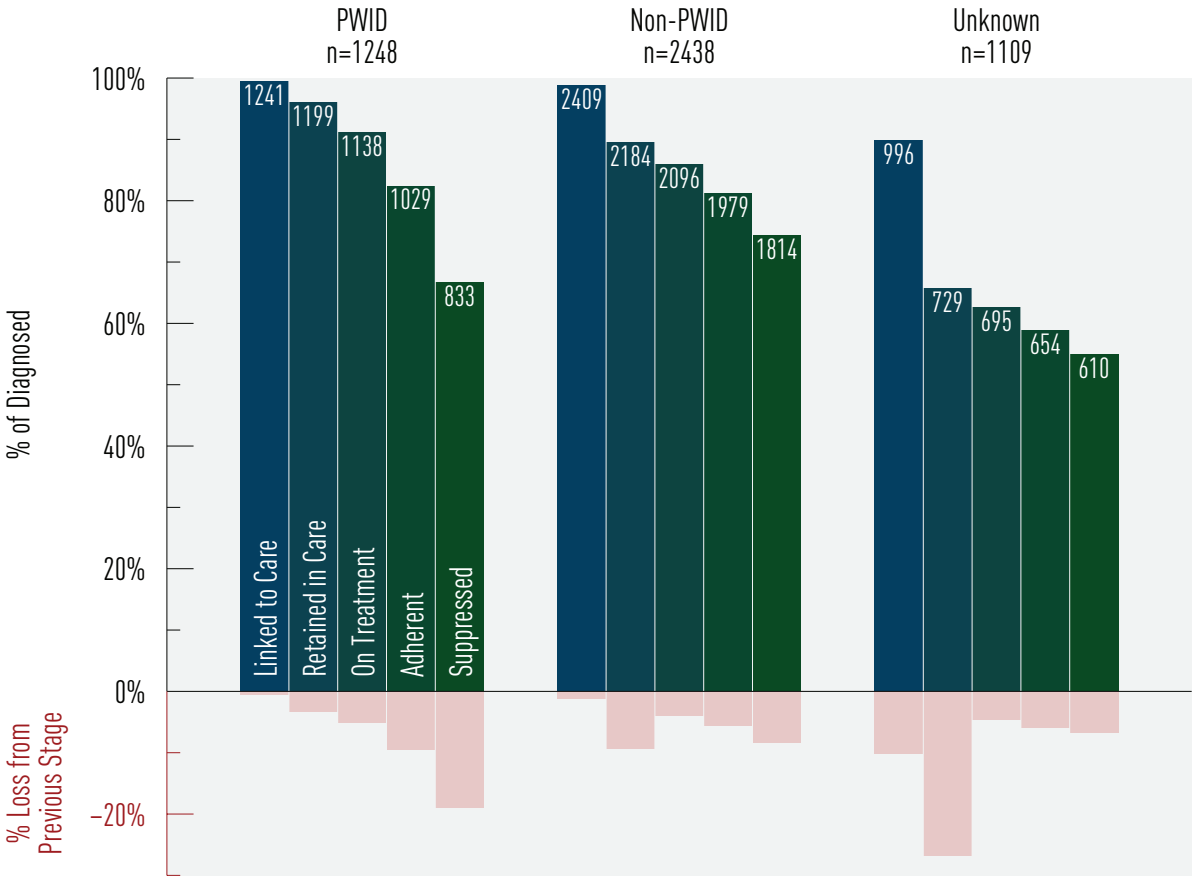
Figure 5.5 Estimated Cascade of Care for Vancouver Coastal Health by Age Category and MSM Status, Year Ending 2016 Q3 [9]



9 *Data is for the period 2015 Q4–2016 Q3.*
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.

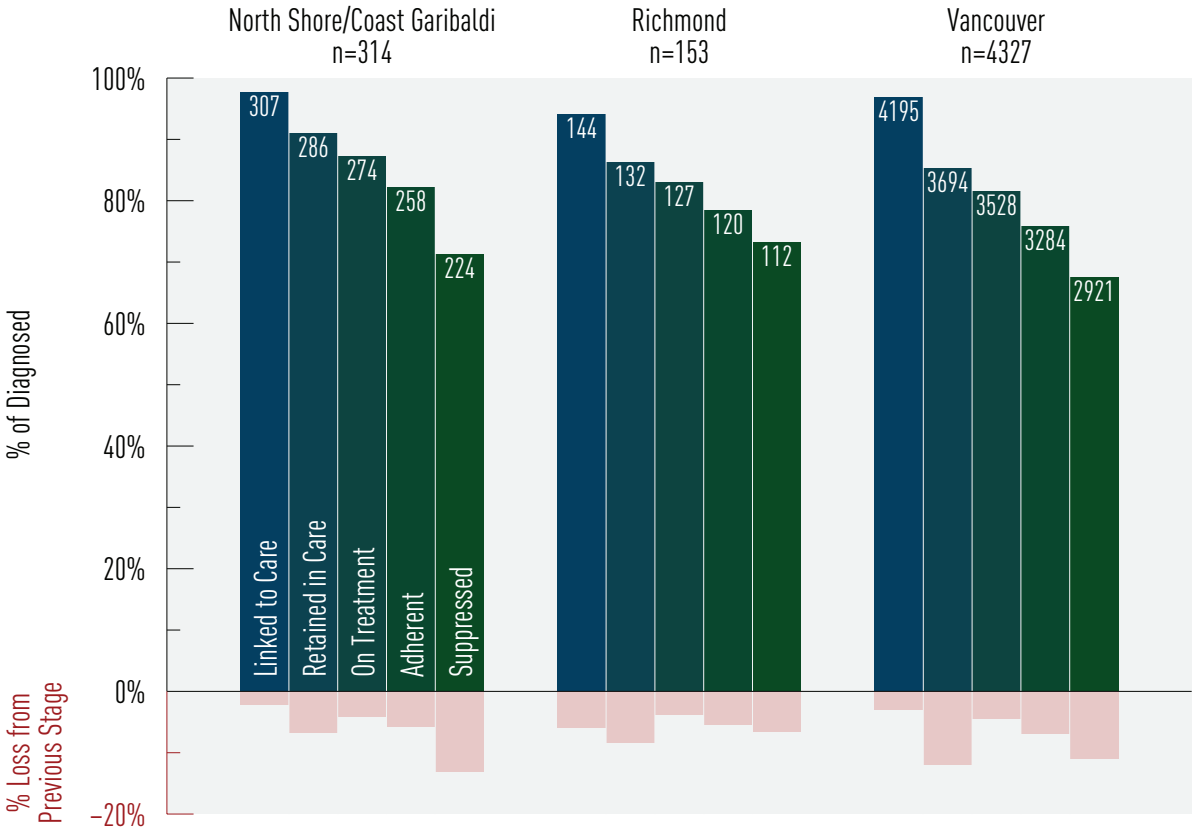
Figure 5.6 Estimated Cascade of Care for Vancouver Coastal Health by PWID Status, Year Ending 2016 Q3 [9]



9 *Data is for the period 2015 Q4–2016 Q3.*
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 Vancouver Coastal Health by HSDA, Year Ending 2016 Q3 [9]



9 *Data is for the period 2015 Q4–2016 Q3.*
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 2 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 Vancouver Coastal Health, 2014 Q4–2016 Q3 [10]

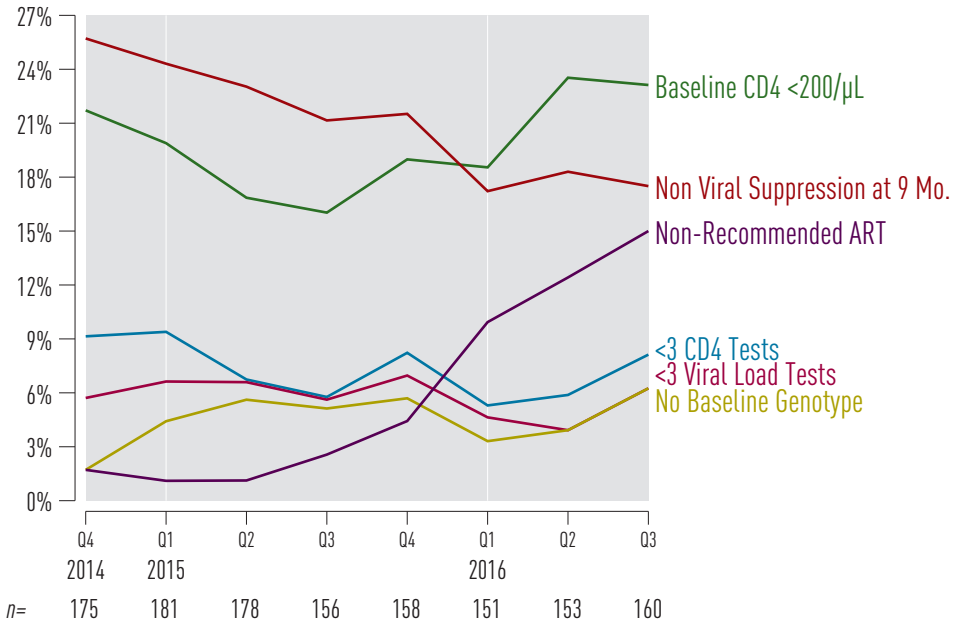
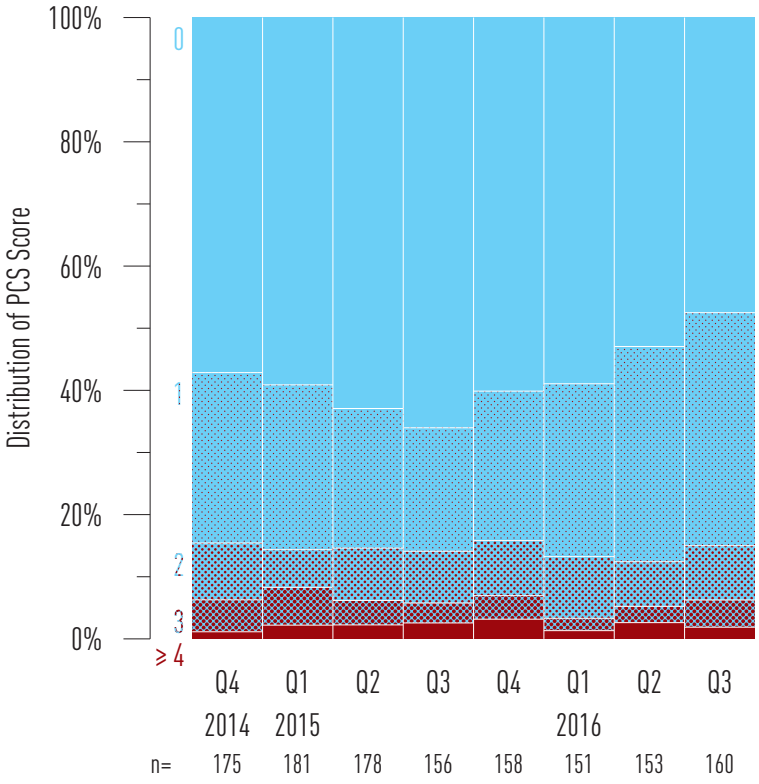


Figure 6.2 Historical Trends for PCS Score for Vancouver Coastal Health, 2014 Q4–2016 Q3 [10,11]



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

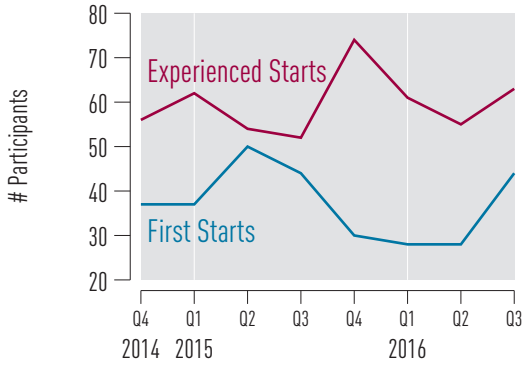
11 *Each quarter's data is calculated as the sum of the 4 quarters leading up to it. e.g. 2013 Q1 is calculated from 2012 Q2 – 2013 Q1. NB: A score of 0 is the best score and a score of 4 or more is the worst score.*

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.

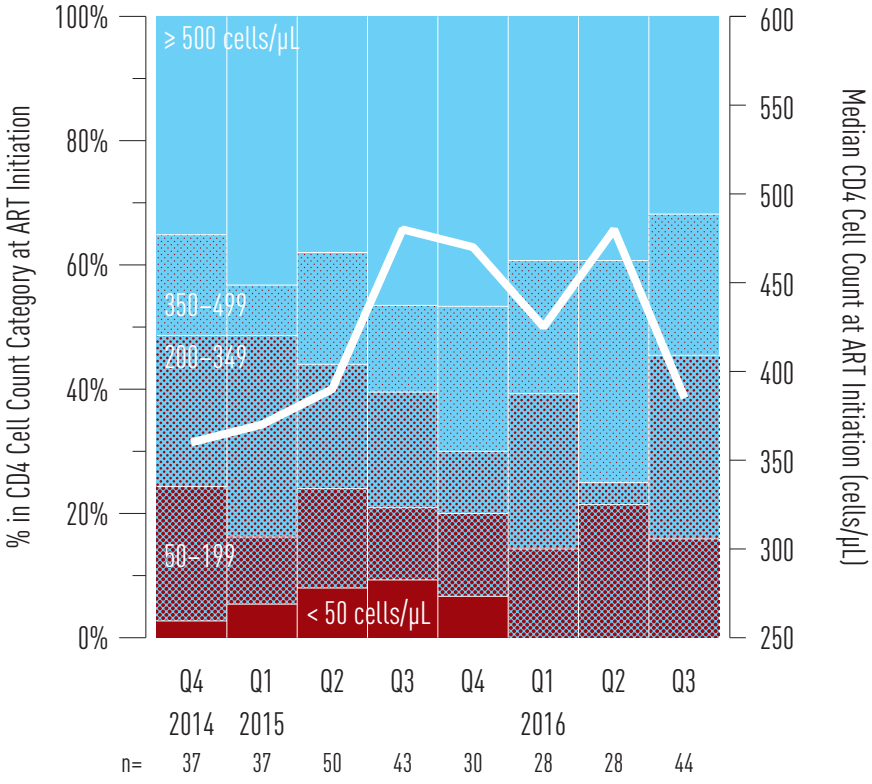
Indicator 7. New Antiretroviral Therapy Starts in Vancouver Coastal Health

Figure 7 BC-CfE Drug Treatment Program Enrollment: New ART Participants in Vancouver Coastal Health, 2014 Q4–2016 Q3 [12]



Indicator 8. CD4 Cell Count at ART Initiation

Figure 8 CD4 Cell Count at ART Initiation of ART-Naïve DTP Participants in Vancouver Coastal Health, 2014 Q4–2016 Q3 [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.*

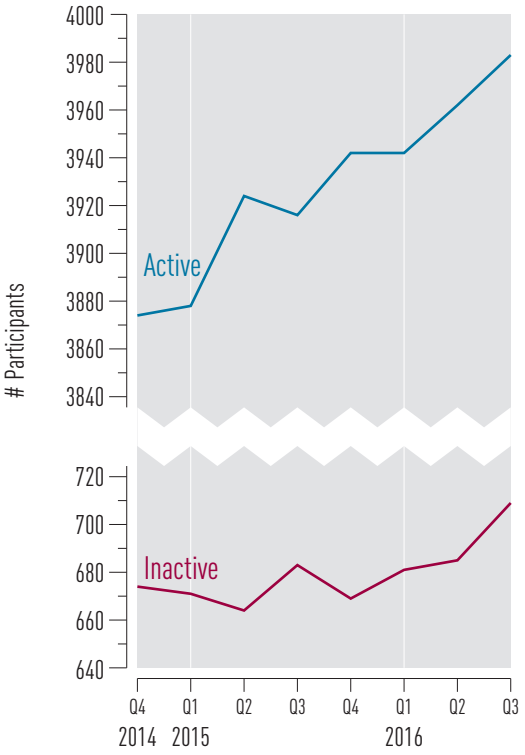
13 *Data Source: Drug Treatment Program Database Limitations: CD4 cell count data is approximately 80% complete.*

Indicator 9. Active and Inactive DTP Participants

Table 3. Distribution of People on ART for Vancouver Coastal Health, 2016 Q3 [14]

Age	< 30	134
	30–39	545
	40–49	1021
	≥ 50	2283
Gender	Male	3508
	Female	475
Exposure	MSM	1919
	PWID	1124
Total		3983

Figure 9 Active and Inactive DTP Participants for Vancouver Coastal Health, 2014 Q4–2016 Q3 [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

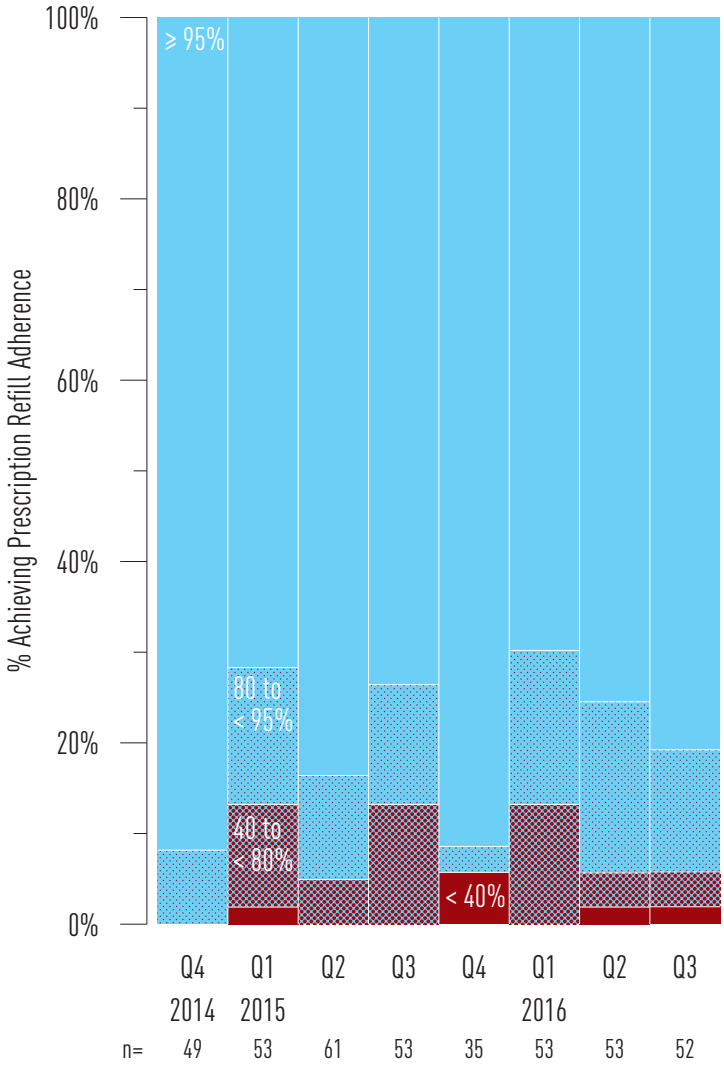
15 *Active DTP participants: An individual who has had medication prescribed at least once in the preceding quarter.*
Inactive DTP participants: Persons no longer prescribed drugs through the HIV/AIDS Drug Treatment Program in the last quarter.

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 Vancouver Coastal Health, 2014 Q4–2016 Q3 [16]



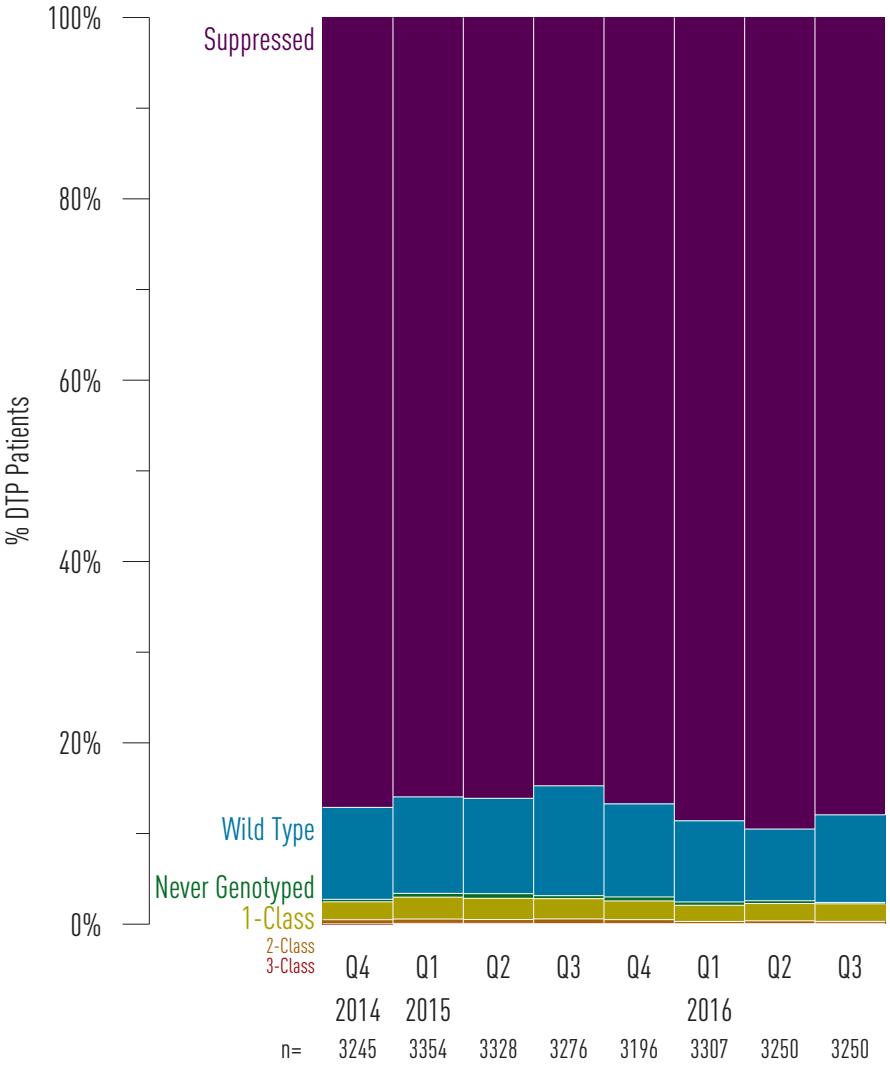
16 *Data Source: Drug Treatment Program Database*
Limitation: Prescription refill adherence is used as a proxy for patient adherence.

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 Vancouver Coastal Health, 2014 Q4–2016 Q3 [17]



17 *Data Source: Drug Treatment Program Database*

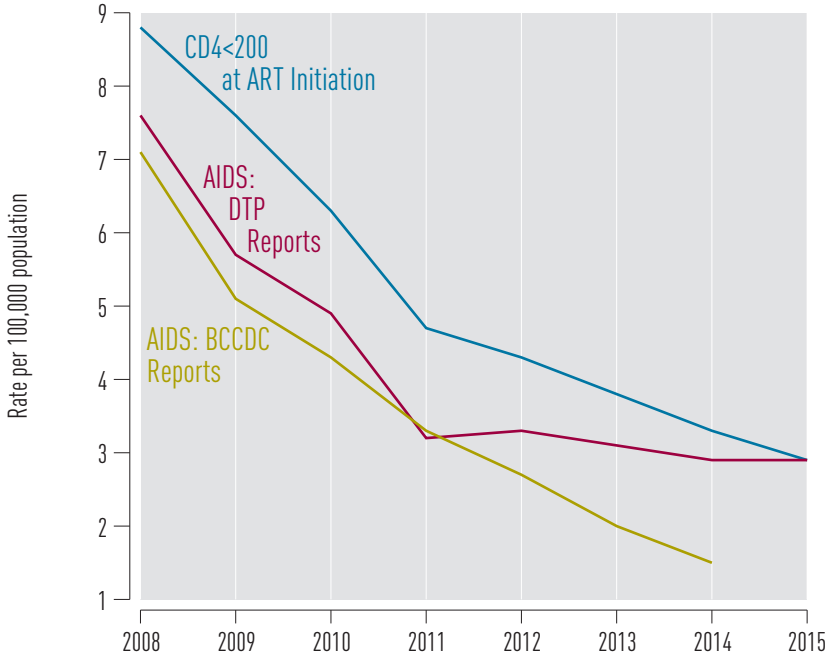
Limitation: DTP participants are designated to a HA based on most current residence provided by the participant.

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 Vancouver Coastal Health [18]



		2008	2009	2010	2011	2012	2013	2014	2015
CD4<200 at ART initiation	CASES	95	83	69	52	48	43	38	34
	PER 100K	8.8	7.6	6.3	4.7	4.3	3.8	3.3	2.9
AIDS: DTP Reports	CASES	82	62	54	35	37	35	33	33
	PER 100K	7.6	5.7	4.9	3.2	3.3	3.1	2.9	2.9
AIDS: BCCDC Reports	CASES	76	55	47	36	30	23	17	–
	PER 100K	7.1	5.1	4.3	3.3	2.7	2.0	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. Indicator 12 also reflects information from BC Vital Statistics. As this information is made available to BC-CFE, we use it to inform the development and refinement of this indicator.*

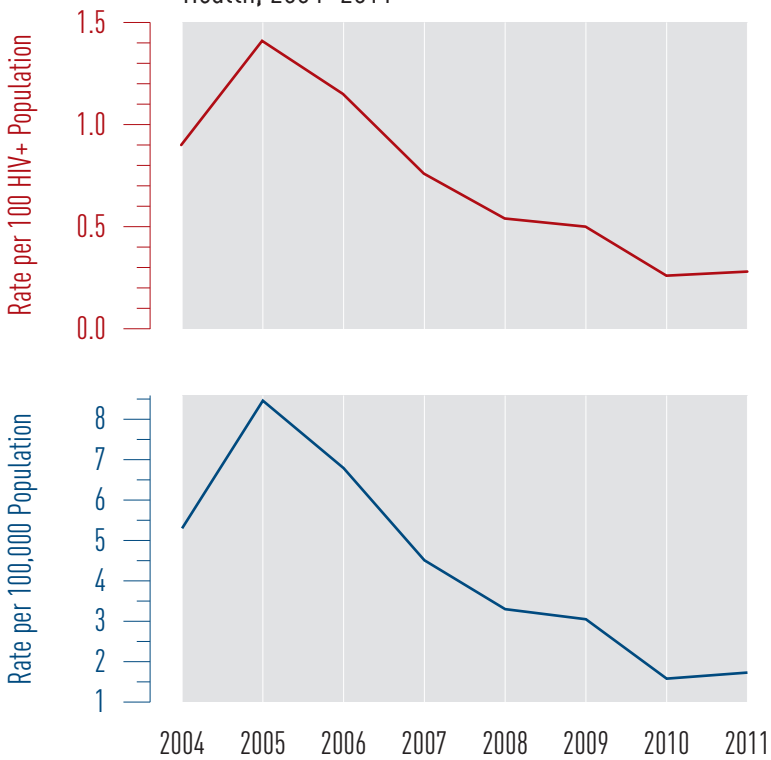
Limitation: AIDS case reporting was investigated using 3 definitions: First, using AIDS cases reported in AIDS case report forms from the DTP; Second, using AIDS cases reported via the BCCDC and third, using a CD4 cell count of <200 cells/μL at time of ART initiation using DTP data. AIDS case reporting 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 Vancouver Coastal Health, 2004–2011 [19]



	2004	2005	2006	2007	2008	2009	2010	2011
HIV-Related Deaths	55	88	73	49	36	34	18	20
Per 100 HIV+ Population	0.90	1.41	1.15	0.76	0.54	0.50	0.26	0.28
Per 100,000 Population	5.30	8.46	6.79	4.51	3.30	3.05	1.58	1.73

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)**		2012				2013				2014				2015				2016			
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Vancouver Coastal Health		19.1	21.8	21.4	24.0	24.5	30.1	32.1	30.7	29.9	35.0	38.4	43.0	41.6	45.5	44.8	45.5	44.6	49.0	48.1	46.5
Gender	Female	7.4	9.0	9.0	10.3	10.6	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	23.1	22.2
	Male	8.8	10.5	10.3	11.4	11.9	14.3	15.3	14.4	14.3	16.8	18.3	20.4	19.8	21.8	21.4	21.9	21.7	24.1	23.4	22.7
	Other	0.4	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Age	< 30	5.8	6.4	6.2	7.1	7.1	7.7	8.2	8.3	8.1	8.8	9.0	10.2	9.9	10.2	10.3	11.4	11.1	11.1	11.3	11.6
	30–39	4.2	5.1	5.0	5.2	5.2	6.4	6.7	6.5	6.2	7.6	7.6	8.1	7.7	8.8	8.9	9.2	8.6	9.9	9.8	9.4
	40–49	2.9	3.4	3.4	3.5	3.8	4.8	5.1	4.6	4.6	5.3	5.7	6.1	5.9	6.5	6.4	6.5	6.3	7.1	6.9	6.4
	≥ 50	3.4	4.5	4.8	5.9	6.4	9.1	10.2	9.0	9.1	11.0	14.0	16.1	16.0	18.1	17.5	16.8	17.0	19.0	18.6	17.5
POC Tests		2.4	2.1	1.9	2.1	1.7	2.0	1.8	2.1	1.9	2.1	2.0	2.4	2.0	1.7	1.6	1.6	1.5	1.7	1.4	1.4
North Shore / Coast Garibaldi		1.9	2.1	2.0	2.1	2.3	2.5	2.6	2.6	2.7	3.1	4.3	4.8	5.3	5.8	5.6	6.1	6.0	6.2	6.1	6.4
Female		0.9	1.1	1.0	1.1	1.2	1.3	1.4	1.3	1.3	1.6	2.2	2.5	2.8	3.1	3.0	3.3	3.2	3.1	3.2	3.3
Male		0.9	1.0	1.0	1.0	1.1	1.2	1.3	1.3	1.3	1.5	2.1	2.2	2.5	2.7	2.6	2.8	2.8	3.0	2.9	3.0
Richmond		0.9	1.0	1.0	1.1	1.2	1.4	1.4	1.4	1.3	2.5	4.8	4.8	4.7	5.1	4.5	4.2	4.8	5.7	5.5	5.3
Female		0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7	1.3	2.6	2.6	2.4	2.7	2.5	2.3	2.6	3.0	3.1	2.9
Male		0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.7	0.7	1.2	2.2	2.3	2.2	2.4	2.0	2.0	2.2	2.7	2.4	2.4
Vancouver		16.3	18.7	18.5	20.9	21.1	26.2	28.1	26.7	25.8	29.4	29.2	33.3	31.6	34.6	34.7	35.1	33.9	37.0	36.5	34.9
Female		6.1	7.4	7.5	8.7	8.8	11.6	12.7	12.0	11.5	12.9	13.1	15.0	14.3	16.0	16.2	16.3	15.5	16.8	16.8	16.0
Male		7.5	9.0	8.9	9.9	10.3	12.4	13.4	12.4	12.3	14.1	14.1	15.9	15.1	16.7	16.8	17.1	16.7	18.4	18.1	17.3

Indicator 2: **Rate of HIV Testing per 100,000**		2009	2010	2011	2012	2013	2014	2015
All Vancouver Coastal Health		4124.7	4139.9	4342.3	5824.7	8114.3	10302.2	11577.1
North Shore / Coast Garibaldi		2669.2	2668.3	2773.5	3282.0	4087.2	6411.3	8208.8
Richmond		1762.3	1840.3	1910.7	2444.4	3061.2	8130.1	8738.5
Vancouver		5485.5	5493.9	5777.2	7961.7	11395.3	12648.9	13911.9
Gender	Female	3547.4	3531.2	3737.6	5342.0	7804.3	10001.5	11418.5
	Male	4396.2	4470.0	4657.3	6149.6	8327.9	10493.6	11620.3
Age	< 30	4309.0	4296.1	4494.8	5508.2	6675.1	7677.6	8533.6
	30–39	7337.9	7558.7	7670.6	9511.2	12247.6	14276.9	15714.7
	40–49	4521.9	4442.3	4655.3	6219.0	9002.8	10906.4	12013.8
	≥ 50	1842.4	1909.7	2189.5	4162.6	7262.4	10753.4	12338.5

Indicator 3: **New HIV Diagnoses**		2012				2013				2014				2015				2016			
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Vancouver Coastal Health	By Client Residence	41	43	33	33	32	31	44	40	25	37	49	32	27	37	34	33	24	23	33	45
	By Provider Address	*42*	*47*	*38*	*37*	*38*	*31*	*49*	*49*	*29*	*41*	*54*	*36*	*32*	*44*	*40*	*35*	*23*	*24*	*40*	*50*
Gender	Female	2	5	4	3	2	4	4	1	1	3	4	3	3	4	1	5	5	2	5	5
	Male	39	38	29	30	30	27	40	39	24	33	44	29	24	33	33	28	19	21	28	38
Age	< 30	12	11	10	7	13	7	10	14	6	11	12	6	9	9	9	10	5	6	9	11
	30–39	8	12	11	7	6	11	14	5	3	10	16	13	7	9	9	9	5	9	8	15
	40–49	13	12	6	11	9	8	8	11	10	8	7	5	5	6	9	4	6	4	5	5
	≥ 50	8	8	6	8	4	5	12	10	6	8	14	8	6	13	7	10	8	4	11	13
Exposure	MSM	30	33	25	25	22	19	31	29	20	27	36	21	17	25	26	22	13	13		
	PWID	0	3	4	1	3	3	3	3	2	4	3	2	1	2	2	4	3	0		
	HET	9	7	4	6	6	8	8	6	2	4	7	6	4	6	5	6	6	4		
	Other	2	0	0	0	0	0	0	1	0	0	0	2	2	2	0	0	0	0		
	NIR/Unknown	0	0	0	1	1	1	2	1	1	2	3	1	3	2	1	1	2	6		
North Shore / Coast Garibaldi	By Client Residence	1	2	3	1	1	3	1	4	1	1	3	3	3	2	0	1	5	0	3	3
	By Provider Address	*0*	*1*	*2*	*2*	*1*	*3*	*2*	*4*	*0*	*1*	*2*	*3*	*3*	*2*	*2*	*1*	*4*	*0*	*2*	*3*
Richmond	By Client Residence	3	0	1	3	0	2	0	0	1	1	1	2	0	1	4	2	0	0	4	1
	By Provider Address	*2*	*0*	*1*	*2*	*1*	*0*	*0*	*0*	*2*	*2*	*1*	*3*	*0*	*1*	*2*	*2*	*0*	*0*	*6*	*2*
Vancouver	By Client Residence	37	41	29	29	31	26	43	36	23	35	45	27	24	34	30	30	19	23	26	41
	By Provider Address	*40*	*46*	*35*	*33*	*36*	*28*	*47*	*45*	*27*	*38*	*51*	*30*	*29*	*41*	*36*	*32*	*19*	*24*	*32*	*45*

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

	VCH					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	49	44	34	46	43	0	6	1	2	8	49	38	32	44	35	9	16	12	19	12	21	15	12	15	15	16	7	8	7	5
1	38	33	39	41	28	4	4	3	8	4	34	28	36	33	24	13	8	15	8	9	13	13	13	14	6	5	7	4	9	6
2a	35	19	34	17	13	5	1	3	2	2	30	18	31	15	11	8	4	8	2	5	12	3	9	2	2	10	8	7	6	3
2b	24	19	16	19	20	4	3	3	0	2	20	16	13	19	17	5	4	0	4	4	5	4	10	5	6	9	6	4	5	3
3	28	34	30	23	24	4	2	3	5	3	24	32	27	18	21	1	5	2	3	3	5	6	2	6	3	9	8	15	4	5
Unknown	13	8	4	12	11	0	1	0	1	0	12	7	4	11	11	3	5	0	2	1	4	2	1	6	3	2	0	0	2	4
Total	187	157	157	158	139	17	17	13	18	19	169	139	143	140	119	39	42	37	38	34	60	43	47	48	35	51	36	38	33	26

	≥ 50 years					MSM					Heterosexual					PWID					Other Exposure					NIR/Unknown				
	'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	3	6	2	5	11	45	35	25	42	29	2	4	6	3	4	2	5	3	1	10	0	0	0	0	0	0	0	0	0	0
1	7	5	7	10	7	29	26	30	25	21	2	1	3	6	0	6	6	4	8	6	1	0	0	1	0	0	0	2	1	1
2a	5	4	10	7	3	25	14	25	11	9	4	4	4	0	0	5	1	4	3	2	1	0	0	0	1	0	0	1	3	1
2b	5	5	2	5	7	17	13	12	12	14	2	2	0	2	3	5	3	3	4	2	0	0	0	0	1	0	1	1	1	0
3	13	15	11	10	13	13	22	16	9	10	1	1	1	0	3	13	9	11	9	8	1	0	0	3	0	0	2	2	2	3
Unknown	4	1	3	2	3	9	7	3	9	7	2	0	0	0	0	1	1	0	1	1	1	0	1	0	0	0	0	0	2	3
Total	37	36	35	39	44	138	117	111	108	90	13	12	14	11	10	32	25	25	26	29	4	0	1	4	2	0	3	6	9	8

Indicator 5: **HIV Cascade of Care**			Diagnosed	Linked	Retained	On ARVs	Adherent	Suppressed
Vancouver Coastal Health			4796	4647	4112	3929	3662	3257
Gender	Men		4209	4113	3606	3461	3241	2914
	Women		586	534	507	468	421	343
Age Category	< 30		207	138	113	107	96	83
	30-39		636	611	526	499	441	400
	40-49		1192	1165	1020	969	891	780
	≥ 50		2761	2733	2453	2354	2234	1994
MSM Status	MSM		2191	2168	1970	1889	1780	1638
	Non-MSM		1192	1180	1131	1073	970	777
	Unknown		1413	1299	1011	967	912	842
Age Category	MSM	< 30	64	57	45	42	38	34
and MSM Status		30-39	281	271	228	218	190	178
		40-49	487	484	443	421	389	357
		≥ 50	1360	1357	1254	1208	1163	1069
	Non-MSM	< 30	20	20	17	17	13	10
		30-39	142	138	129	119	102	83
		40-49	332	329	302	287	258	203
		≥ 50	698	693	683	650	597	481
	Unknown	< 30	122	61	50	48	45	39
		30-39	214	202	169	162	149	139
		40-49	373	353	275	261	244	220
		≥ 50	704	683	517	496	474	444
PWID Status	PWID		1248	1241	1199	1138	1029	833
	Non-PWID		2438	2409	2184	2096	1979	1814
	Unknown		1109	996	729	695	654	610
HSDA	North Shore/Coast Garibaldi		314	307	286	274	258	224
	Richmond		153	144	132	127	120	112
	Vancouver		4327	4195	3694	3528	3284	2921

Indicator 6: **Programmatic Compliance Score (PCS)**	2015 Q4	2015 Q1	2015 Q2	2015 Q3	2016 Q4	2016 Q1	2016 Q2	2016 Q3
< 3 CD4 Tests	9.1%	9.4%	6.7%	5.8%	8.2%	5.3%	5.9%	8.1%
< 3 Viral Load Tests	5.7%	6.6%	6.7%	5.8%	7.0%	4.6%	3.9%	6.2%
No Baseline Genotype	1.7%	4.4%	5.6%	5.1%	5.7%	3.3%	3.9%	6.2%
Baseline CD4 < 200 cells/μL	21.7%	19.9%	16.9%	16.0%	19.0%	18.5%	23.5%	23.1%
Non-Recommended ART	1.7%	1.1%	1.1%	2.6%	4.4%	9.9%	12.4%	15.0%
Non Viral Suppression at 9 Mo.	25.7%	24.3%	23.0%	21.2%	21.5%	17.2%	18.3%	17.5%
PCS Score: 0	100	107	112	103	95	89	81	76
PCS Score: 1	48	48	40	31	38	42	53	60
PCS Score: 2	16	11	15	13	14	15	11	14
PCS Score: 3	9	11	7	5	6	3	4	7
PCS Score: 4 or more	2	4	4	4	5	2	4	3
Total (n=)	**175**	**181**	**178**	**156**	**158**	**151**	**153**	**160**

Indicator 7: **New DTP ARV Participants**								
First Starts	37	37	50	44	30	28	28	44
Experienced Starts	56	62	54	52	74	61	55	63

Indicator 8: **CD4 Cell Count Initiation for ARV-Naïve DTP Participants**								
CD4 ≥ 500	13	16	19	20	14	11	11	14
CD4 350-499	6	3	9	6	7	6	10	10
CD4 200-349	9	12	10	8	3	7	1	13
CD4 50-199	8	4	8	5	4	4	6	7
CD4 < 50	1	2	4	4	2	0	0	0
CD4 MED	360	370	390	480	470	425	480	385
Total (n=)	**37**	**37**	**50**	**43**	**30**	**28**	**28**	**44**

Indicator 9: **Active and Inactive DTP Participants**								
Active DTP Participants	3874	3878	3924	3916	3942	3942	3962	3983
Inactive DTP Participants	674	671	664	683	669	681	685	709

Indicator 10: **Antiretroviral Adherence**								
≥ 95%	45	38	51	39	32	37	40	42
80% to < 95%	4	8	7	7	1	9	10	7
40% to < 80%	0	6	3	7	0	7	2	2
< 40%	0	1	0	0	2	0	1	1
Total (n=)	**49**	**53**	**61**	**53**	**35**	**53**	**53**	**52**

Indicator 11: **Resistance Testing and Results**								
Suppressed	2827	2883	2866	2776	2772	2930	2909	2858
Wild Type	329	357	350	397	328	296	257	314
Never Genotyped	9	14	17	11	14	12	10	5
1-Class	64	81	78	73	66	59	62	63
2-Class	15	16	14	17	14	8	10	7
3-Class	1	3	3	2	2	2	2	3
4-Class	0	0	0	0	0	0	0	0
Total (n=)	**3245**	**3354**	**3328**	**3276**	**3196**	**3307**	**3250**	**3250**

Indicator 12: **AIDS-Defining Illness**		2008	2009	2010	2011	2012	2013	2014	2015
CD4 < 200 at	Cases	95	83	69	52	48	43	38	34
ART initiation	*Rate per 100,000*	*8.8*	*7.6*	*6.3*	*4.7*	*4.3*	*3.8*	*3.3*	*2.9*
AIDS Cases	Cases	82	62	54	35	37	35	33	33
(DTP Reports)	*Rate per 100,000*	*7.6*	*5.7*	*4.9*	*3.2*	*3.3*	*3.1*	*2.9*	*2.9*
AIDS Cases	Cases	76	55	47	36	30	23	17	-
(BCCDC Reports)	*Rate per 100,000*	*7.1*	*5.1*	*4.3*	*3.3*	*2.7*	*2.0*	*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