BRITISH COLUMBIA
CENTRE *for* EXCELLENCE
in HIV/AIDS

HIV MONITORING QUARTERLY REPORT

FOR FRASER HEALTH

THIRD QUARTER 2013

UPDATED VERSION: NOV 28, 2014 *

* *See foreword*

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

First Nations Health Authority

fraserhealth

Interior Health
For your whole life

northern health
the northern way of caring

Providence HEALTH CARE
How you want to be treated.

Vancouver CoastalHealth
Promoting wellness. Ensuring care.

island health

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 HAs. 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.

** Please note that for Q2 and Q3 2013 reports, a coding revision resulted in data display errors in Indicator 5, the Cascade of Care (in Figures 5.1–5.7 on pp. 20–25 in this report), which has been updated; and, only for Q3 2013 reports, Appendix Table for Indicator 5 (on p. 35 in this report). All other figures and reports remain accurate. Please discard any previous reports and use this updated version. If you have any questions, please contact Irene Day 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. Lillian Lourenco 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.

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

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

Kate Heath, BC-CFE

Bohdan Nosyk, BC-CFE

Viviane Dias Lima, BC-CFE

Irene Day, BC-CFE

Dr. Mark Gilbert, BCCDC

Dr. Mel Kradjen, BCCDC

Stephanie Konrad, FHA

Joanne Nelson, FNHA

Jennifer May-Hadford, IHA

James Haggerstone, NHA

Dr. Neora Pick, PHSA

Dr. Reka Gustafson, VCHA

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 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 highly active antiretroviral therapy (HAART) initiation.

The expansion to a province-wide programme was announced on November 30th 2012 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.

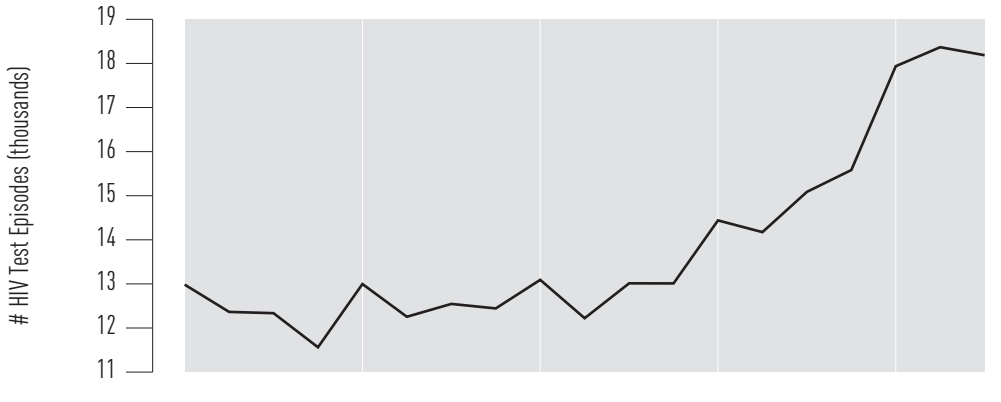
The goals of HA-led STOP-funded initiatives are to work toward achieving these goals. To these ends some outcome measures or indicators of progress have been drafted that should be considered in the design and implementation phases of these initiatives.

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.

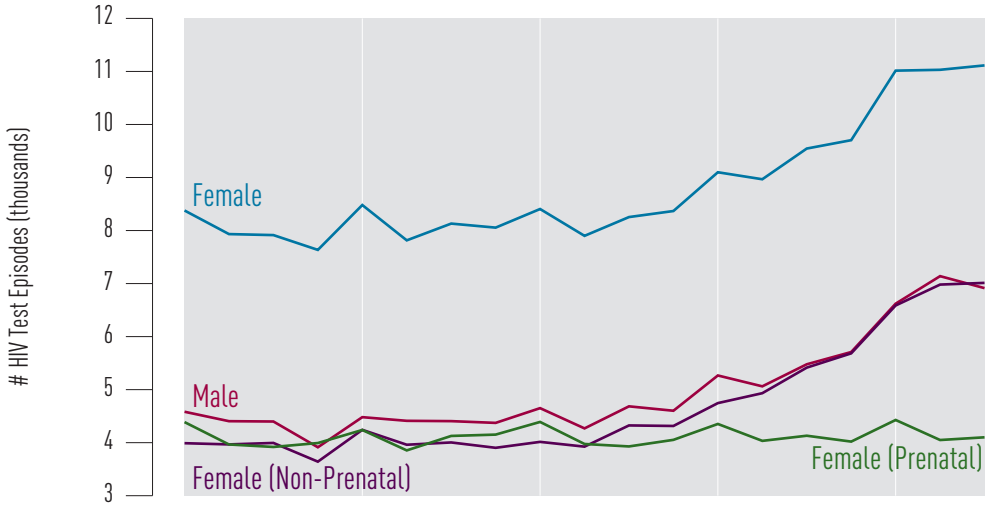
Indicator 1. HIV Testing Episodes

Figure 1.1 HIV Test Episodes in Fraser Health, 2009 Q1–2013 Q3



	2009 Q1	Q2	Q3	Q4	2010 Q1	Q2	Q3	Q4	2011 Q1	Q2	Q3	Q4	2012 Q1	Q2	Q3	Q4	2013 Q1	Q2	Q3
Fraser Health	13.0	12.4	12.3	11.6	13.0	12.3	12.5	12.4	13.1	12.2	13.0	13.0	14.4	14.2	15.1	15.6	17.9	18.4	18.2

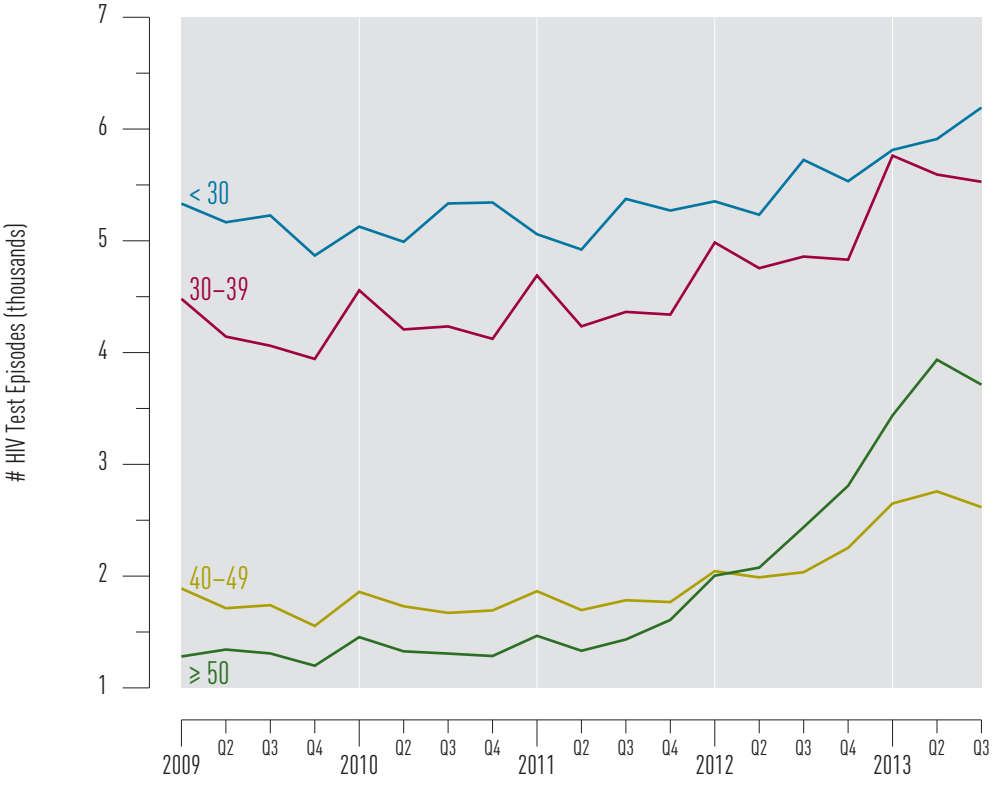
Figure 1.2 HIV Test Episodes by Gender and Prenatal Status in Fraser Health, 2009 Q1–2013 Q3 [1]



	2009 Q1	Q2	Q3	Q4	2010 Q1	Q2	Q3	Q4	2011 Q1	Q2	Q3	Q4	2012 Q1	Q2	Q3	Q4	2013 Q1	Q2	Q3
Female	8.4	7.9	7.9	7.6	8.5	7.8	8.1	8.1	8.4	7.9	8.3	8.4	9.1	9.0	9.5	9.7	11.0	11.0	11.1
Male	4.6	4.4	4.4	3.9	4.5	4.4	4.4	4.4	4.7	4.3	4.7	4.6	5.3	5.1	5.5	5.7	6.6	7.1	6.9
Prenatal	4.4	4.0	3.9	4.0	4.2	3.9	4.1	4.2	4.4	4.0	3.9	4.1	4.4	4.0	4.1	4.0	4.4	4.1	4.1
Non-prenatal	4.0	4.0	4.0	3.6	4.2	4.0	4.0	3.9	4.0	3.9	4.3	4.3	4.7	4.9	5.4	5.7	6.6	7.0	7.0
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

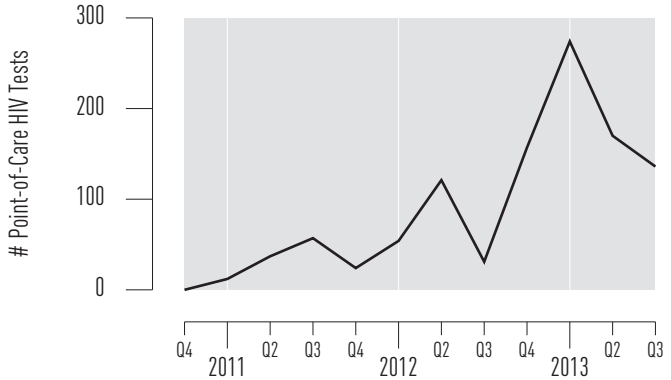
1 *NB: Testing does not include point of care tests.*

Figure 1.3 HIV Test Episodes by Age Category for Fraser Health, 2009 Q1–2013 Q3 [1,2]



	2009 Q2	Q3	Q4	2010 Q2	Q3	Q4	2011 Q2	Q3	Q4	2012 Q2	Q3	Q4	2013 Q2	Q3
< 30	5.3	5.2	5.2	4.9	5.1	5.0	5.3	5.3	5.1	4.9	5.4	5.3	5.4	5.2	5.7	5.5	5.8	5.9	6.2
30 – 39	4.5	4.1	4.1	3.9	4.6	4.2	4.2	4.1	4.7	4.2	4.4	4.3	5.0	4.8	4.9	4.8	5.8	5.6	5.5
40 – 49	1.9	1.7	1.7	1.6	1.9	1.7	1.7	1.7	1.9	1.7	1.8	1.8	2.0	2.0	2.0	2.3	2.7	2.8	2.6
≥ 50	1.3	1.3	1.3	1.2	1.5	1.3	1.3	1.3	1.5	1.3	1.4	1.6	2.0	2.1	2.4	2.8	3.4	3.9	3.7

Figure 1.4 Point-of-Care HIV Tests in Fraser Health, 2010 Q4–2013 Q3



	Q4 2011	Q2	Q3	Q4	2012 Q2	Q3	Q4	2013 Q2	Q3
POC HIV Tests	0	12	37	57	24	54	121	31	157	274	170	136

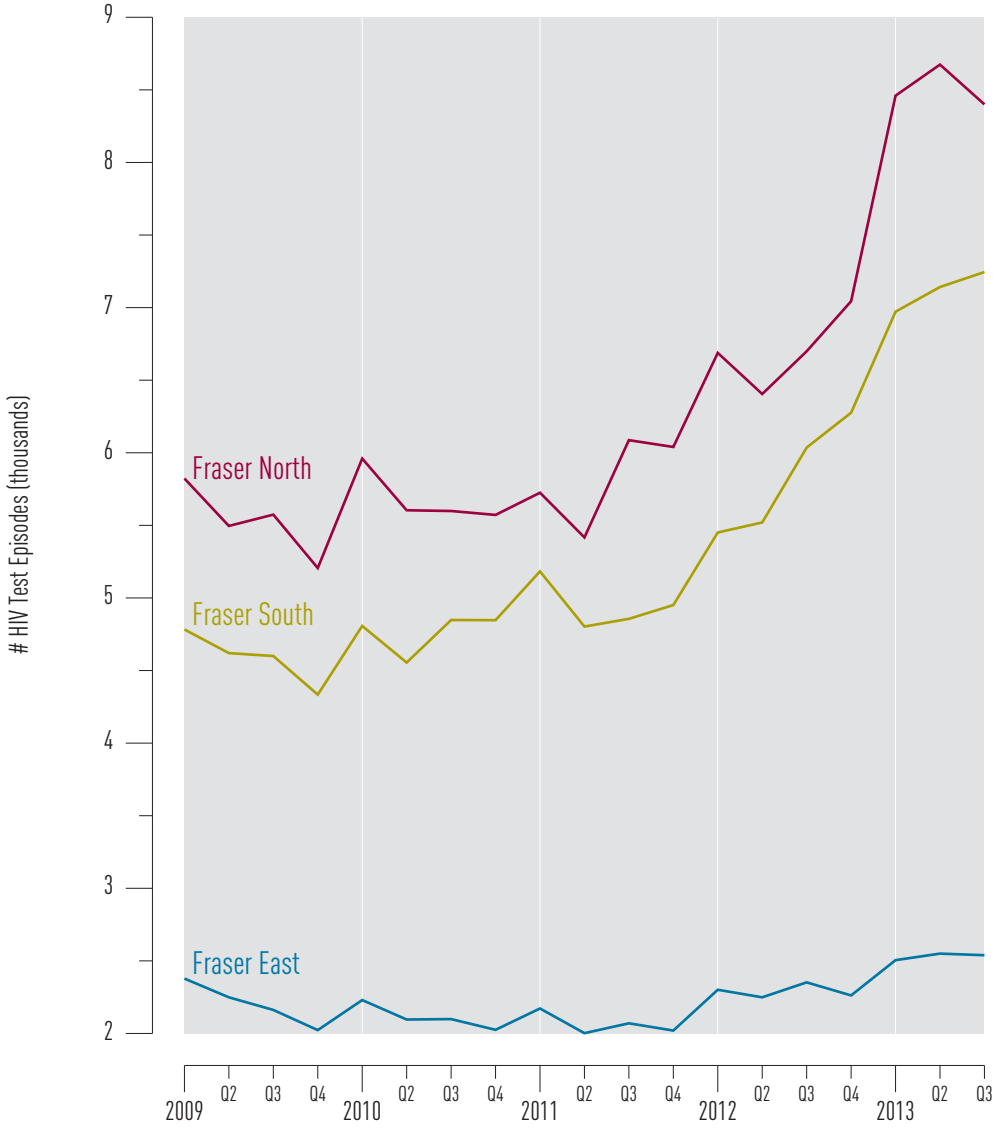
2 *Data Source: The BC Public Health Microbiology and Reference Laboratory (BCPHMRL) courtesy of the BC Centre for Disease Control (BCCDC).*

Limitations:

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

2 *POC testing data is available from the fourth quarter of 2010 and onwards.*

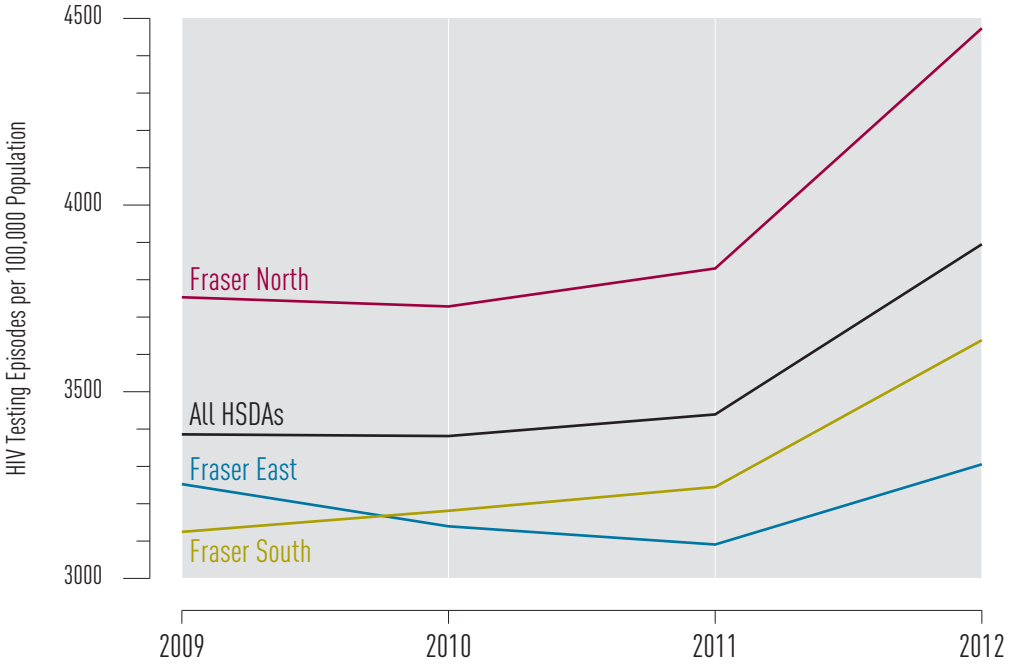
Figure 1.5 HIV Test Episodes by Health Service Delivery Area in Fraser Health, 2009 Q1–2013 Q3



	2009 Q1	Q2	Q3	Q4	2010 Q1	Q2	Q3	Q4	2011 Q1	Q2	Q3	Q4	2012 Q1	Q2	Q3	Q4	2013 Q1	Q2	Q3
Fraser North	5.8	5.5	5.6	5.2	6.0	5.6	5.6	5.6	5.7	5.4	6.1	6.0	6.7	6.4	6.7	7.0	8.5	8.7	8.4
Fraser East	2.4	2.2	2.2	2.0	2.2	2.1	2.1	2.0	2.2	2.0	2.1	2.0	2.3	2.2	2.4	2.3	2.5	2.6	2.5
Fraser South	4.8	4.6	4.6	4.3	4.8	4.6	4.8	4.8	5.2	4.8	4.9	5.0	5.5	5.5	6.0	6.3	7.0	7.1	7.2

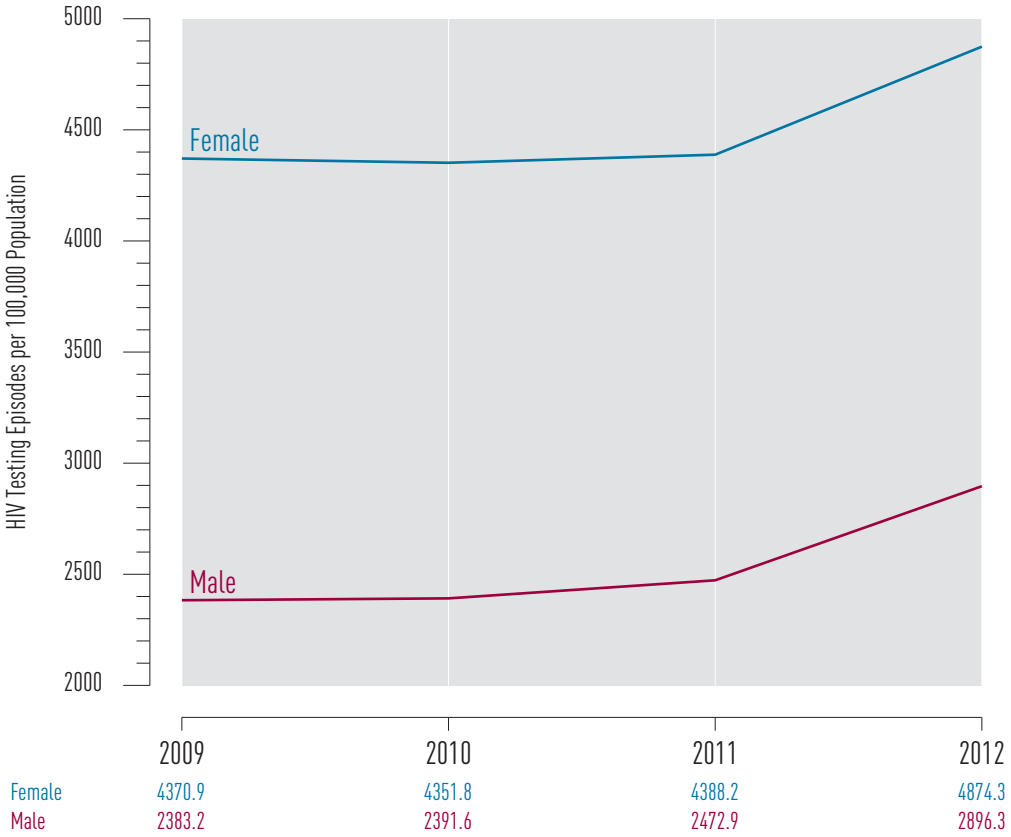
Indicator 2. HIV Testing Rates

Figure 2.1 Rate of HIV Testing in Fraser Health and HSDAs, 2009–2012 [1]



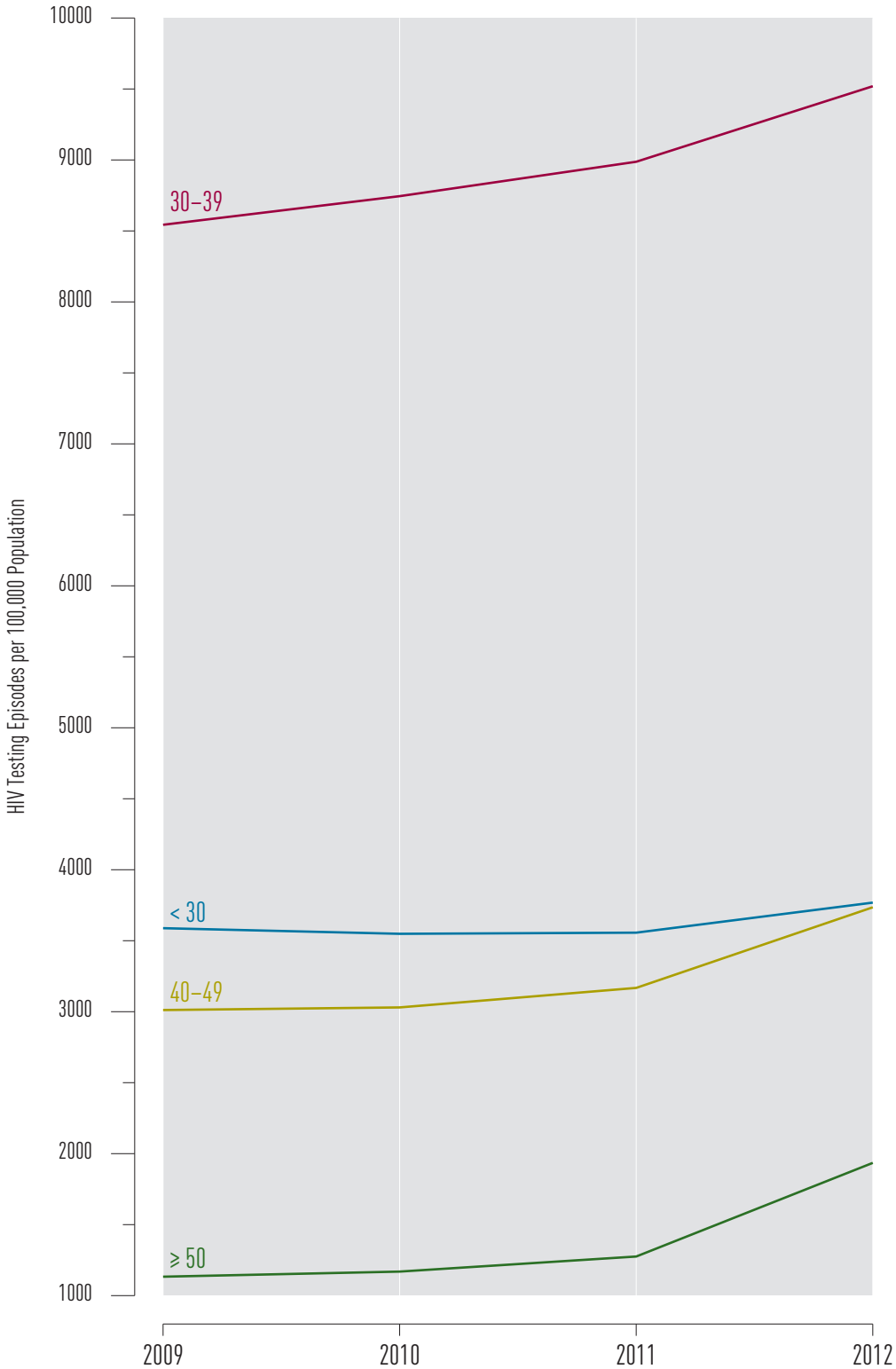
	2009	2010	2011	2012
Fraser Health	3385.8	3381.3	3439.2	3895.1
Fraser North	3753.1	3728.4	3830.2	4473.6
Fraser East	3252.5	3139.5	3090.8	3305.6
Fraser South	3124.6	3181.1	3245.0	3638.1

Figure 2.2 Rate of HIV Testing by Gender in Fraser Health, 2009–2012 [1]



	2009	2010	2011	2012
Female	4370.9	4351.8	4388.2	4874.3
Male	2383.2	2391.6	2472.9	2896.3

Figure 2.3 Rate of HIV Testing by Age Category in Fraser Health, 2009–2012 [1]



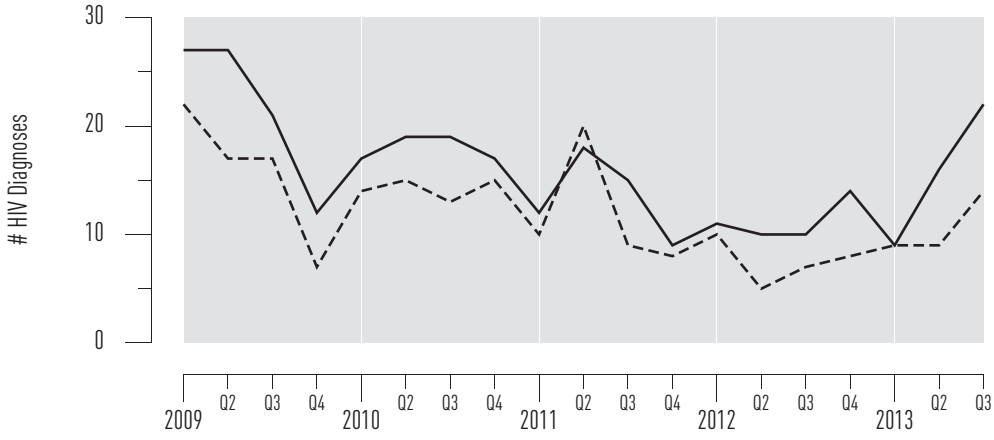
	2009	2010	2011	2012
< 30	3588.3	3548.7	3556.7	3768.4
30–39	8543.3	8744.9	8987.3	9519.4
40–49	3011.7	3030.1	3167.6	3735.4
≥ 50	1133.2	1169.2	1275.4	1935.0

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.

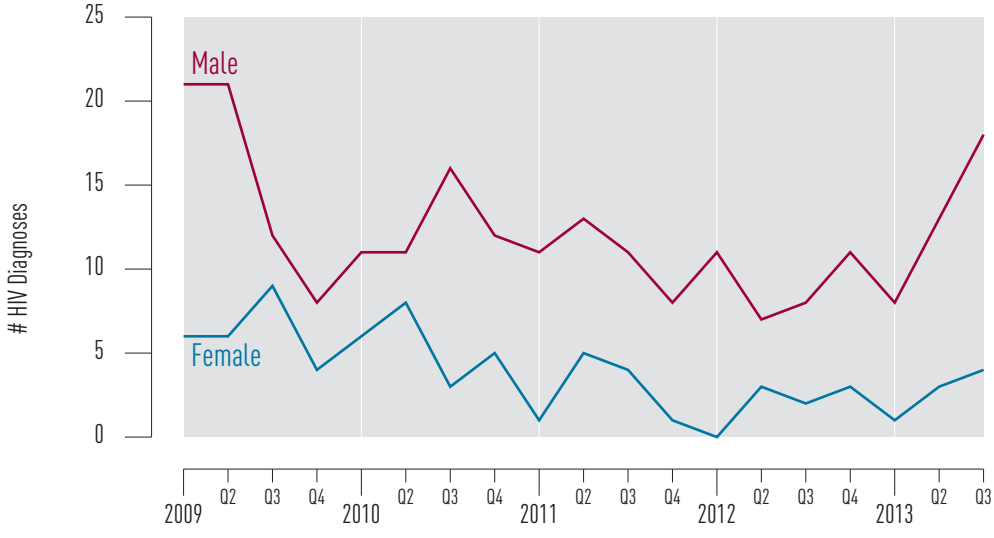
Indicator 3. New HIV Diagnoses

Figure 3.1 New HIV Diagnoses for Fraser Health, 2009 Q1–2013 Q3 [3]



		2009 Q2	Q3	Q4	2010 Q2	Q3	Q4	2011 Q2	Q3	Q4	2012 Q2	Q3	Q4	2013 Q2	Q3
Fraser Health	By Client Residence	27	21	12	17	19	19	17	12	18	15	9	11	10	10	14	9	16	22
	By Provider Address	*22*	*17*	*7*	*14*	*15*	*13*	*15*	*10*	*20*	*9*	*8*	*10*	*5*	*7*	*8*	*9*	*9*	*14*

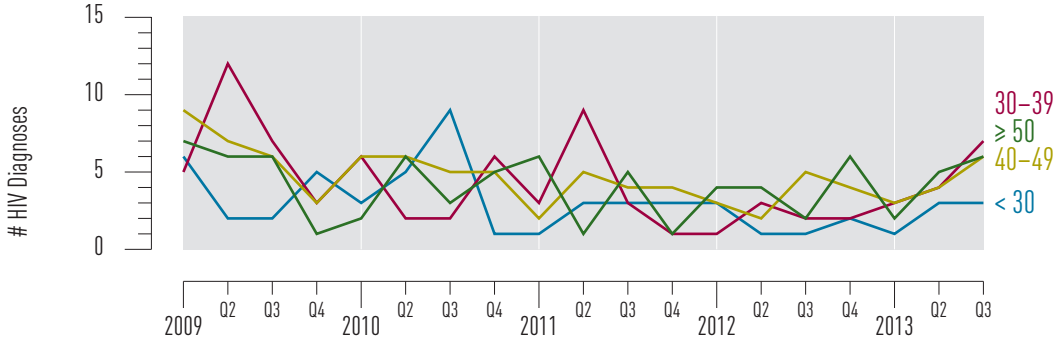
Figure 3.2 New HIV Diagnoses for Fraser Health by Gender, 2009 Q1–2013 Q3



	2009 Q2	Q3	Q4	2010 Q2	Q3	Q4	2011 Q2	Q3	Q4	2012 Q2	Q3	Q4	2013 Q2	Q3
Female	6	9	4	6	8	3	5	1	5	4	1	0	3	2	3	1	3	4
Male	21	12	8	11	11	16	12	11	13	11	8	11	7	8	11	8	13	18

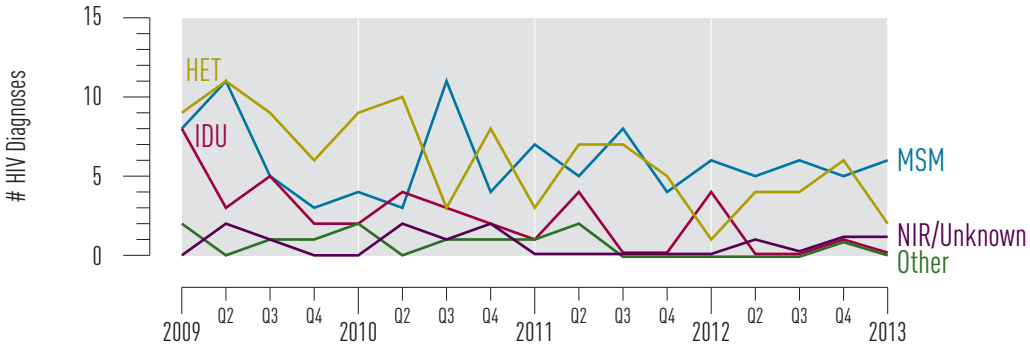
3 *Data Source:* BCCDC

Figure 3.3 New HIV Diagnoses for Fraser Health by Age Category, 2009 Q1–2013 Q3



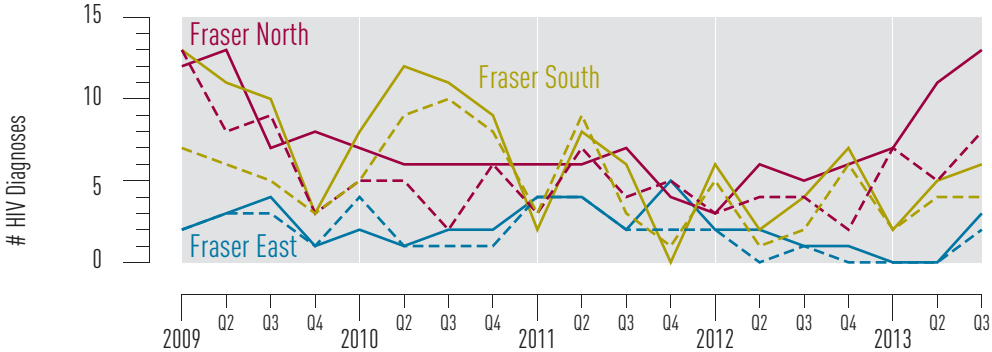
< 30 years	6	2	2	5	3	5	9	1	1	3	3	3	3	1	1	2	1	3	3
30–39 years	5	12	7	3	6	2	2	6	3	9	3	1	1	3	2	2	3	4	7
40–49 years	9	7	6	3	6	6	5	5	2	5	4	4	3	2	5	4	3	4	6
≥ 50 years	7	6	6	1	2	6	3	5	6	1	5	1	4	4	2	6	2	5	6

Figure 3.4 New HIV Diagnoses for Fraser Health by Exposure Category, 2009 Q1–2013 Q3 [4]



MSM (men having sex with men)	8	11	5	3	4	3	11	4	7	5	8	4	6	5	6	5	6
IDU (injection drug use)	8	3	5	2	2	4	3	2	1	4	0	0	4	0	0	1	0
HET (heterosexual contact)	9	11	9	6	9	10	3	8	3	7	7	5	1	4	4	6	2
Other (other exposure identified)	2	0	1	1	2	0	1	1	1	2	0	0	0	0	0	1	0
NIR/Unknown (no identified exposure)	0	2	1	0	0	2	1	2	0	0	0	0	0	1	0	1	1

Figure 3.5 New HIV Diagnoses for Fraser Health by HSDA, 2009 Q1–2013 Q3



Fraser North	By Client Residence	12	13	7	8	7	6	6	6	6	6	7	4	3	6	5	6	7	11	13
	By Provider Address	*13*	*8*	*9*	*3*	*5*	*5*	*2*	*6*	*3*	*7*	*4*	*5*	*3*	*4*	*4*	*2*	*7*	*5*	*8*
Fraser East	By Client Residence	2	3	4	1	2	1	2	2	4	4	2	5	2	2	1	1	0	0	3
	By Provider Address	*2*	*3*	*3*	*1*	*4*	*1*	*1*	*1*	*4*	*4*	*2*	*2*	*2*	*0*	*1*	*0*	*0*	*0*	*2*
Fraser South	By Client Residence	13	11	10	3	8	12	11	9	2	8	6	0	6	2	4	7	2	5	6
	By Provider Address	*7*	*6*	*5*	*3*	*5*	*9*	*10*	*8*	*3*	*9*	*3*	*1*	*5*	*1*	*2*	*6*	*2*	*4*	*4*

"By Provider Address" is graphed as dashed line in same colour.

4 BCCDC: *Data lags by 6 months.*
MSM=men who have sex with men; IDU= injection drug user; HET=heterosexual. NIR=No identified risk/exposure.

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 Fraser Health, 2010–2012 [5]

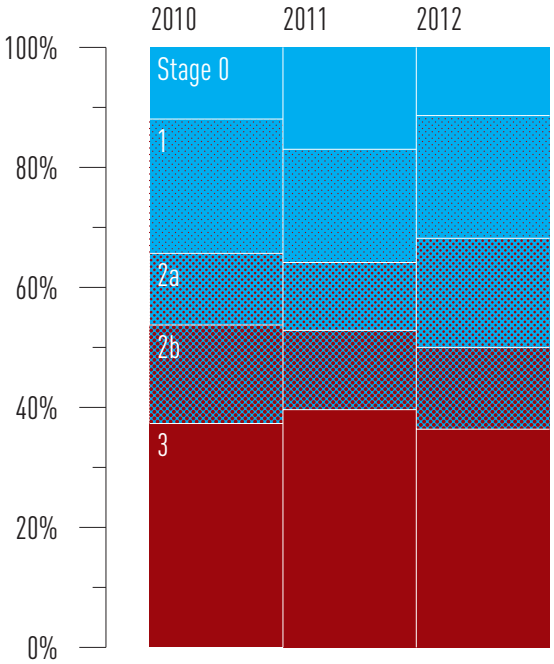
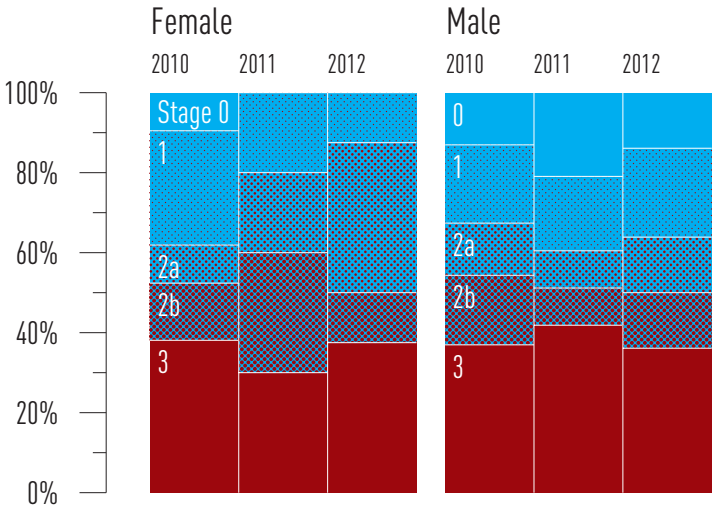


Figure 4.2 Stage of HIV Infection at Diagnosis by Gender for Fraser Health, 2010–2012 [5]



	Fraser Health			*Female*			*Male*		
	2010	2011	2012	2010	2011	2012	2010	2011	2012
Stage 0	8	9	5	2	0	0	6	9	5
Stage 1	15	10	9	6	2	1	9	8	8
Stage 2a	8	6	8	2	2	3	6	4	5
Stage 2b	11	7	6	3	3	1	8	4	5
Stage 3	25	21	16	8	3	3	17	18	13
Unknown	5	1	1	1	1	0	4	0	1
Total *(n=)*	72	54	45	22	11	8	50	43	37

5 *Data Source: BCCDC*

Figure 4.3 Stage of HIV Infection at Diagnosis by Age Category for Fraser Health, 2010–2012 [5]

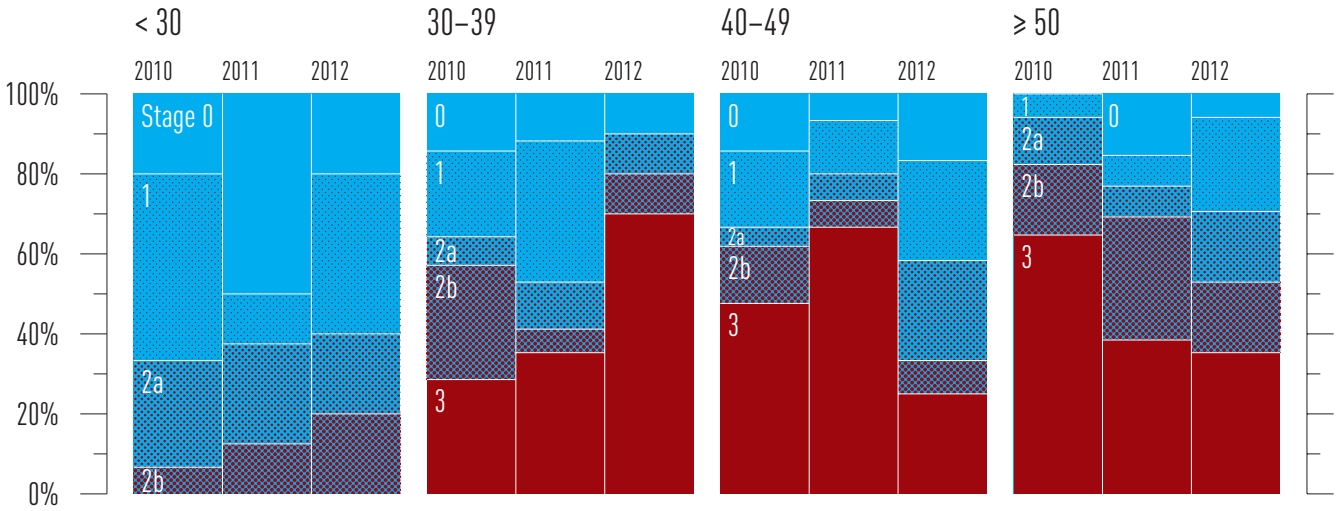
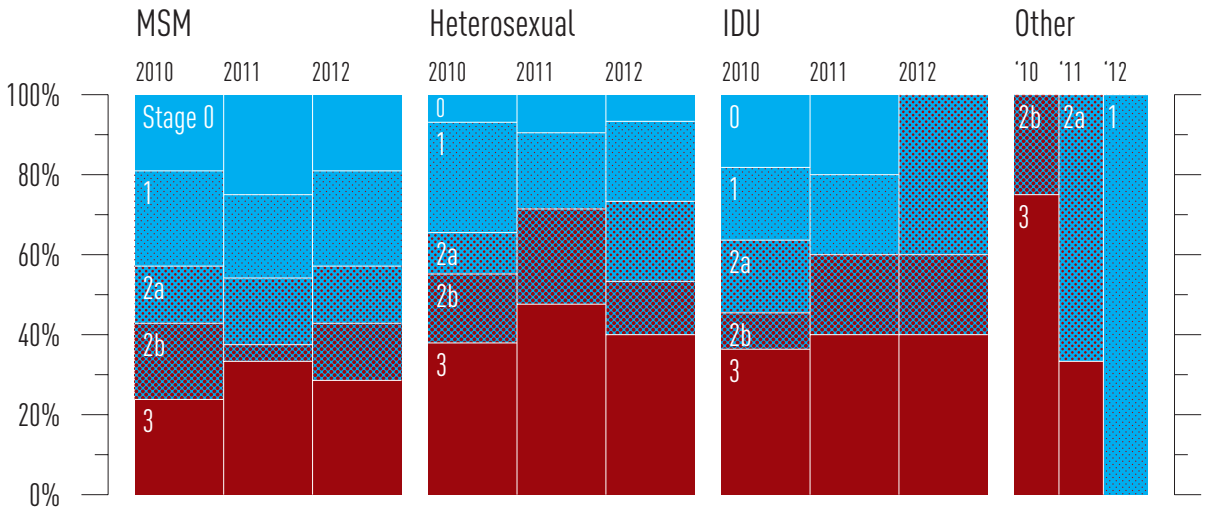


Figure 4.4 Stage of HIV Infection at Diagnosis by Exposure Category for Fraser Health, 2010–2012 [5,6]



	< 30 years			*30–39 years*			*40–49 years*			*≥ 50 years*			*MSM*			*HET*			*IDU*			*Other*			*NIR/Unknown*		
	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
Stage 0	3	4	1	2	2	1	3	1	2	0	2	1	4	6	4	2	2	1	2	1	0	0	0	0	0	0	0
Stage 1	7	1	2	3	6	0	4	2	3	1	1	4	5	5	5	8	4	3	2	1	0	0	0	1	0	0	0
Stage 2a	4	2	1	1	2	1	1	1	3	2	1	3	3	4	3	3	0	3	2	0	2	0	2	0	0	0	0
Stage 2b	1	1	1	4	1	1	3	1	1	3	4	3	4	1	3	5	5	2	1	1	1	1	0	0	0	0	0
Stage 3	0	0	0	4	6	7	10	10	3	11	5	6	5	8	6	11	10	6	4	2	2	3	1	0	2	0	2
Unknown	1	1	0	2	0	0	2	0	1	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	3	0	0
Total *(n=)*	16	9	5	16	17	10	23	15	13	17	13	17	22	24	22	30	22	15	11	5	5	4	3	1	5	0	2

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. Linkage to HIV care, 3. Retention in HIV care, 4. On ART and 5. 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 (ie. 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 Fraser Health, Year Ending 2013 Q3 [7]

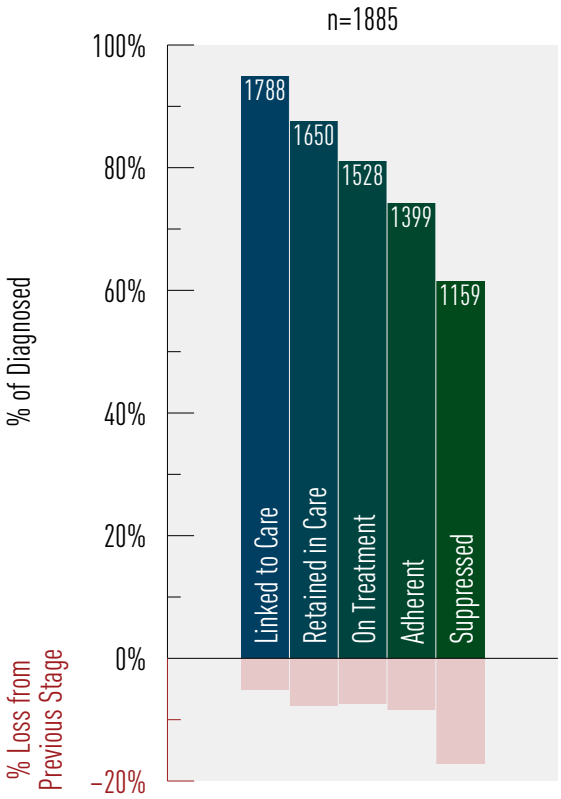
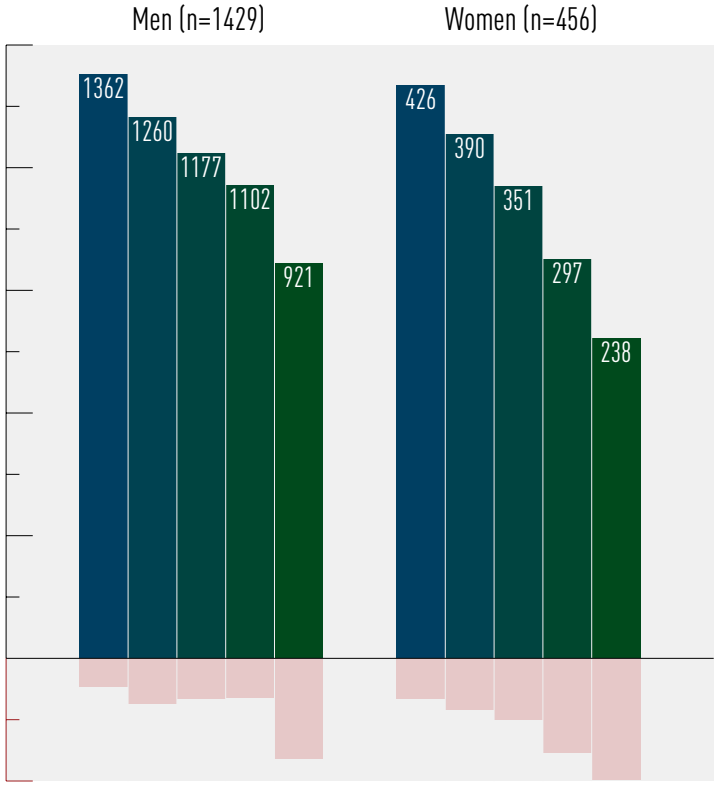


Figure 5.2 Estimated Cascade of Care for Fraser Health by Gender, Year Ending 2013 Q3 [8]

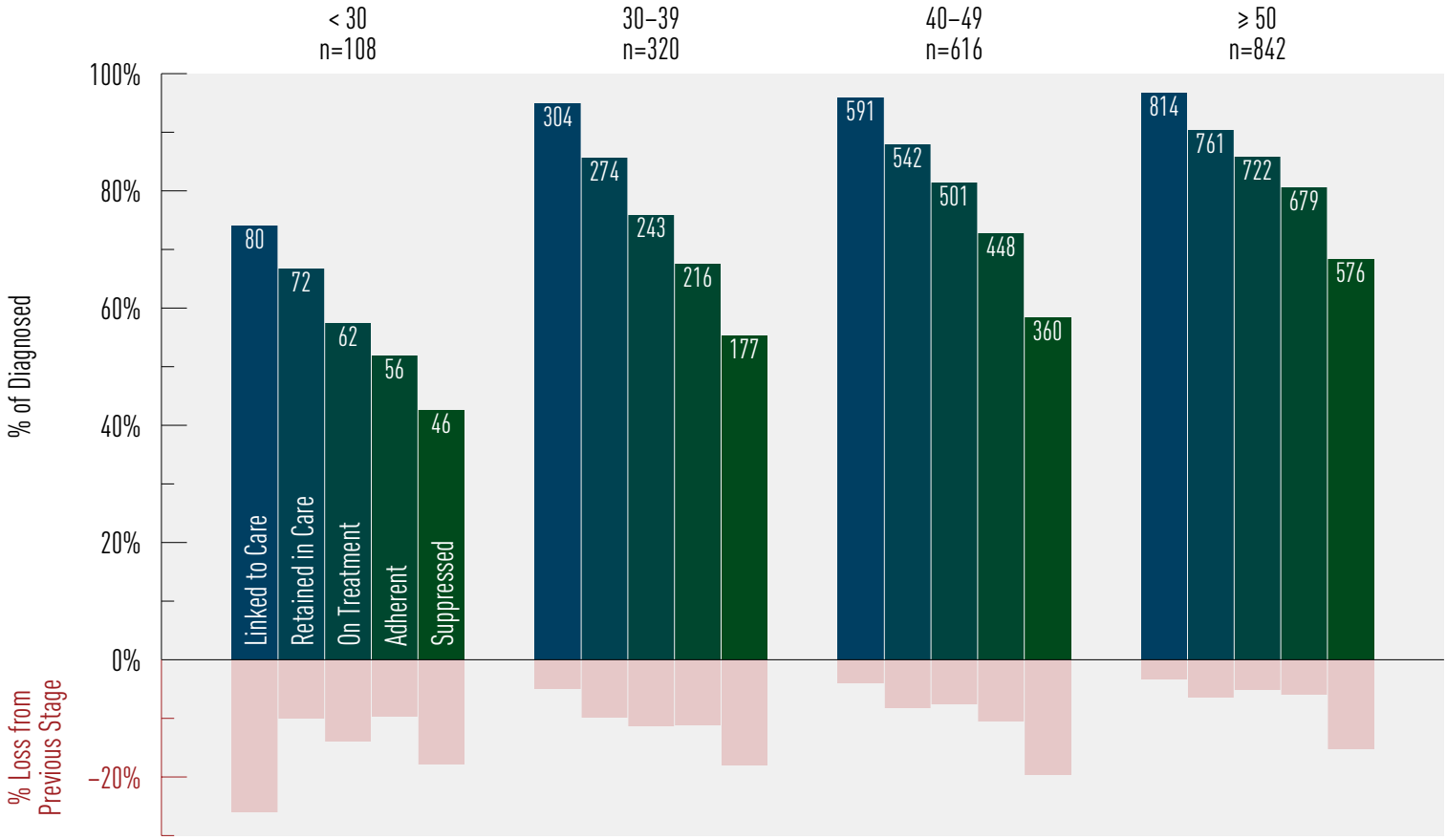


5,6 *Data is for the period 2012 Q3–2013 Q3.*
Data Sources:
1 *British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).*
2 *Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).*

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.

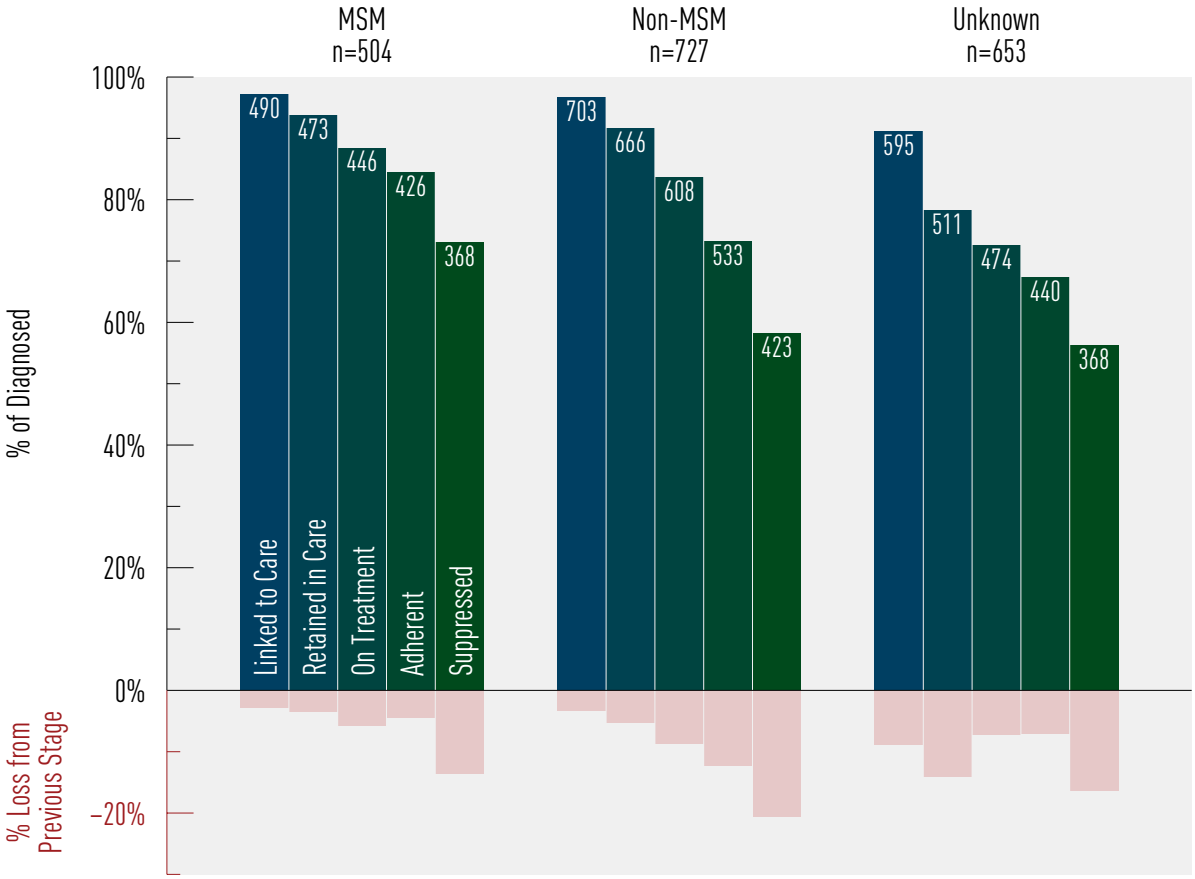
Figure 5.3 Estimated Cascade of Care for Fraser Health by Age Category, Year Ending 2013 Q3 [9]



7 *Data is for the period 2012 Q3–2013 Q3.*
Data Sources:
1 *British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).*
2 *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.

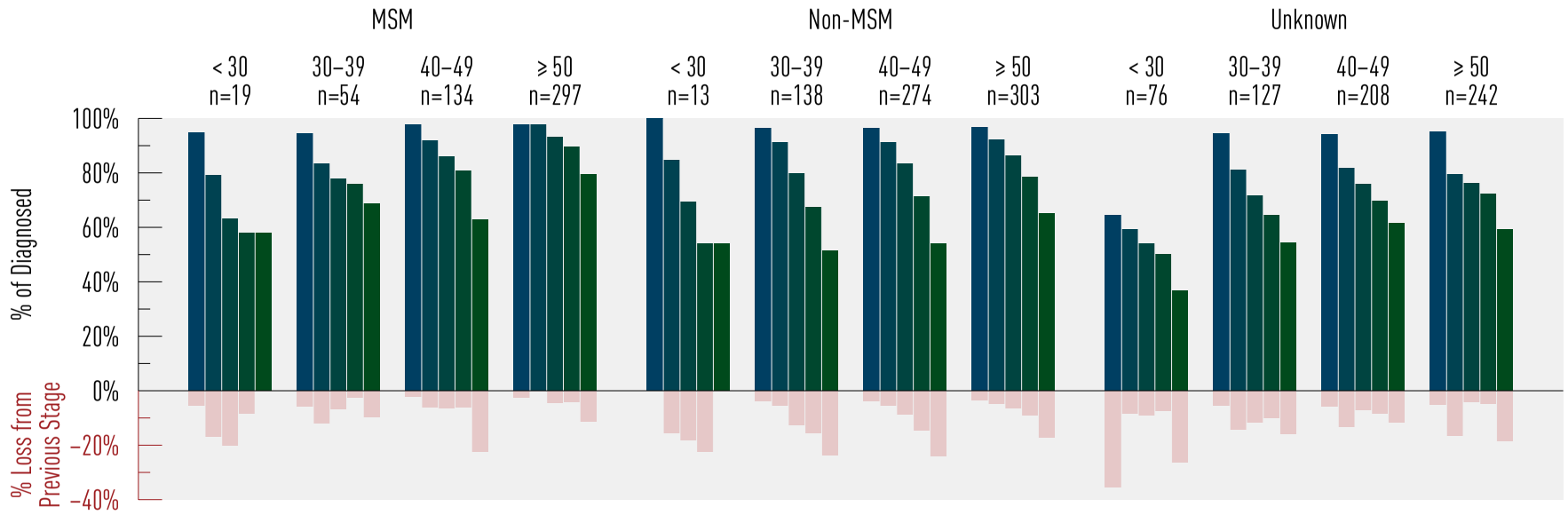
Figure 5.4 Estimated Cascade of Care for Fraser Health by MSM Status, Year Ending 2013 Q3 [10]



8 *Data is for the period 2012 Q3–2013 Q3.*
Data Sources:
1 *British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).*
2 *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.

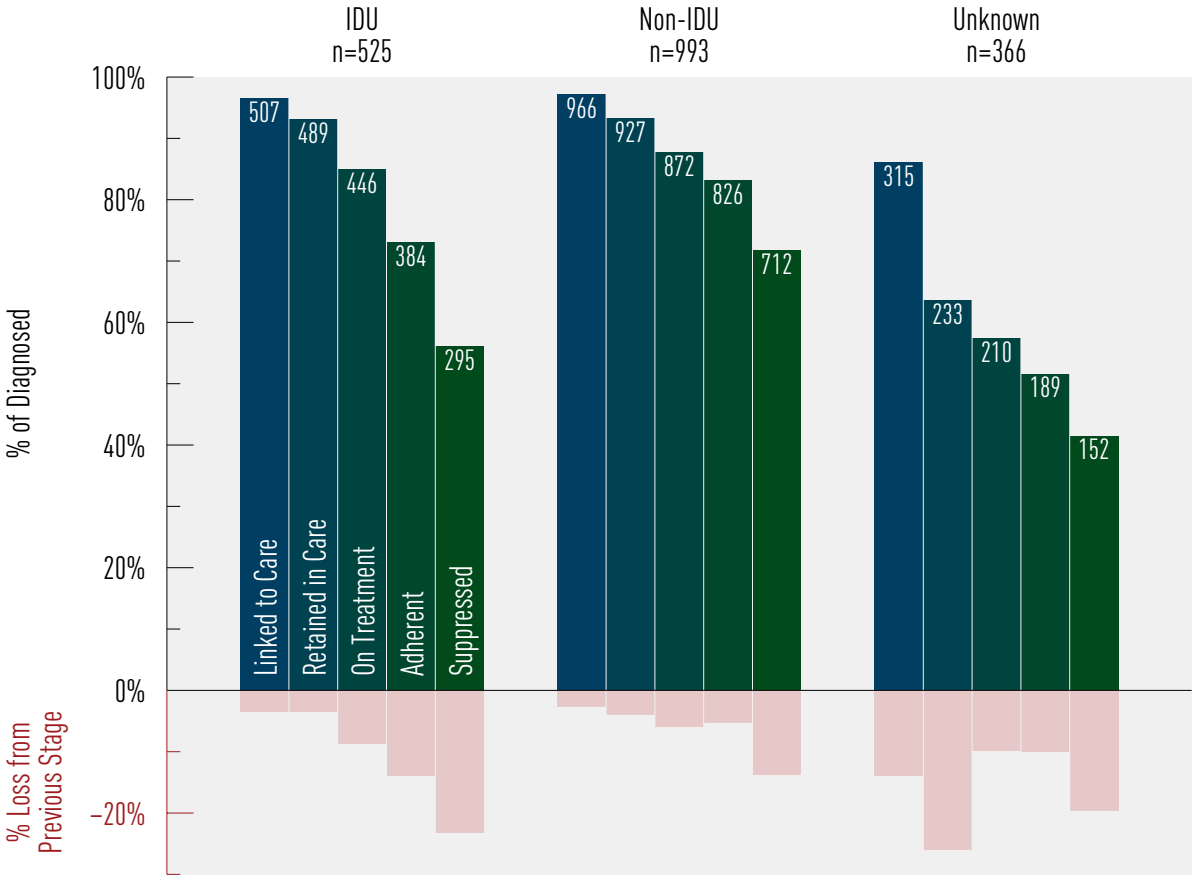
Figure 5.5 Estimated Cascade of Care for Fraser Health by Age Category and MSM Status, Year Ending 2013 Q3 [11]



9 *Data is for the period 2012 Q3–2013 Q3.*
Data Sources:
1 *British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).*
2 *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.

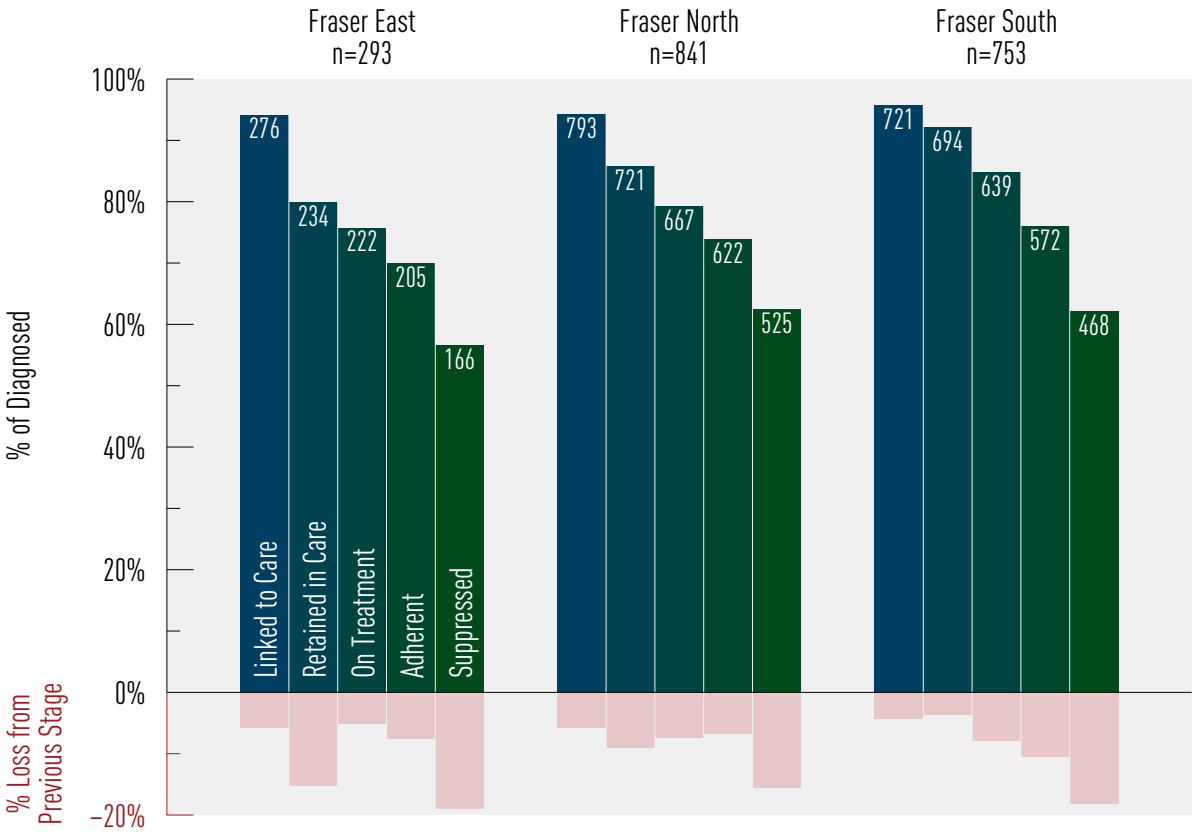
Figure 5.6 Estimated Cascade of Care for Fraser Health by History of IDU, Year Ending 2013 Q3 [12]



10 *Data is for the period 2012 Q3–2013 Q3.*
Data Sources:
1 *British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).*
2 *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 Fraser Health by HSDA, Year Ending 2013 Q3 [13]



11 *Data is for the period 2012 Q3–2013 Q3.*
Data Sources:
1 *British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).*
2 *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.

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 valida¬tion 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 Fraser Health, 2011 Q4–2013 Q3 [14]

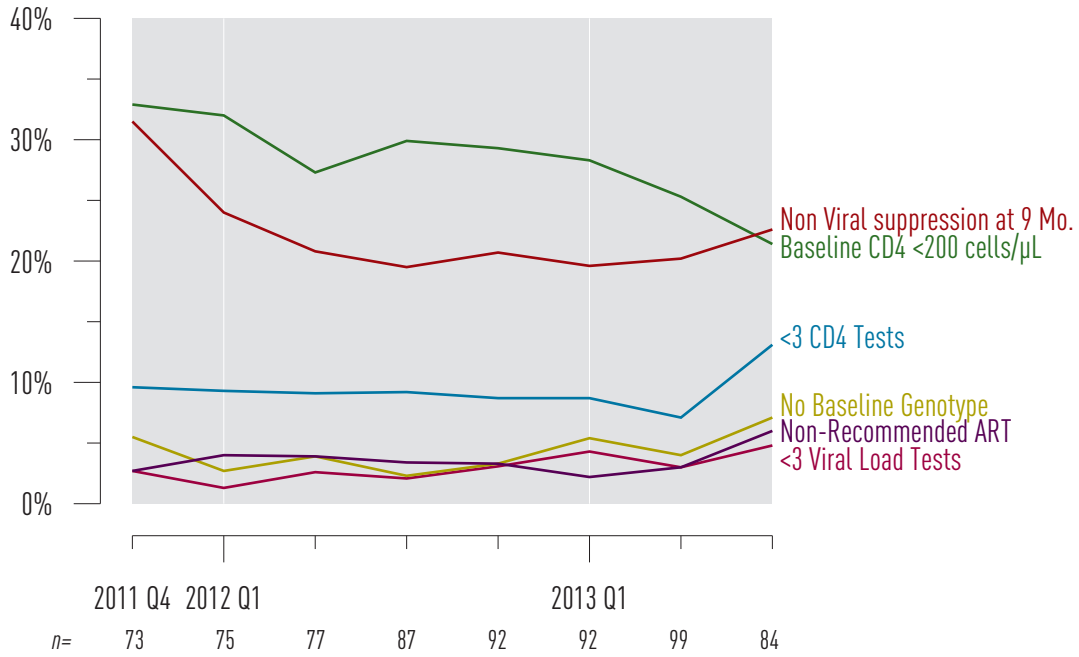
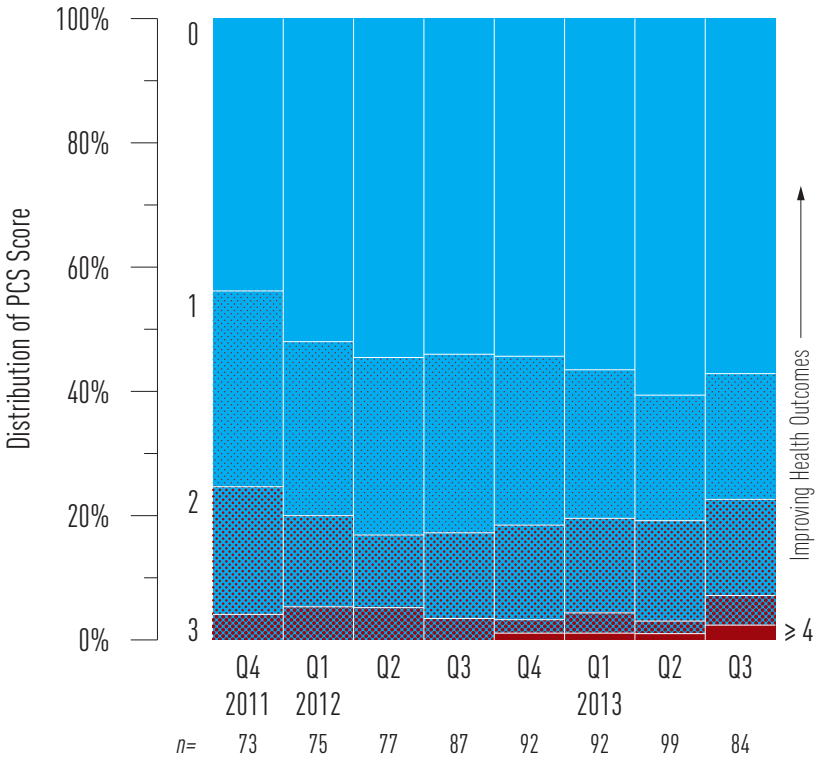


Figure 6.2 Historical Trends for PCS Score for Fraser Health, 2011 Q4–2013 Q3 [15]



NB: A score of 0 is the best score and a score of 4 or more is the worst score.

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

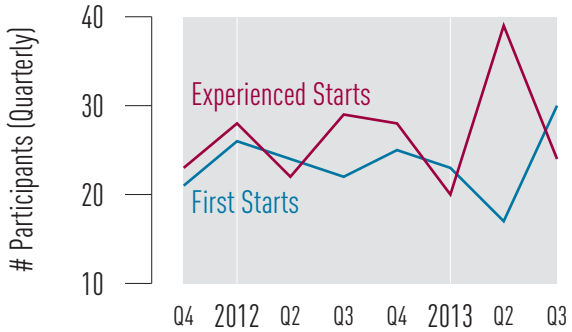
13 *Data Source: British Columbia Centre for Excellence Drug Treatment Program (DTP) Database.*
Each quarter's data is calculated as the sum of the 4 quarters leading up to it. e.g. 2012 Q1 is calculated from 2011 Q2 – 2012 Q1.

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.

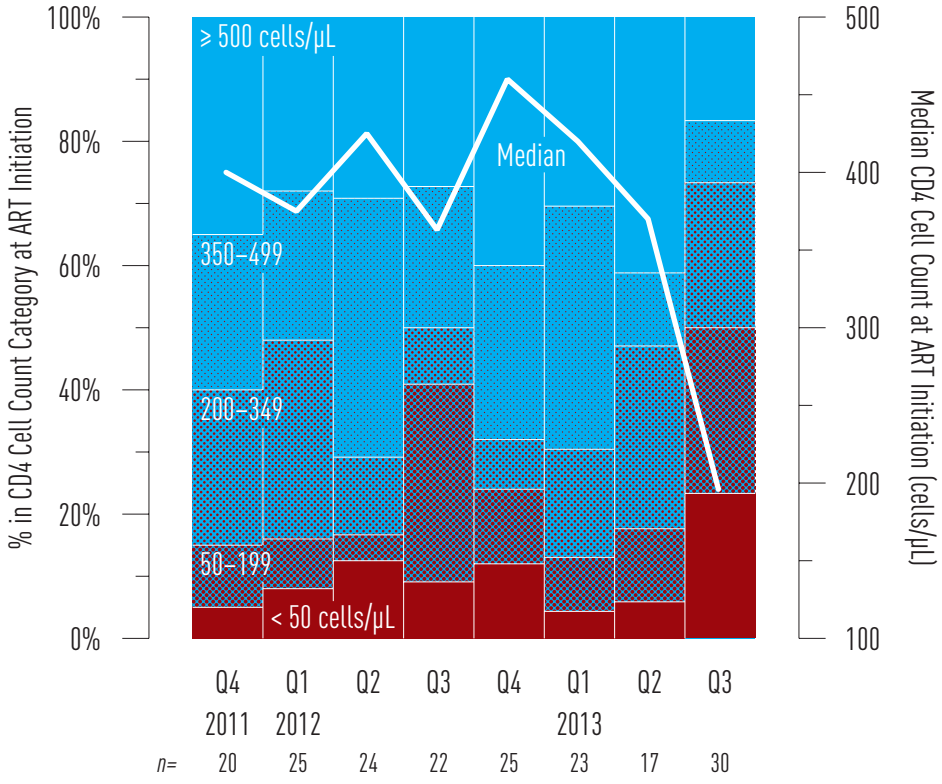
Indicator 7. New Antiretroviral Therapy Starts in Fraser Health

Figure 7 BC-CfE Drug Treatment Program Enrollment: New Antiretroviral Participants for Fraser Health, 2011 Q4–2013 Q3 [16]



Indicator 8. CD4 Cell Count at ART Initiation

Figure 8 CD4 Cell Count at ART Initiation of ART-Naïve DTP Participants for Fraser Health, 2011 Q4–2013 Q3 [17]



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

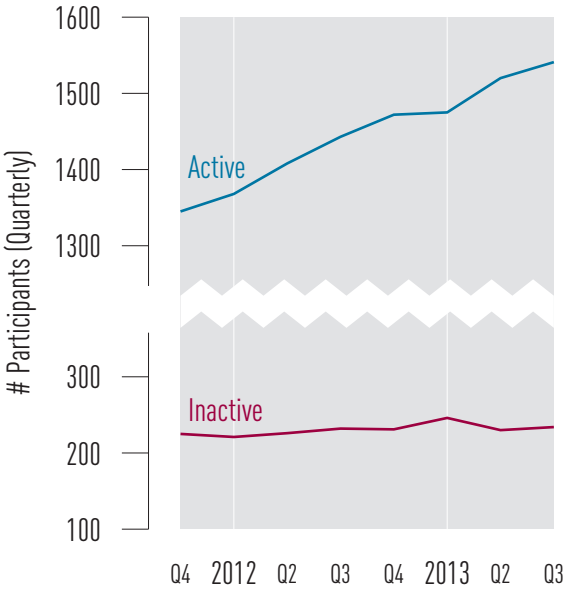
15 *Data Source: Drug Treatment Program Database*
Limitations: CD4 cell count data is approximately 80% complete.

Indicator 9. Active and Inactive DTP Participants

Table 3. Distribution of People on ART for Fraser Health, 2013 Q3 [16]

Age	< 30	64
	30–39	259
	40–49	516
	≥ 50	702
Gender	Male	1191
	Female	350
Exposure	MSM	451
	IDU	456
Total		1541

Figure 9 Active and Inactive DTP Participants for Fraser Health, 2011 Q4–2013 Q3 [19]



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

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

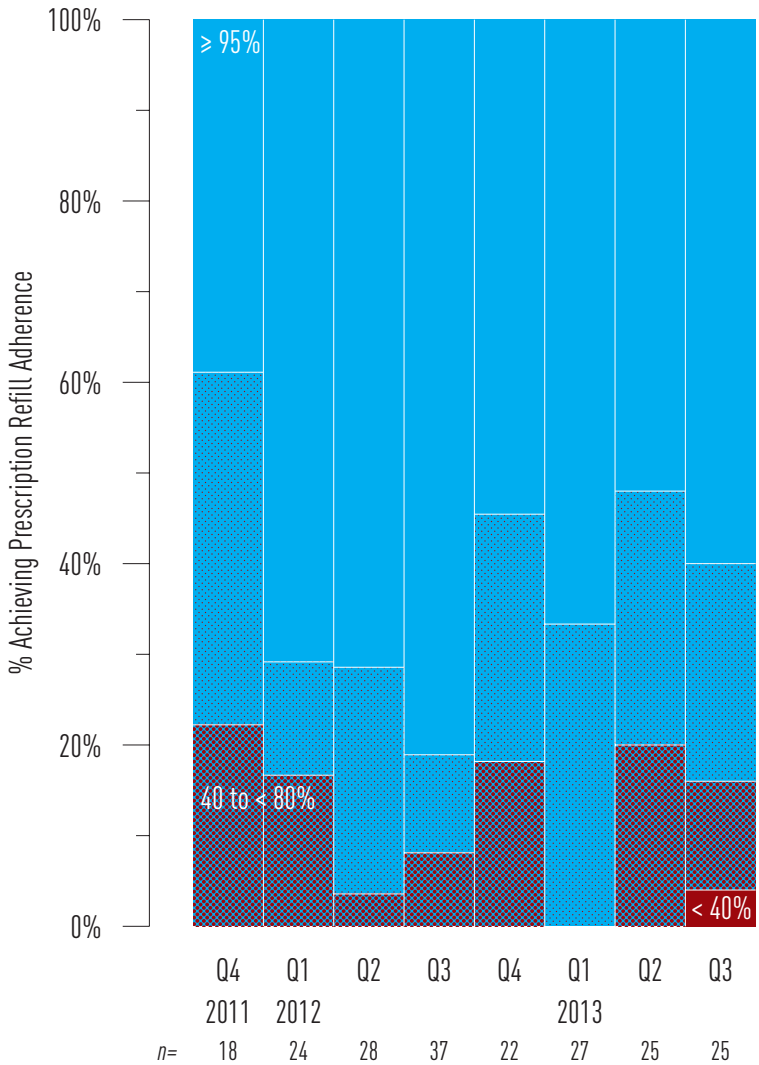
17 *Active DTP participants: are those who are prescribed one or more drugs in the last six months.*
Inactive DTP Participants: Persons no longer prescribed drugs through the HIV/AIDS Drug Treatment Program in the last quarter.

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 Fraser Health, 2011 Q4–2013 Q3 [20]

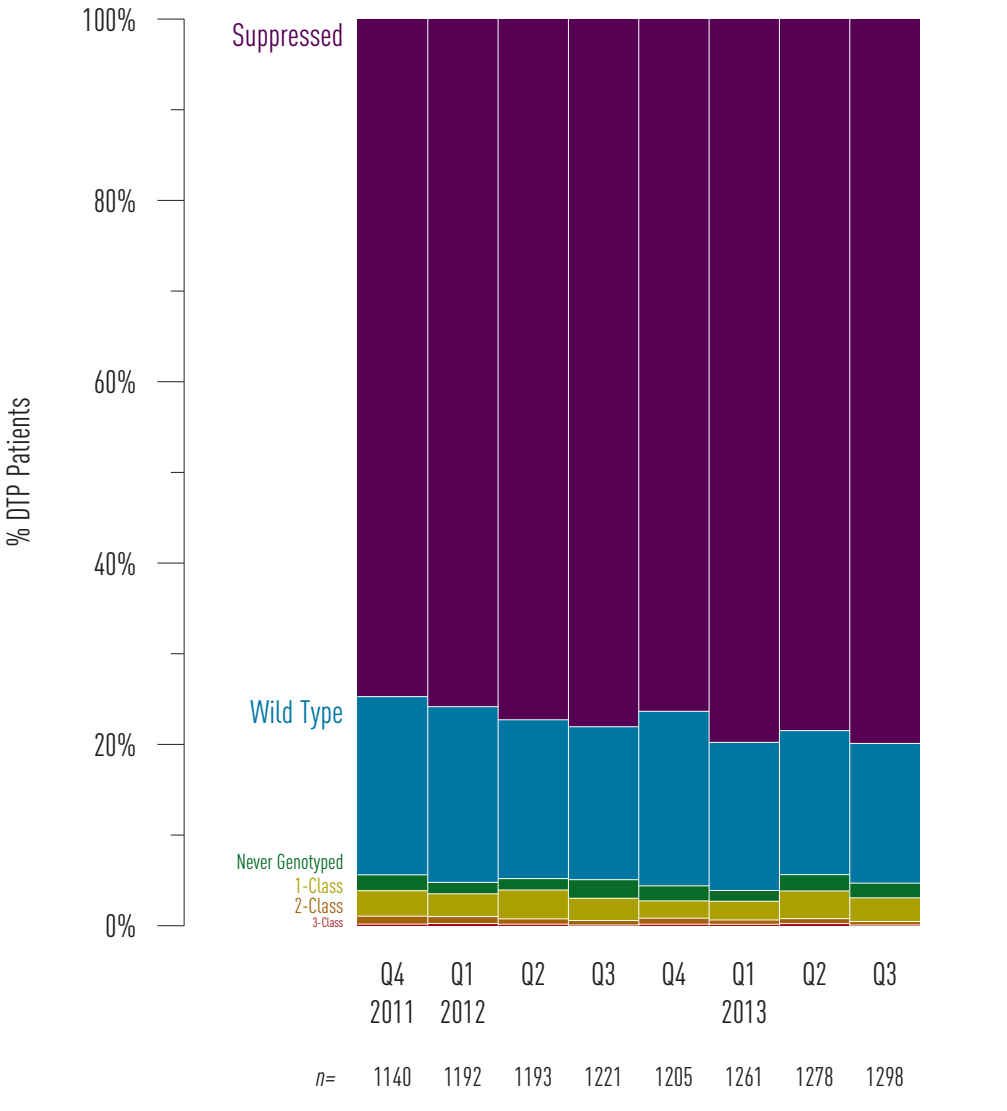


18 *Data Source: Drug Treatment Program Database*
Limitation: Prescription refill adherence is used as a proxy for patient adherence.

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 in Fraser Health, 2011 Q4–2013 Q3 [21]



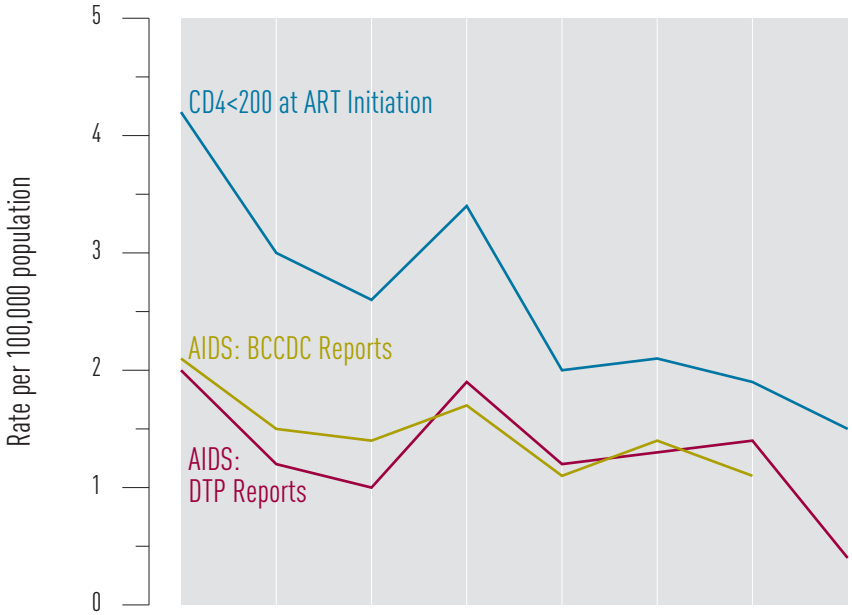
19 *Data Source: Drug Treatment Program Database*

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; as such, we have plotted DTP reported AIDS cases as well as the proportion of persons initiating ART with a CD4<200 cells/μL.

Figure 12 AIDS Case Rate and Reports for Fraser Health, 2005–2012 [22]



		2005	2006	2007	2008	2009	2010	2011	2012
CD4<200 at ART initiation	CASES	61	44	39	52	31	33	31	24
	PER 100K	4.2	3.0	2.6	3.4	2.0	2.1	1.9	1.5
AIDS: DTP Reports	CASES	30	18	15	29	19	21	23	6
	PER 100K	2.0	1.2	1.0	1.9	1.2	1.3	1.4	0.4
AIDS: BCCDC Reports	CASES	31	22	21	27	18	22	18	–
	PER 100K	2.1	1.5	1.4	1.7	1.1	1.4	1.1	–

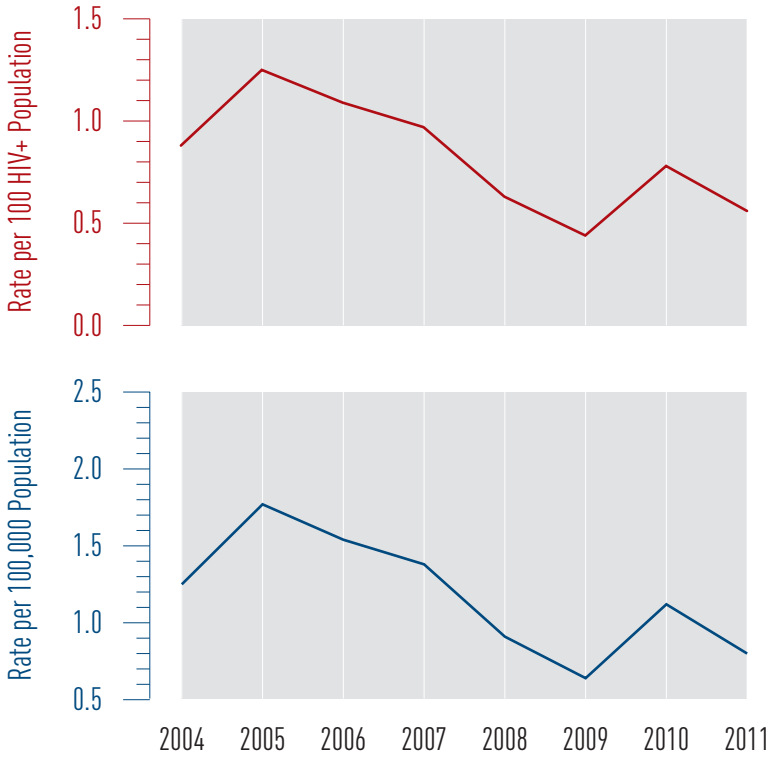
20 *Data Source: Drug Treatment Program Database*

Limitation: AIDS case reporting was investigated using 2 definitions: First, using AIDS cases reported in AIDS case report forms from the DTP, and second, 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. 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 Fraser Health, 2004–2011 [20]



	2004	2005	2006	2007	2008	2009	2010	2011
HIV-Related Deaths	18	26	23	21	14	10	18	13
Per 100 HIV+ Population	0.88	1.25	1.09	0.97	0.63	0.44	0.78	0.56
Per 100,000 Population	1.25	1.77	1.54	1.38	0.91	0.64	1.12	0.80

21 *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)**		2009 Q1	Q2	Q3	Q4	2010 Q1	Q2	Q3	Q4	2011 Q1	Q2	Q3	Q4	2012 Q1	Q2	Q3	Q4	2013 Q1	Q2	Q3
Fraser Health		13.0	12.4	12.3	11.6	13.0	12.3	12.5	12.4	13.1	12.2	13.0	13.0	14.4	14.2	15.1	15.6	17.9	18.4	18.2
Gender	Female	8.4	7.9	7.9	7.6	8.5	7.8	8.1	8.1	8.4	7.9	8.3	8.4	9.1	9.0	9.5	9.7	11.0	11.0	11.1
	Male	4.6	4.4	4.4	3.9	4.5	4.4	4.4	4.4	4.7	4.3	4.7	4.6	5.3	5.1	5.5	5.7	6.6	7.1	6.9
	Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Female (Prenatal)		4.4	4.0	3.9	4.0	4.2	3.9	4.1	4.2	4.4	4.0	3.9	4.1	4.4	4.0	4.1	4.0	4.4	4.1	4.1
Female (Non-prenatal)		4.0	4.0	4.0	3.6	4.2	4.0	4.0	3.9	4.0	3.9	4.3	4.3	4.7	4.9	5.4	5.7	6.6	7.0	7.0
Age	< 30	5.3	5.2	5.2	4.9	5.1	5.0	5.3	5.3	5.1	4.9	5.4	5.3	5.4	5.2	5.7	5.5	5.8	5.9	6.2
	30–39	4.5	4.1	4.1	3.9	4.6	4.2	4.2	4.1	4.7	4.2	4.4	4.3	5.0	4.8	4.9	4.8	5.8	5.6	5.5
	40–49	1.9	1.7	1.7	1.6	1.9	1.7	1.7	1.7	1.9	1.7	1.8	1.8	2.0	2.0	2.0	2.3	2.7	2.8	2.6
	≥ 50	1.3	1.3	1.3	1.2	1.5	1.3	1.3	1.3	1.5	1.3	1.4	1.6	2.0	2.1	2.4	2.8	3.4	3.9	3.7
POC HIV Tests (number not in thousands)									0	12	37	57	24	54	121	31	157	274	170	136
Fraser North		5.8	5.5	5.6	5.2	6.0	5.6	5.6	5.6	5.7	5.4	6.1	6.0	6.7	6.4	6.7	7.0	8.5	8.7	8.4
Fraser East		2.4	2.2	2.2	2.0	2.2	2.1	2.1	2.0	2.2	2.0	2.1	2.0	2.3	2.2	2.4	2.3	2.5	2.6	2.5
Fraser South		4.8	4.6	4.6	4.3	4.8	4.6	4.8	4.8	5.2	4.8	4.9	5.0	5.5	5.5	6.0	6.3	7.0	7.1	7.2

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

		2009	2010	2011	2012
Fraser Health		3385.8	3381.3	3439.2	3895.1
Fraser North		3753.1	3728.4	3830.2	4473.6
Fraser East		3252.5	3139.5	3090.8	3305.6
Fraser South		3124.6	3181.1	3245.0	3638.1
Gender	Female	4370.9	4351.8	4388.2	4874.3
	Male	2383.2	2391.6	2472.9	2896.3
Age	< 30	3588.3	3548.7	3556.7	3768.4
	30–39	8543.3	8744.9	8987.3	9519.4
	40–49	3011.7	3030.1	3167.6	3735.4
	≥ 50	1133.2	1169.2	1275.4	1935.0

Indicator 3: **New HIV Diagnoses**		2009 Q1	Q2	Q3	Q4	2010 Q1	Q2	Q3	Q4	2011 Q1	Q2	Q3	Q4	2012 Q1	Q2	Q3	Q4	2013 Q1	Q2	Q3
Fraser Health	By Client Residence	27	27	21	12	17	19	19	17	12	18	15	9	11	10	10	14	9	16	22
	By Provider Address	*22*	*17*	*17*	*7*	*14*	*15*	*13*	*15*	*10*	*20*	*9*	*8*	*10*	*5*	*7*	*8*	*9*	*9*	*14*
Gender	Female	6	6	9	4	6	8	3	5	1	5	4	1	0	3	2	3	1	3	4
	Male	21	21	12	8	11	11	16	12	11	13	11	8	11	7	8	11	8	13	18
Age	< 30	6	2	2	5	3	5	9	1	1	3	3	3	3	1	1	2	1	3	3
	30–39	5	12	7	3	6	2	2	6	3	9	3	1	1	3	2	2	3	4	7
	40–49	9	7	6	3	6	6	5	5	2	5	4	4	3	2	5	4	3	4	6
	≥ 50	7	6	6	1	2	6	3	5	6	1	5	1	4	4	2	6	2	5	6
Exposure	MSM	8	11	5	3	4	3	11	4	7	5	8	4	6	5	6	5	6	–	–
	IDU	8	3	5	2	2	4	3	2	1	4	0	0	4	0	0	1	0	–	–
	HET	9	11	9	6	9	10	3	8	3	7	7	5	1	4	4	6	2	–	–
	Other	2	0	1	1	2	0	1	1	1	2	0	0	0	0	0	1	0	–	–
	NIR	0	2	1	0	0	2	1	2	0	0	0	0	0	1	0	1	1	–	–
Fraser North	By Client Residence	12	13	7	8	7	6	6	6	6	6	7	4	3	6	5	6	7	11	13
	By Provider Address	*13*	*8*	*9*	*3*	*5*	*5*	*2*	*6*	*3*	*7*	*4*	*5*	*3*	*4*	*4*	*2*	*7*	*5*	*8*
Fraser East	By Client Residence	2	3	4	1	2	1	2	2	4	4	2	5	2	2	1	1	0	0	3
	By Provider Address	*2*	*3*	*3*	*1*	*4*	*1*	*1*	*1*	*4*	*4*	*2*	*2*	*2*	*0*	*1*	*0*	*0*	*0*	*2*
Fraser South	By Client Residence	13	11	10	3	8	12	11	9	2	8	6	0	6	2	4	7	2	5	6
	By Provider Address	*7*	*6*	*5*	*3*	*5*	*9*	*10*	*8*	*3*	*9*	*3*	*1*	*5*	*1*	*2*	*6*	*2*	*4*	*4*

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

	Fraser Health			Female			Male			< 30 years			30–39 years			40–49 years		
	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
Stage 0	8	9	5	2	0	0	6	9	5	3	4	1	2	2	1	3	1	2
Stage 1	15	10	9	6	2	1	9	8	8	7	1	2	3	6	0	4	2	3
Stage 2a	8	6	8	2	2	3	6	4	5	4	2	1	1	2	1	1	1	3
Stage 2b	11	7	6	3	3	1	8	4	5	1	1	1	4	1	1	3	1	1
Stage 3	25	21	16	8	3	3	17	18	13	0	0	0	4	6	7	10	10	3
Unknown	5	1	1	1	1	0	4	0	1	1	1	0	2	0	0	2	0	1
Total	72	54	45	22	11	8	50	43	37	16	9	5	16	17	10	23	15	13

	≥ 50 years			MSM			Heterosexual			IDU			Other Exposure			NIR/Unknown		
	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012	2010	2011	2012
Stage 0	0	2	1	4	6	4	2	2	1	2	1	0	0	0	0	0	0	0
Stage 1	1	1	4	5	5	5	8	4	3	2	1	0	0	0	1	0	0	0
Stage 2a	2	1	3	3	4	3	3	0	3	2	0	2	0	2	0	0	0	0
Stage 2b	3	4	3	4	1	3	5	5	2	1	1	1	1	0	0	0	0	0
Stage 3	11	5	6	5	8	6	11	10	6	4	2	2	3	1	0	2	0	2
Unknown	0	0	0	1	0	1	1	1	0	0	0	0	0	0	0	3	0	0
Total	17	13	17	22	24	22	30	22	15	11	5	5	4	3	1	5	0	2

Indicator 5: **HIV Cascade of Care**			DIAGNOSED	LINKED	RETAINED	ON ART	ADHERENT	SUPPRESSED
Fraser Health			1885	1788	1650	1528	1399	1159
Age Category	< 30		108	80	72	62	56	46
	30–39		320	304	274	243	216	177
	40–49		616	591	542	501	448	360
	≥ 50		842	814	761	722	679	576
Age Category and MSM Status	MSM	< 30	19	18	15	12	11	11
		30–39	54	51	45	42	41	37
		40–49	134	131	123	115	108	84
		≥ 50	297	290	290	277	266	236
	Non-MSM	< 30	13	13	11	9	7	7
		30–39	138	133	126	110	93	71
		40–49	274	264	250	228	195	148
		≥ 50	303	293	279	261	238	197
	Unknown	< 30	76	49	45	41	38	28
		30–39	127	120	103	91	82	69
		40–49	208	196	170	158	145	128
		≥ 50	242	230	192	184	175	143
Gender	Male		1429	1362	1260	1177	1102	921
	Female		456	426	390	351	297	238
Injection Drug Use	IDU		525	507	489	446	384	295
	Non-IDU		993	966	927	872	826	712
	Unknown		366	315	233	210	189	152
MSM Status	MSM		504	490	473	446	426	368
	Non-MSM		727	703	666	608	533	423
	Unknown		653	595	511	474	440	368
Health Authority	Fraser East		293	276	234	222	205	166
	Fraser North		841	793	721	667	622	525
	Fraser South		753	721	694	639	572	468

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

	2011 Q4	2012 Q1	Q2	Q3	Q4	2013 Q1	Q2	Q3
< 3 CD4 Tests	9.6%	9.3%	9.1%	9.2%	8.7%	8.7%	7.1%	13.1%
< 3 Viral Load Tests	2.7%	1.3%	2.6%	2.3%	3.3%	4.3%	3.0%	4.8%
No Baseline Genotype	5.5%	2.7%	3.9%	2.3%	3.3%	5.4%	4.0%	7.1%
Baseline CD4 < 200 cells/μL	32.9%	32.0%	27.3%	29.9%	29.3%	28.3%	25.3%	21.4%
Non-Recommended ART	2.7%	4.0%	3.9%	3.4%	3.3%	2.2%	3.0%	6.0%
Non Viral suppression at 9 Mo.	31.5%	24.0%	20.8%	19.5%	20.7%	19.6%	20.2%	22.6%
PCS Score: 0	32	39	42	47	50	52	60	48
PCS Score: 1	23	21	22	25	25	22	20	17
PCS Score: 2	15	11	9	12	14	14	16	13
PCS Score: 3	3	4	4	3	2	3	2	4
PCS Score: 4 or more	0	0	0	0	1	1	1	2
Total (n=)	**73**	**75**	**77**	**87**	**92**	**92**	**99**	**84**

Indicator 7: **New DTP ARV Participants**	2011 Q4	2012 Q1	Q2	Q3	Q4	2013 Q1	Q2	Q3
First Starts	22	25	23	22	24	22	17	28
Experienced Starts	22	28	22	30	28	20	39	25

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

CD4 ≥ 500	7	7	6	6	10	7	7	5
CD4 350–499	5	5	10	5	6	9	2	3
CD4 200–349	5	8	3	2	2	3	5	7
CD4 50–199	2	2	1	7	3	2	2	7
CD4 < 50	2	2	3	2	3	1	1	6
CD4 Median (cells/μL)	*380*	*358*	*420*	*363*	*460*	*425*	*370*	*211*
Total (n=)	**21**	**24**	**23**	**22**	**24**	**22**	**17**	**28**

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

Active DTP Participants	1345	1369	1406	1443	1467	1471	1513	1529
Inactive DTP Participants	270	267	270	273	273	286	269	272

Indicator 10: **Antiretroviral Adherence**

≥ 95%	7	17	20	30	12	18	13	15
80% to < 95%	7	3	7	4	5	9	7	6
40% to < 80%	4	4	2	3	4	0	4	3
< 40%	0	0	0	1	0	0	0	1
Total (n=)	**18**	**24**	**29**	**38**	**21**	**27**	**24**	**25**

Indicator 11: **Resistance Testing and Results**

Suppressed	852	904	922	953	920	1006	1003	1037
Wild Type	224	231	209	206	232	206	203	200
Never Genotyped	20	15	15	25	20	15	23	21
1-Class	32	30	38	30	23	26	39	34
2-Class	10	9	7	6	8	6	7	5
3-Class	2	3	2	1	2	2	3	1
Total (n=)	**1140**	**1192**	**1193**	**1221**	**1205**	**1261**	**1278**	**1298**

Indicator 12: **AIDS-Defining Illness**		2005	2006	2007	2008	2009	2010	2011	2012
CD4 < 200 at	Cases	61	44	39	52	31	33	31	24
ART initiation	*Rate per 100,000*	*4.2*	*3.0*	*2.6*	*3.4*	*2.0*	*2.1*	*1.9*	*1.5*
AIDS Cases	Cases	30	18	15	29	19	21	23	6
(DTP Reports)	*Rate per 100,000*	*2.0*	*1.2*	*1.0*	*1.9*	*1.2*	*1.3*	*1.4*	*0.4*
AIDS Cases	Cases	31	22	21	27	18	22	18	–
(BCCDC Reports)	*Rate per 100,000*	*2.1*	*1.5*	*1.4*	*1.7*	*1.1*	*1.4*	*1.1*	–

Indicator 13: **HIV-Related Mortality**	2004	2005	2006	2007	2008	2009	2010	2011
Fraser Health	18	26	23	21	14	10	18	13
Per 100 HIV+ Population	0.88	1.25	1.09	0.97	0.63	0.44	0.78	0.56
Per 100,000 Population	1.25	1.77	1.54	1.38	0.91	0.64	1.12	0.80