BRITISH COLUMBIA
CENTRE *for* EXCELLENCE
in HIV/AIDS

HIV MONITORING QUARTERLY REPORT

FOR FRASER HEALTH

FOURTH QUARTER 2014

* Please see foreword

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

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Foreword

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

The objectives of these reports are to:

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

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

** For Indicator 1, new figures (Figure 1.6 and 1.7 on page 13) have been added to 2014 Q4 report for the following: HIV Test Episodes for Non-prenatal Females in Fraser Health by HSDA and HIV Test Episodes for Males in Fraser Health by HSDA.*

For Indicator 5 (page 20) and 9 (page 29), recent updates to the DTP database have allowed for more comprehensive information on HIV risk group category. As a result, 2014 Q4 data may differ significantly from preceding reports in terms of total numbers ascribed to each risk group.

List of Indicators

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Acknowledgements and Contributions

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

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

Other Data Sources:

The above databases were supplemented with:

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

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

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

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

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

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

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

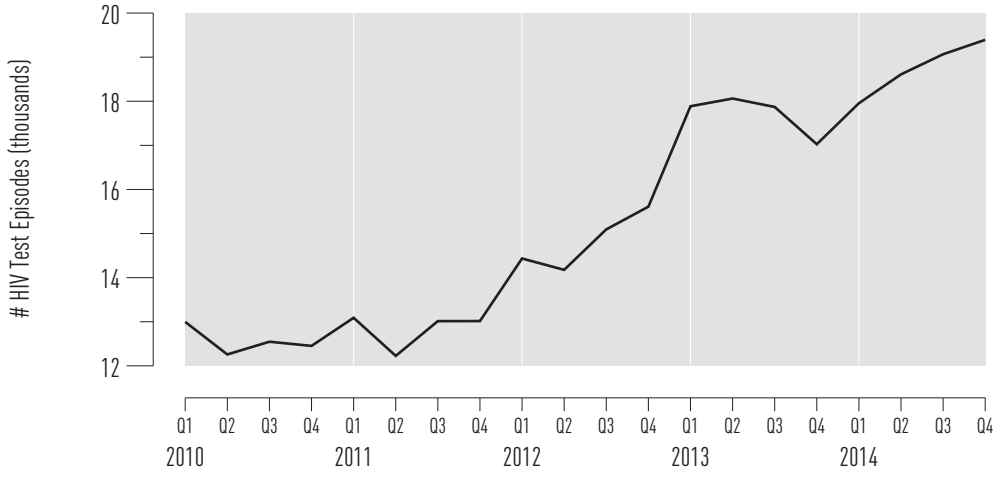
The goals of HA-led STOP-funded initiatives are to work toward achieving these goals. To these ends some outcome measures or indicators of progress have been drafted that should be considered in the design and implementation phases of these initiatives.

HIV Testing Episodes and Rates

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

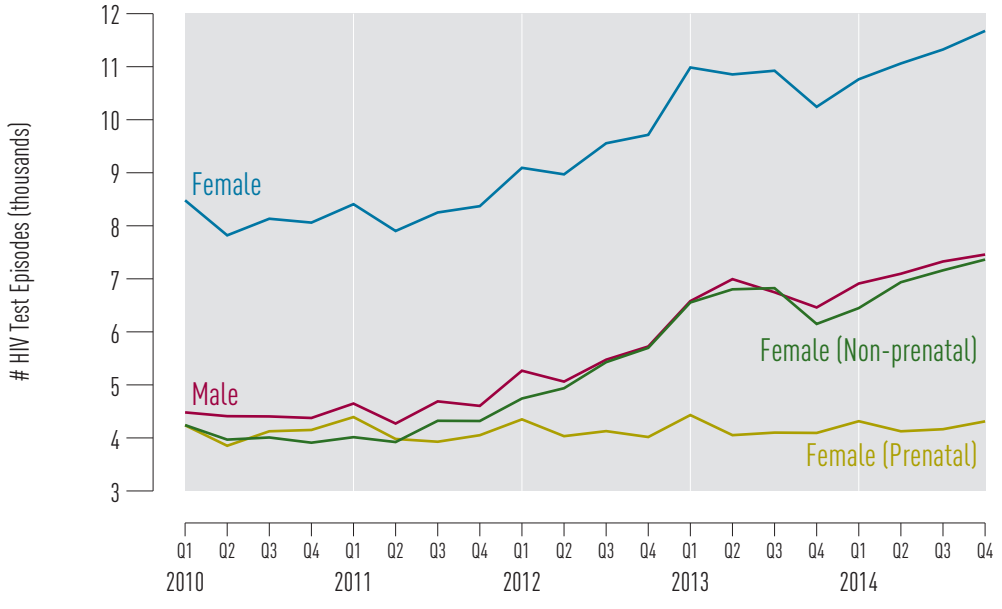
Indicator 1. HIV Testing Episodes

Figure 1.1 HIV Test Episodes for Fraser Health, 2010 Q1–2014 Q4



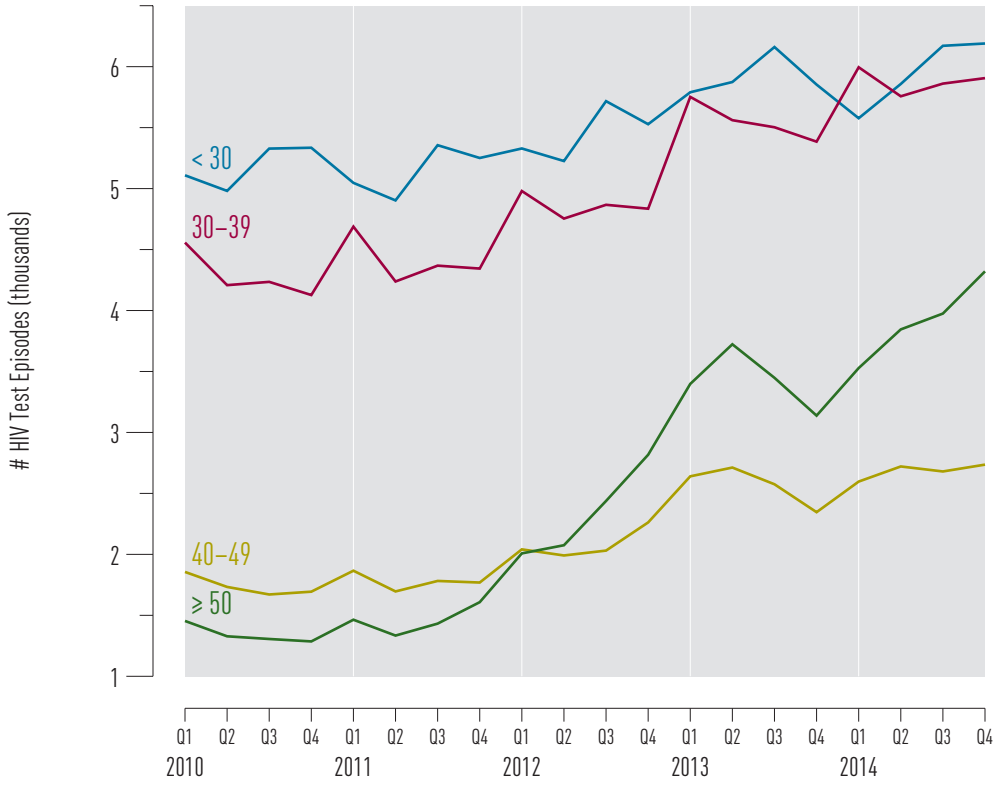
	2010 Q1	2010 Q2	2010 Q3	2010 Q4	2011 Q1	2011 Q2	2011 Q3	2011 Q4	2012 Q1	2012 Q2	2012 Q3	2012 Q4	2013 Q1	2013 Q2	2013 Q3	2013 Q4	2014 Q1	2014 Q2	2014 Q3	2014 Q4
Fraser Health	13.0	12.3	12.5	12.5	13.1	12.2	13.0	13.0	14.4	14.2	15.1	15.6	17.9	18.1	17.9	17.0	18.0	18.6	19.1	19.4

Figure 1.2 HIV Test Episodes by Gender and Prenatal Status for Fraser Health, 2010 Q1–2014 Q4 [1]



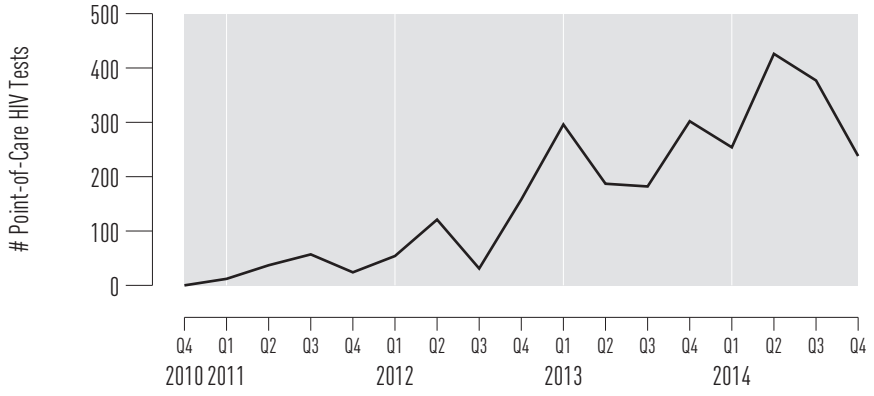
	2010 Q1	2010 Q2	2010 Q3	2010 Q4	2011 Q1	2011 Q2	2011 Q3	2011 Q4	2012 Q1	2012 Q2	2012 Q3	2012 Q4	2013 Q1	2013 Q2	2013 Q3	2013 Q4	2014 Q1	2014 Q2	2014 Q3	2014 Q4
Female	8.5	7.8	8.1	8.1	8.4	7.9	8.3	8.4	9.1	9.0	9.6	9.7	11.0	10.9	10.9	10.2	10.8	11.1	11.3	11.7
Male	4.5	4.4	4.4	4.4	4.6	4.3	4.7	4.6	5.3	5.1	5.5	5.7	6.6	7.0	6.7	6.5	6.9	7.1	7.3	7.5
Female (Prenatal)	4.2	3.9	4.1	4.2	4.4	4.0	3.9	4.1	4.3	4.0	4.1	4.0	4.4	4.1	4.1	4.1	4.3	4.1	4.2	4.3
Female (Non-prenatal)	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	6.8	6.8	6.1	6.4	6.9	7.2	7.4

Figure 1.3 HIV Test Episodes by Age Category for Fraser Health, 2010 Q1–2014 Q4 [1,2]



< 30	5.1	5.0	5.3	5.3	5.0	4.9	5.4	5.3	5.3	5.2	5.7	5.5	5.8	5.9	6.2	5.9	5.6	5.9	6.2	6.2
30–39	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	5.4	6.0	5.8	5.9	5.9
40–49	1.9	1.7	1.7	1.7	1.9	1.7	1.8	1.8	2.0	2.0	2.0	2.3	2.6	2.7	2.6	2.3	2.6	2.7	2.7	2.7
≥ 50	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	3.7	3.4	3.1	3.5	3.8	4.0	4.3

Figure 1.4 Point-of-Care HIV Tests for Fraser Health, 2010 Q4–2014 Q4



Fraser Health	0	12	37	57	24	54	121	31	158	296	187	182	302	254	426	377	238

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

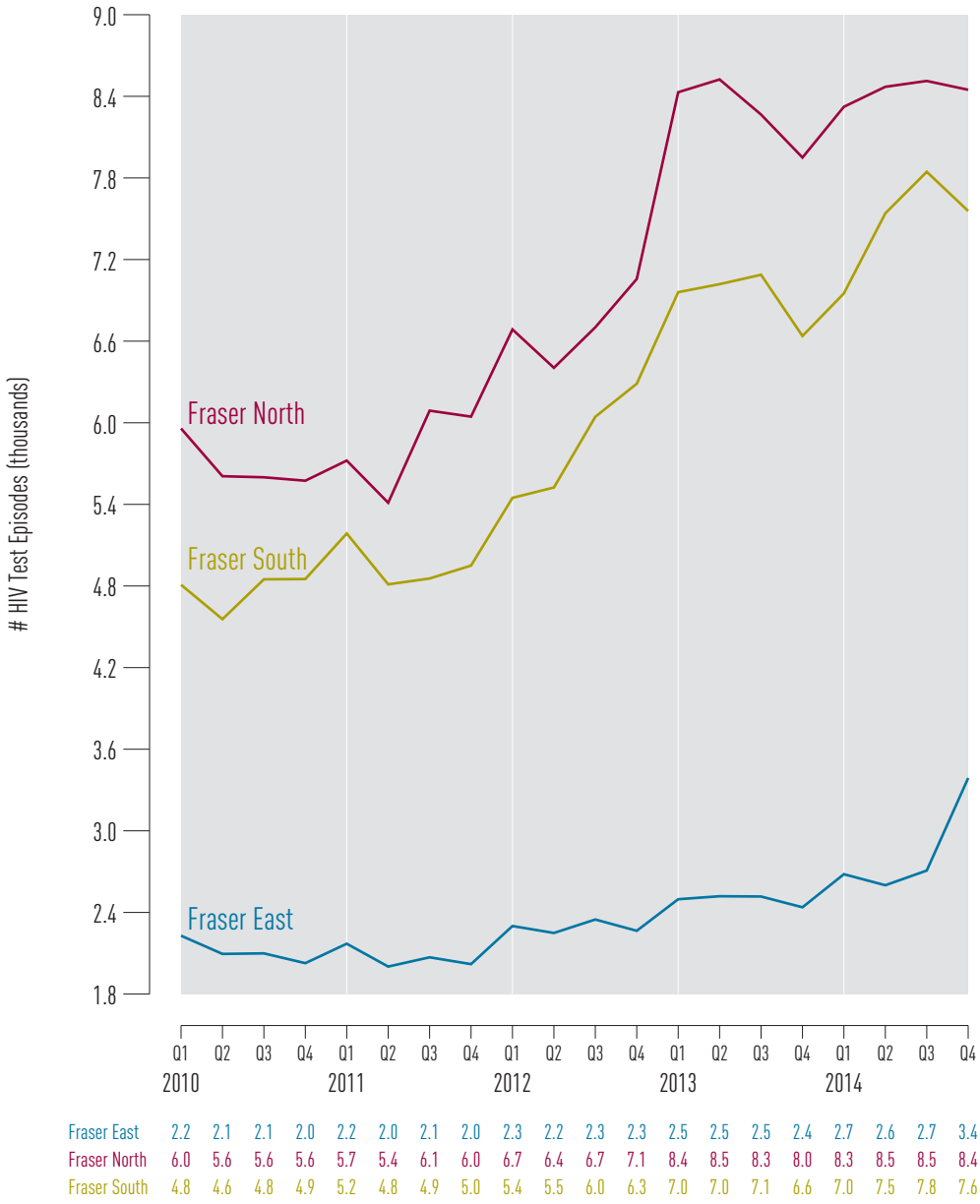
Limitations:

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

ii In Fraser Health, POC testing data are available from March 2011 forward.

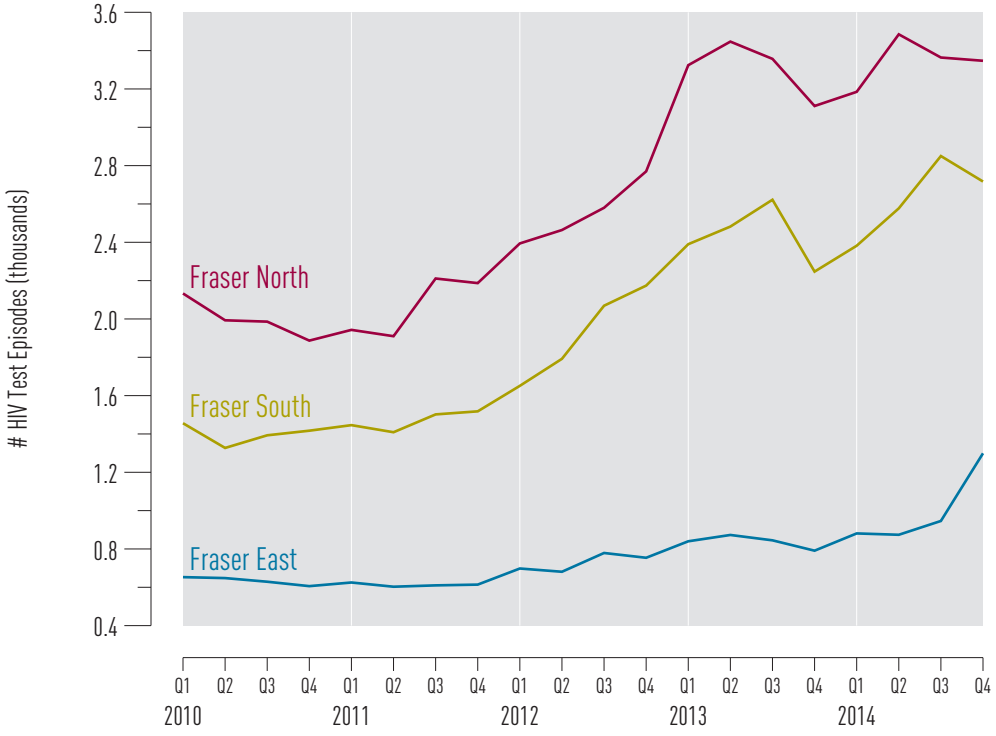
2 *Testing does not include point of care tests.*

Figure 1.5 HIV Test Episodes for Fraser Health by HSDA, 2010 Q1–2014 Q4 [1]



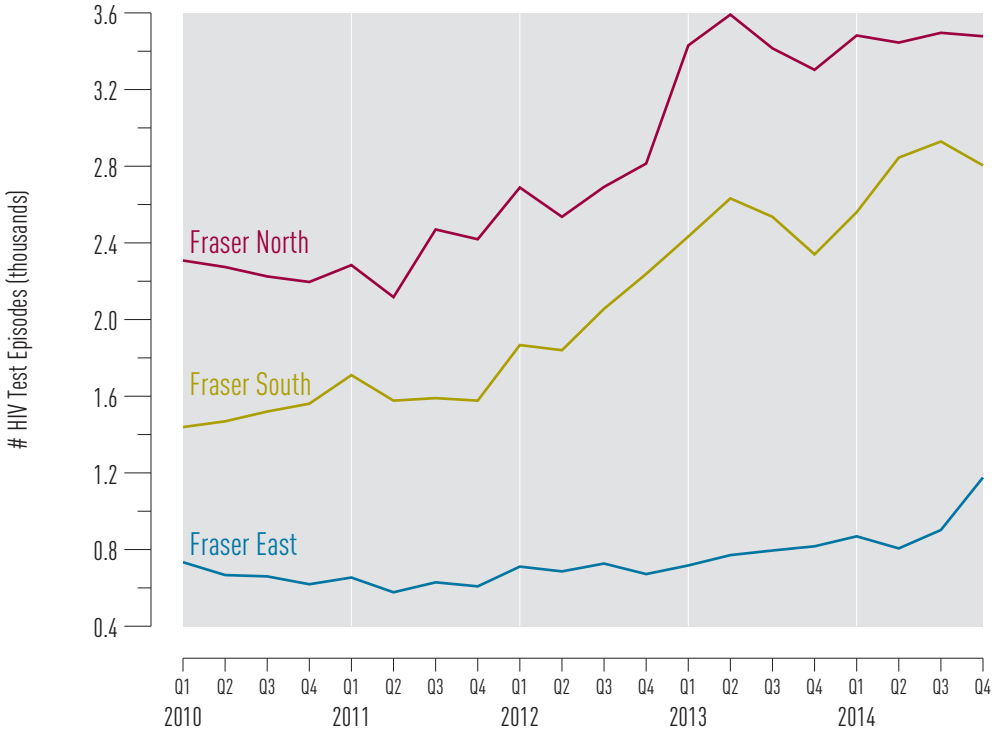
	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011	Q1 2012	Q2 2012	Q3 2012	Q4 2012	Q1 2013	Q2 2013	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014
Fraser East	2.2	2.1	2.1	2.0	2.2	2.0	2.1	2.0	2.3	2.2	2.3	2.3	2.5	2.5	2.5	2.4	2.7	2.6	2.7	3.4
Fraser North	6.0	5.6	5.6	5.6	5.7	5.4	6.1	6.0	6.7	6.4	6.7	7.1	8.4	8.5	8.3	8.0	8.3	8.5	8.5	8.4
Fraser South	4.8	4.6	4.8	4.9	5.2	4.8	4.9	5.0	5.4	5.5	6.0	6.3	7.0	7.0	7.1	6.6	7.0	7.5	7.8	7.6

Figure 1.6 HIV Test Episodes for Non-prenatal Females in Fraser Health by HSDA, 2010 Q1–2014 Q4 [1]



Fraser East	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.9	0.8	0.8	0.9	0.9	0.9	1.3
Fraser North	2.1	2.0	2.0	1.9	1.9	1.9	2.2	2.2	2.4	2.5	2.6	2.8	3.3	3.4	3.4	3.1	3.2	3.5	3.4	3.3
Fraser South	1.5	1.3	1.4	1.4	1.4	1.4	1.5	1.5	1.7	1.8	2.1	2.2	2.4	2.5	2.6	2.2	2.4	2.6	2.9	2.7

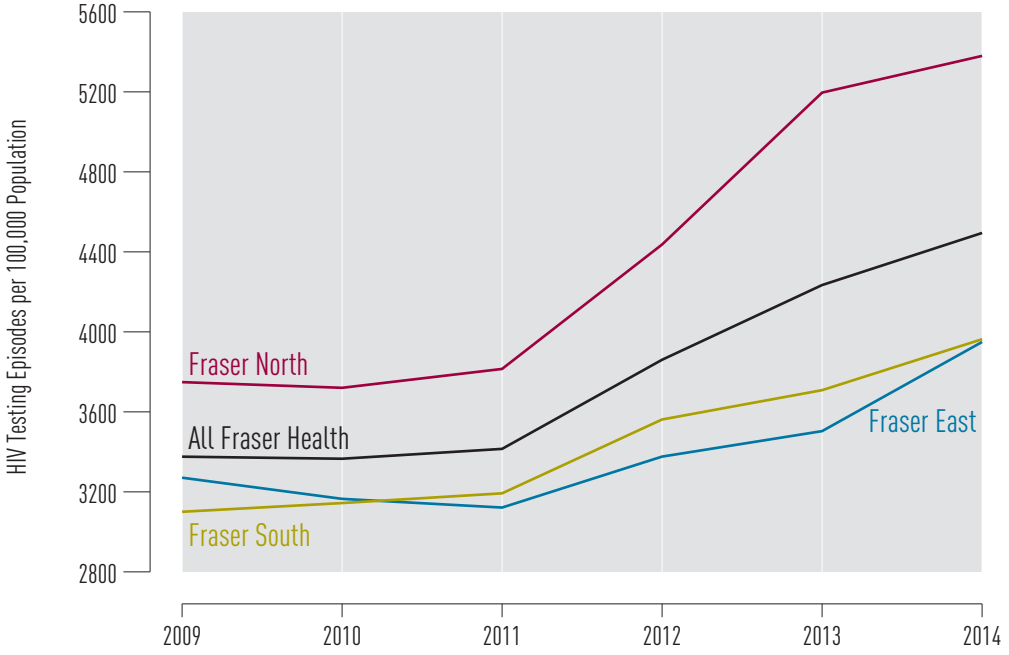
Figure 1.7 HIV Test Episodes for Males in Fraser Health by HSDA, 2010 Q1–2014 Q4 [1]



Fraser East	0.7	0.7	0.7	0.6	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.8	0.9	1.2
Fraser North	2.3	2.3	2.2	2.2	2.3	2.1	2.5	2.4	2.7	2.5	2.7	2.8	3.4	3.6	3.4	3.3	3.5	3.4	3.5	3.5
Fraser South	1.4	1.5	1.5	1.6	1.7	1.6	1.6	1.6	1.9	1.8	2.1	2.2	2.4	2.6	2.5	2.3	2.6	2.8	2.9	2.8

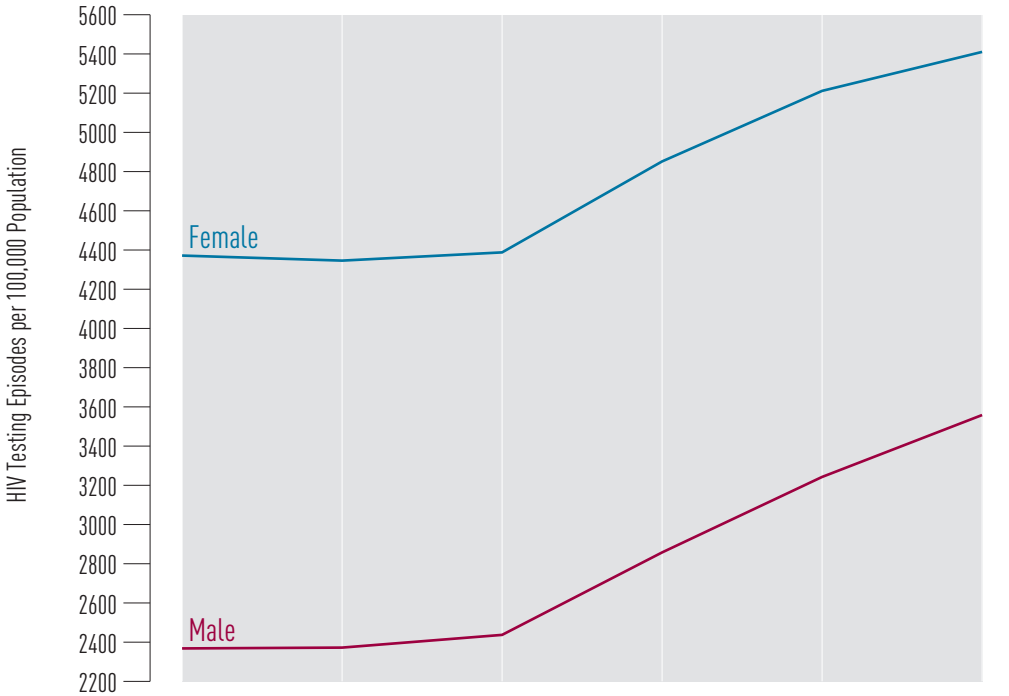
Indicator 2. HIV Testing Rates

Figure 2.1 Rate of HIV Testing for Fraser Health and HSDAs, 2009–2014 [2]



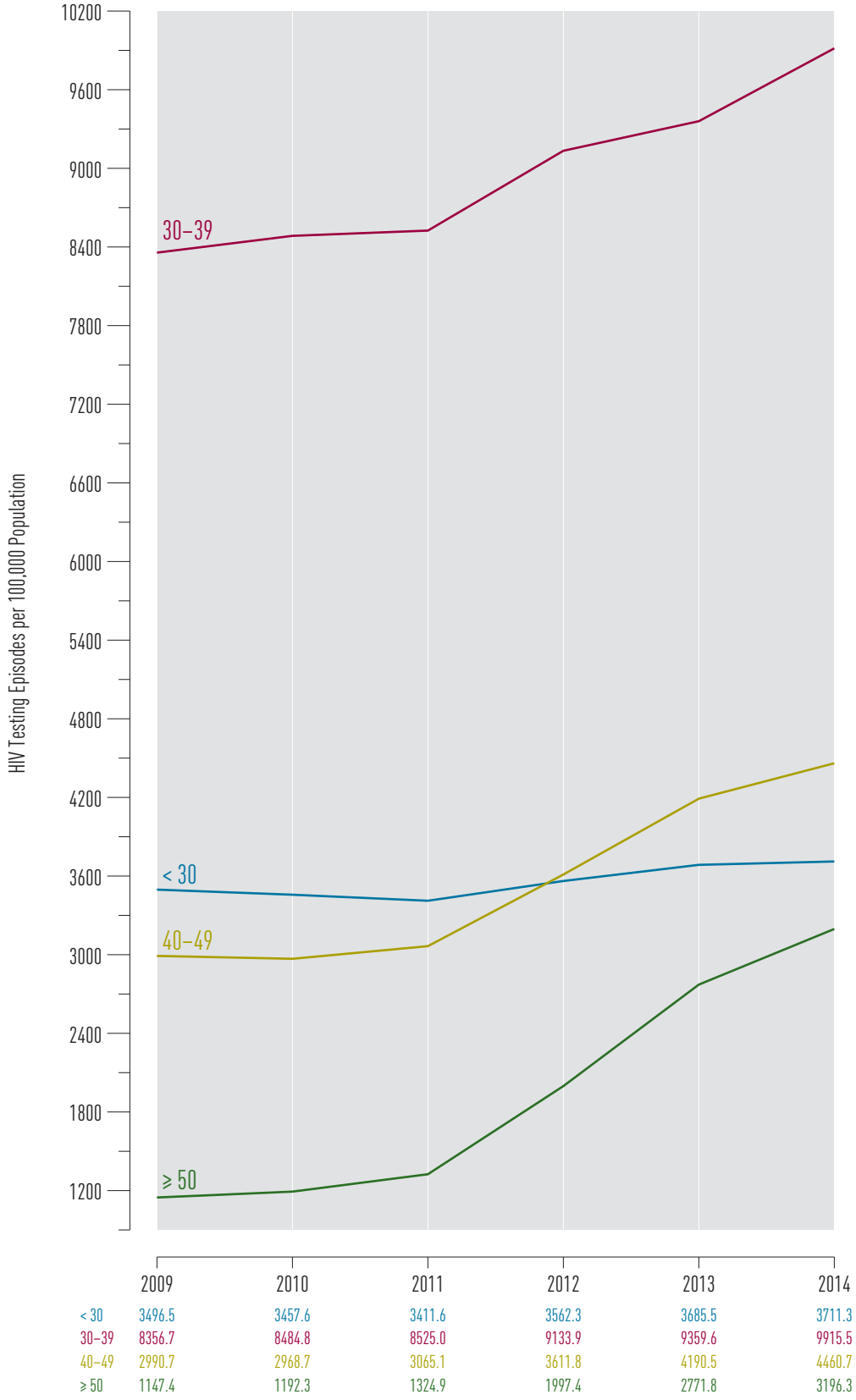
	2009	2010	2011	2012	2013	2014
All Fraser Health	3375.9	3365.6	3414.9	3860.5	4234.0	4494.5
Fraser East	3270.8	3165.0	3121.5	3376.3	3503.7	3949.4
Fraser North	3748.7	3720.2	3814.6	4436.8	5196.2	5379.8
Fraser South	3100.4	3144.0	3192.7	3561.9	3708.5	3963.2

Figure 2.2 Rate of HIV Testing by Gender for Fraser Health, 2009–2014 [2]



	2009	2010	2011	2012	2013	2014
Female	4371.7	4345.9	4387.9	4851.8	5211.6	5410.4
Male	2368.1	2372.3	2437.2	2857.7	3242.7	3558.4

Figure 2.3 Rate of HIV Testing by Age Category for Fraser Health, 2009–2014 [2]



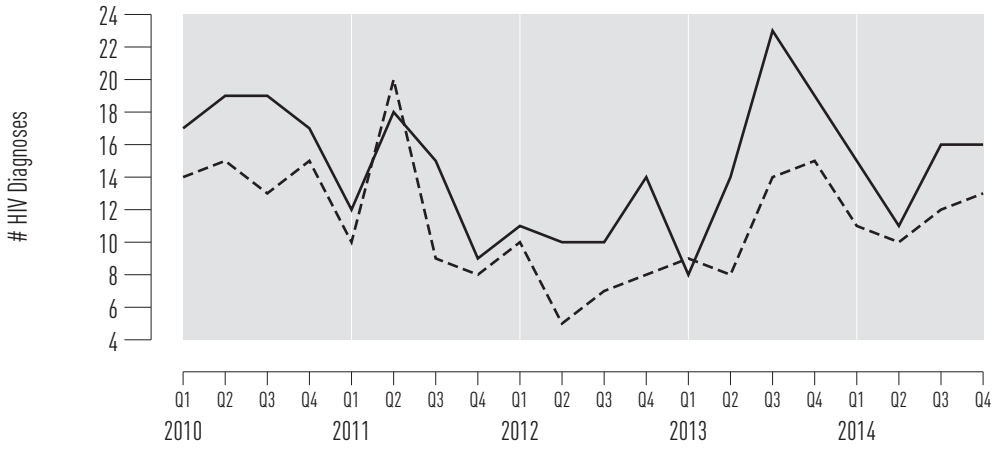
2 *Testing does not include point of care tests.*

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.

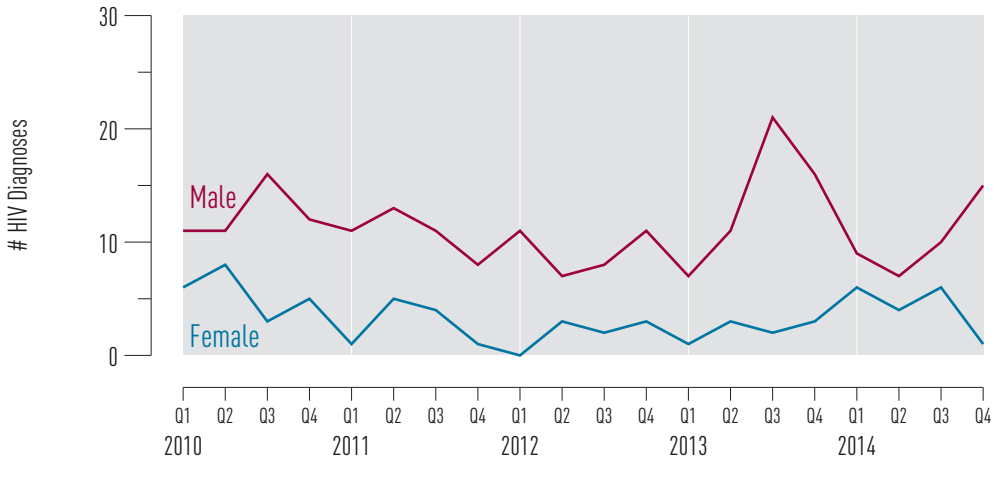
Indicator 3. New HIV Diagnoses

Figure 3.1 New HIV Diagnoses for Fraser Health, 2010 Q1–2014 Q4 [3]



Fraser Health	17	19	19	17	12	18	15	9	11	10	10	14	8	14	23	19	15	11	16	16
By Provider Address	*14*	*15*	*13*	*15*	*10*	*20*	*9*	*8*	*10*	*5*	*7*	*8*	*9*	*8*	*14*	*15*	*11*	*10*	*12*	*13*

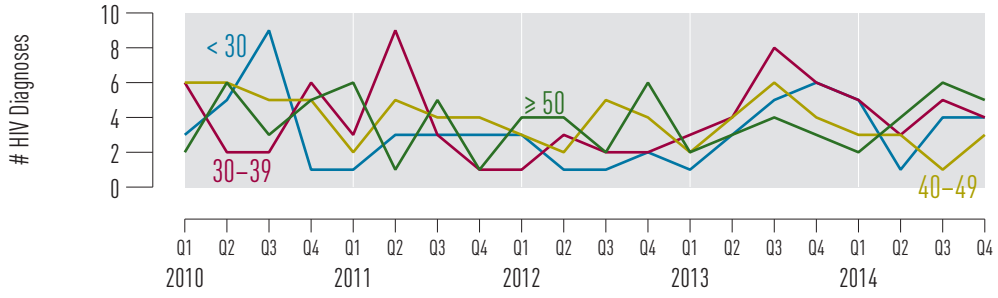
Figure 3.2 New HIV Diagnoses for Fraser Health by Gender, 2010 Q1–2014 Q4 [3]



Female	6	8	3	5	1	5	4	1	0	3	2	3	1	3	2	3	6	4	6	1
Male	11	11	16	12	11	13	11	8	11	7	8	11	7	11	21	16	9	7	10	15

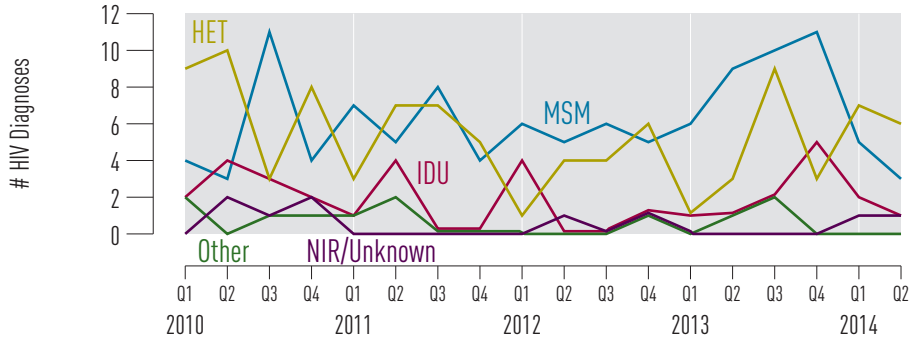
3 *Data Source: BCCDC. "By Provider Address" is graphed as dashed line in same colour.*

Figure 3.3 New HIV Diagnoses for Fraser Health by Age Category, 2010 Q1–2014 Q4 [3]



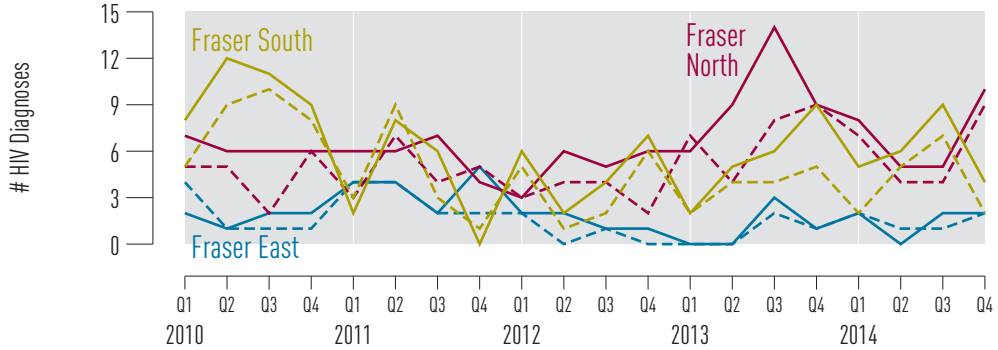
< 30	3	5	9	1	1	3	3	3	3	1	1	2	1	3	5	6	5	1	4	4
30–39	6	2	2	6	3	9	3	1	1	3	2	2	3	4	8	6	5	3	5	4
40–49	6	6	5	5	2	5	4	4	3	2	5	4	2	4	6	4	3	3	1	3
≥ 50	2	6	3	5	6	1	5	1	4	4	2	6	2	3	4	3	2	4	6	5

Figure 3.4 New HIV Diagnoses for Fraser Health by Exposure Category, 2010 Q1–2014 Q2 [3,4]



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

Figure 3.5 New HIV Diagnoses for Fraser Health by HSDA, 2010 Q1–2014 Q4 [3]



Fraser East	2	1	2	2	4	4	2	5	2	2	1	1	0	0	3	1	2	0	2	2
by Provider Address	*4*	*1*	*1*	*1*	*4*	*4*	*2*	*2*	*2*	*0*	*1*	*0*	*0*	*0*	*2*	*1*	*2*	*1*	*1*	*2*
Fraser North	7	6	6	6	6	6	7	4	3	6	5	6	6	9	14	9	8	5	5	10
by Provider Address	*5*	*5*	*2*	*6*	*3*	*7*	*4*	*5*	*3*	*4*	*4*	*2*	*7*	*4*	*8*	*9*	*7*	*4*	*4*	*9*
Fraser South	8	12	11	9	2	8	6	0	6	2	4	7	2	5	6	9	5	6	9	4
by Provider Address	*5*	*9*	*10*	*8*	*3*	*9*	*3*	*1*	*5*	*1*	*2*	*6*	*2*	*4*	*4*	*5*	*2*	*5*	*7*	*2*

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

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

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, 2010–2013 [5]

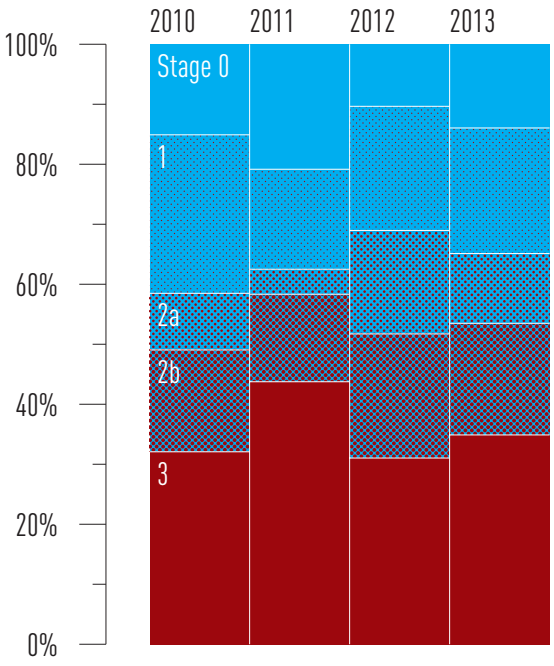
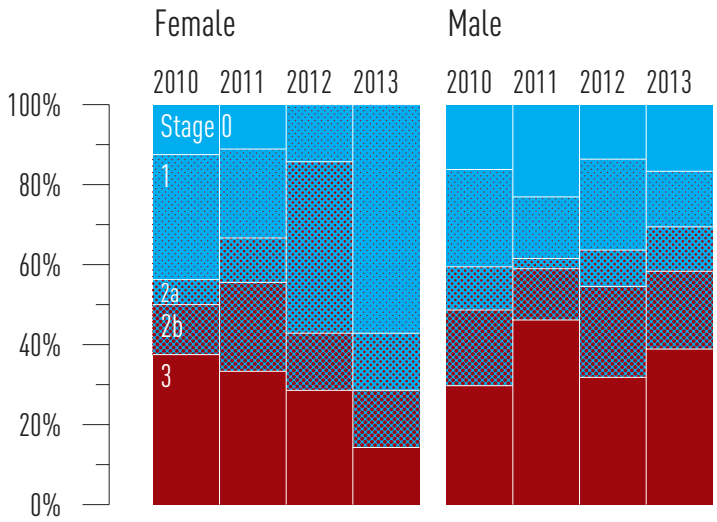


Figure 4.2 Stage of HIV Infection at Diagnosis by Gender for Fraser Health, 2010–2013 [5]



	Fraser Health				*Female*				*Male*			
	2010	2011	2012	2013	2010	2011	2012	2013	2010	2011	2012	2013
Stage 0	8	10	3	6	2	1	0	0	6	9	3	6
Stage 1	14	8	6	9	5	2	1	4	9	6	5	5
Stage 2a	5	2	5	5	1	1	3	1	4	1	2	4
Stage 2b	9	7	6	8	2	2	1	1	7	5	5	7
Stage 3	17	21	9	15	6	3	2	1	11	18	7	14
Unknown	2	1	2	4	0	1	0	0	2	0	2	4
Total *(n=)*	55	49	31	47	16	10	7	7	39	39	24	40

5 *Data Source: BCCDC*

Figure 4.3 Stage of HIV Infection at Diagnosis by Age Category for Fraser Health, 2010–2013 [5]

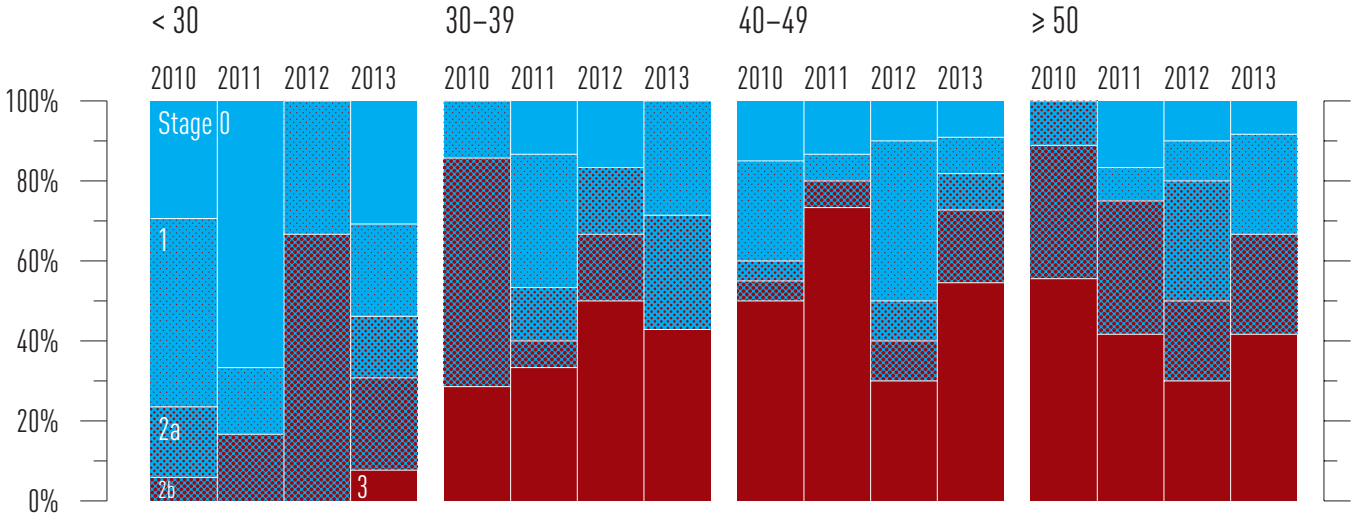
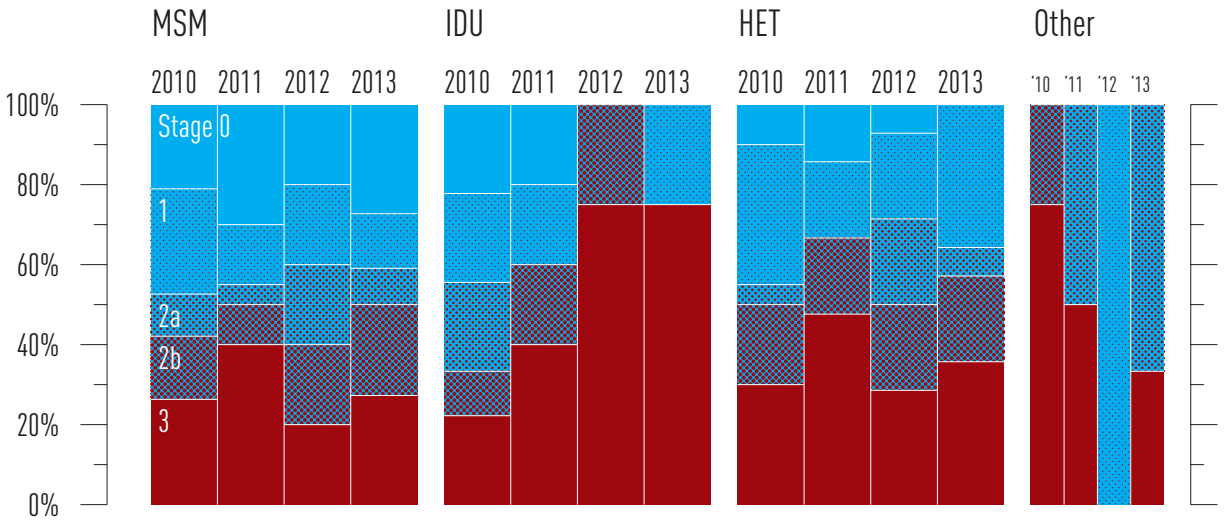


Figure 4.4 Stage of HIV Infection at Diagnosis by Exposure Category for Fraser Health, 2010–2013 [5,6]



	< 30 years				*30–39 years*				*40–49 years*				*≥ 50 years*				*MSM*				*IDU*				*Heterosexual*				*Other*				*NIR/Unknown*			
	2010	'11	'12	'13	'10	'11	'12	'13	'10	'11	'12	'13	'10	'11	'12	'13	'10	'11	'12	'13	'10	'11	'12	'13	'10	'11	'12	'13	'10	'11	'12	'13	'10	'11	'12	'13
Stage 0	5	4	0	4	0	2	1	0	3	2	1	1	0	2	1	1	4	6	2	6	2	1	0	0	2	3	1	0	0	0	0	0	0	0	0	0
Stage 1	8	1	1	3	1	5	0	2	5	1	4	1	0	1	1	3	5	3	2	3	2	1	0	1	7	4	3	5	0	0	1	0	0	0	0	0
Stage 2a	3	0	0	2	0	2	1	2	1	0	1	1	1	0	3	0	2	1	2	2	2	0	0	0	1	0	3	1	0	1	0	2	0	0	0	0
Stage 2b	1	1	2	3	4	1	1	0	1	1	1	2	3	4	2	3	3	2	2	5	1	1	1	0	4	4	3	3	1	0	0	0	0	0	0	0
Stage 3	0	0	0	1	2	5	3	3	10	11	3	6	5	5	3	5	5	8	2	6	2	2	3	3	6	10	4	5	3	1	0	1	1	0	0	0
Unknown	1	1	1	0	0	0	0	2	1	0	1	2	0	0	0	0	1	0	1	0	0	0	0	2	1	1	0	2	0	0	0	0	0	0	1	0
Total *(n=)*	18	7	4	13	7	15	6	9	21	15	11	13	9	12	10	12	20	20	11	22	9	5	4	6	21	22	14	16	4	2	1	3	1	0	1	0

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

Indicator 5. HIV Cascade of Care

The success of seek, test, treat and retain (STTR) strategies like STOP is reliant on early diagnosis of HIV, linking newly diagnosed HIV-positive persons with ongoing care, retaining persons in HIV-care; initiating ART based on best evidenced practices and maintaining optimal ART adherence to ensure a suppressed viral load. These stages of HIV-care can be summarized as: 1. HIV diagnosis, 2. Linked to HIV care, 3. Retained in HIV care, 4. On ART, 5. Adherent to ART and 6. Achieving a suppressed VL; collectively, they are referred to as the cascade of care. Leakage between any of these stages of HIV-care means a reduction in the potential of ART as a benefit to the HIV-positive individual and as an HIV transmission prevention method on a population level. Thus, when interpreting trends in the cascade of care, we strive to see increases along each step of the cascade of care (i.e. reduced attrition) with the ultimate goal being 100% within each stage of the cascade. Monitoring the Cascade of Care provides a picture as to where deficiencies lie in the delivery and uptake of HIV-care. In this section we present the cascade of care for the year 2012 in BC overall and stratified by sex and age for each Health Authority.

Figure 5.1 Estimated Cascade of Care for Fraser Health, 2014 [7]

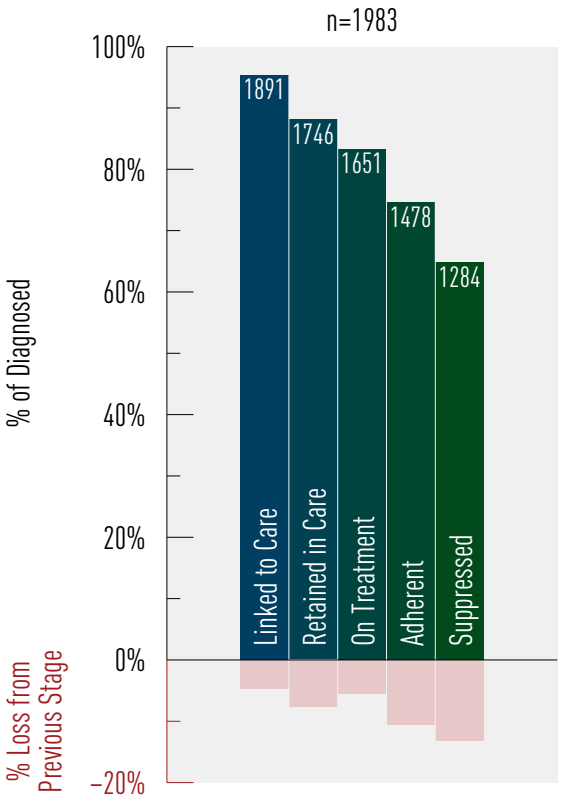
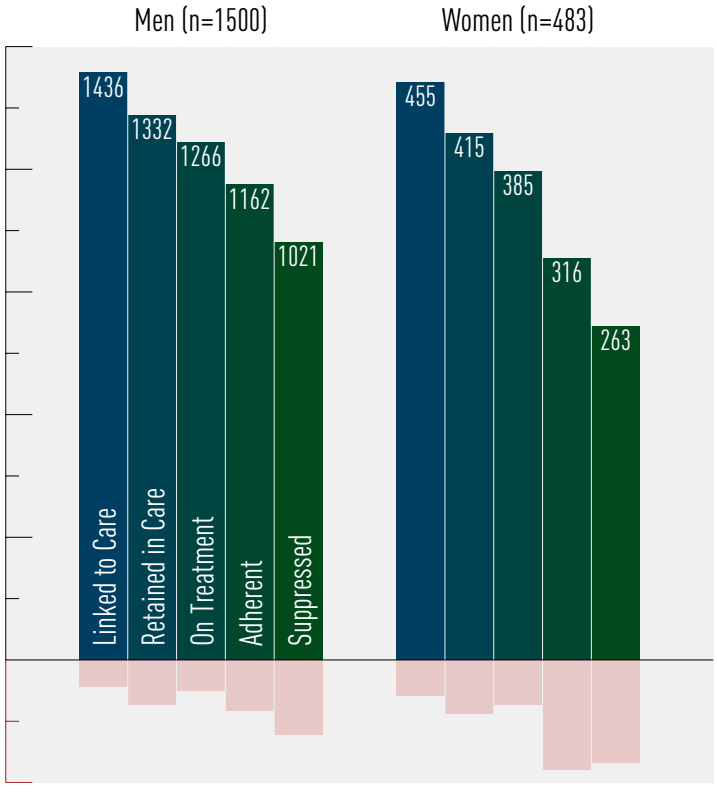


Figure 5.2 Estimated Cascade of Care for Fraser Health by Gender, 2014 [7]

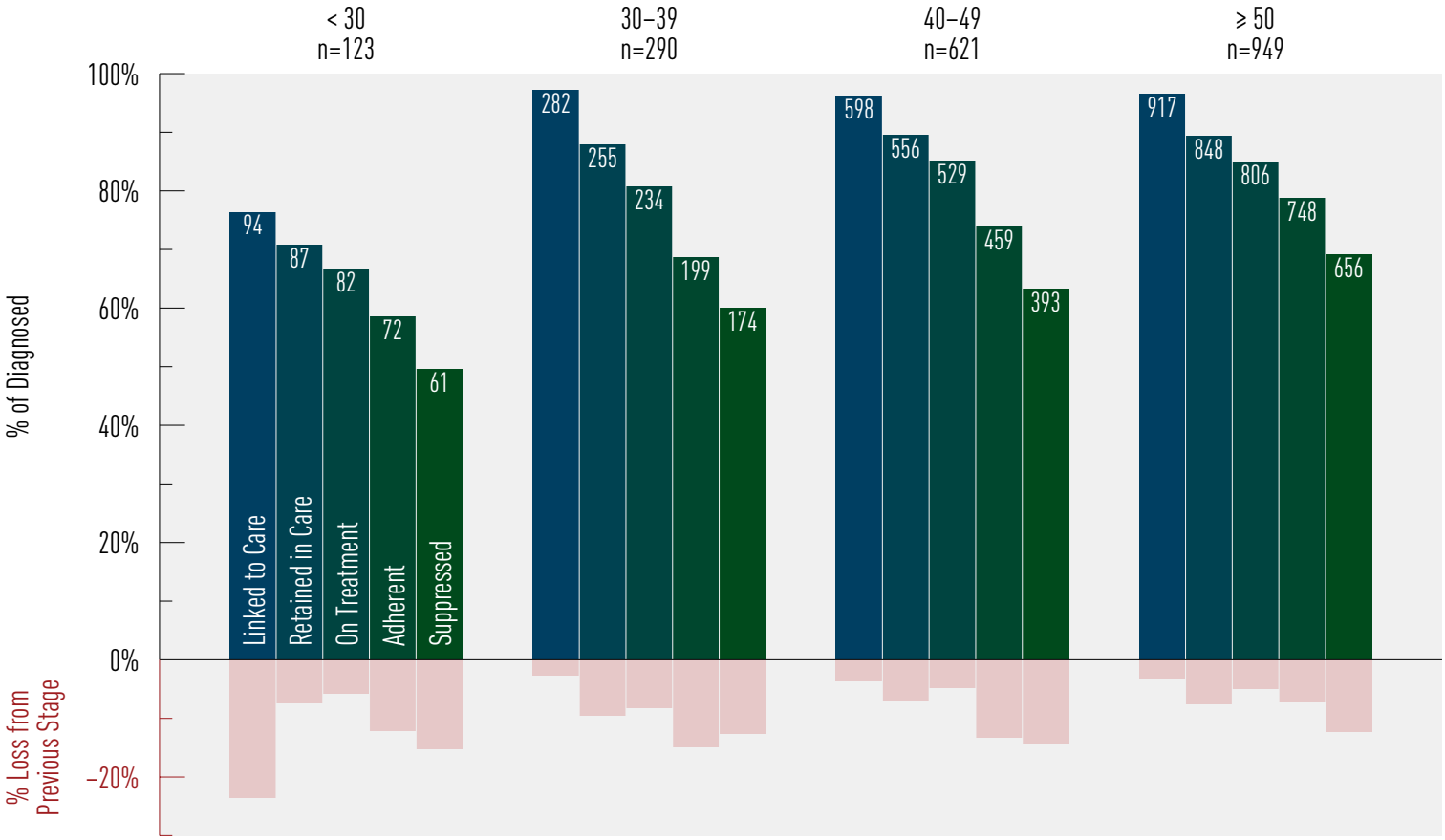


7 *Data is for the period 2014 Q1–2014 Q4.*
Data Sources:
i British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).
ii Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).

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

NB: Transgender has been assigned to their biological sex.

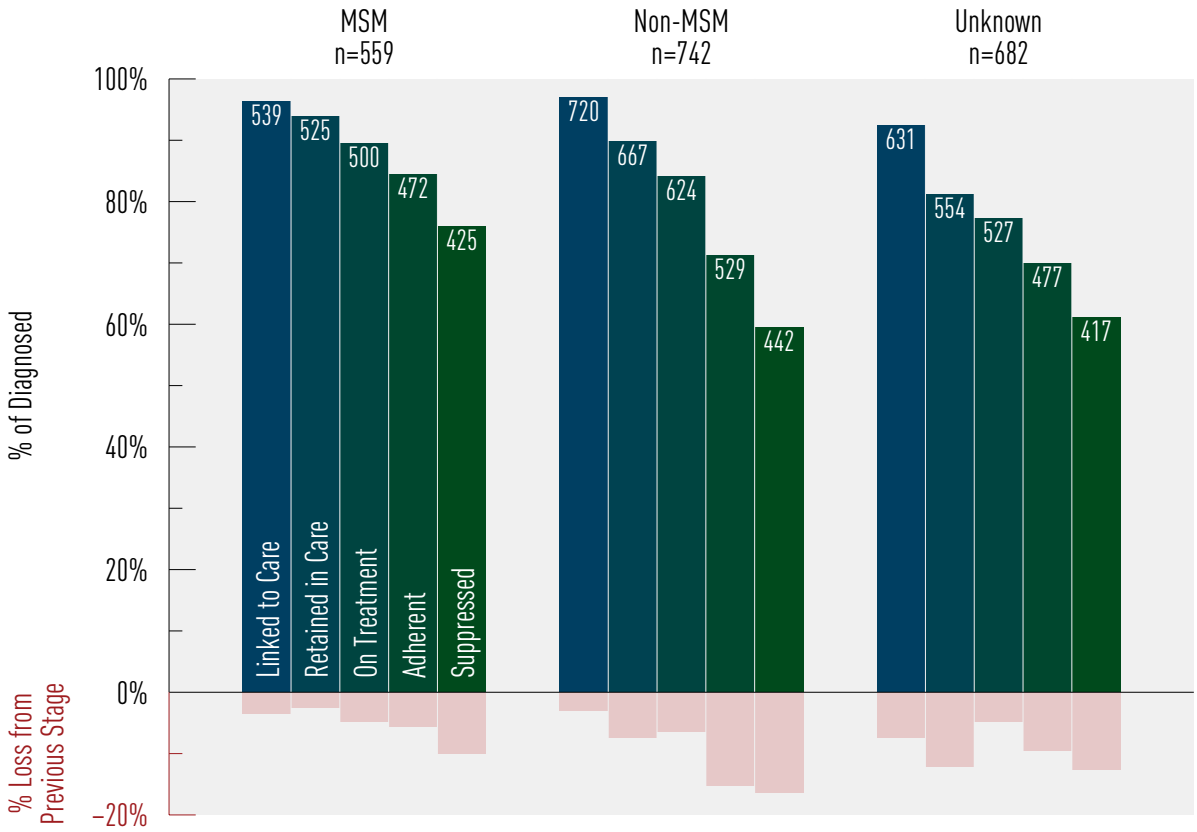
Figure 5.3 Estimated Cascade of Care for Fraser Health by Age Category, 2014 [8]



8 *Data is for the period 2014 Q1–2014 Q4.*
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 Fraser Health by MSM Status, 2014 [9]

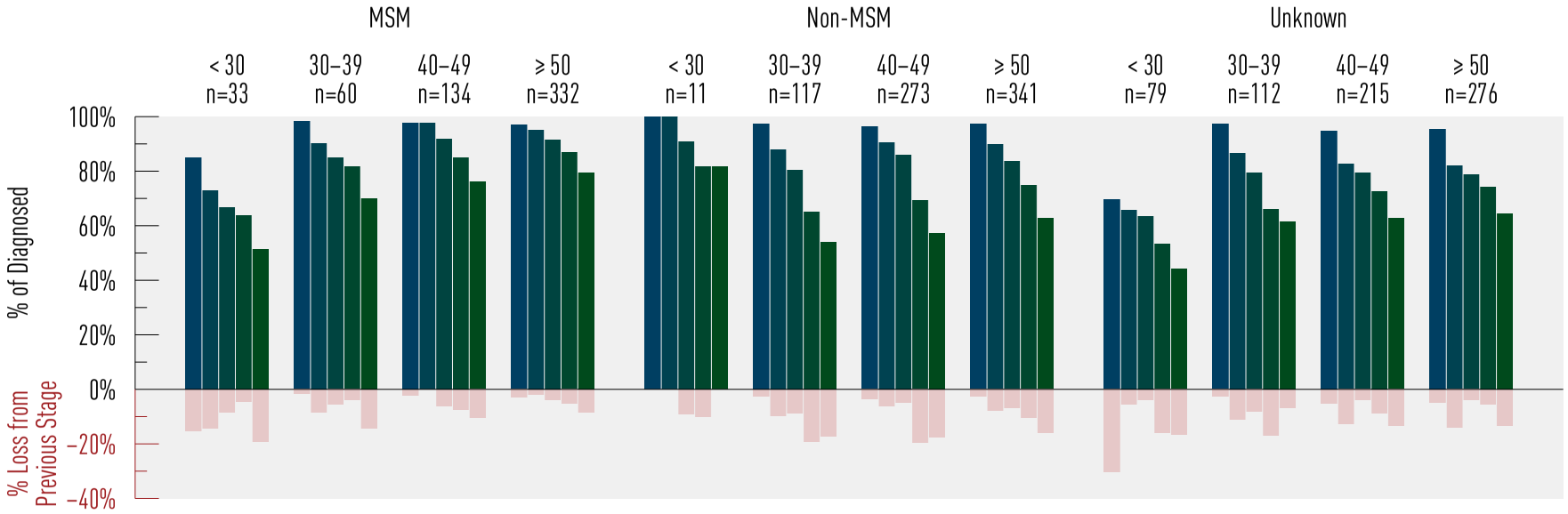


9 *Data is for the period 2014 Q1–2014 Q4.*
Data Sources:
i British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).
ii Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).

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

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

Figure 5.5 Estimated Cascade of Care for Fraser Health by Age Category and MSM Status, 2014 [9]

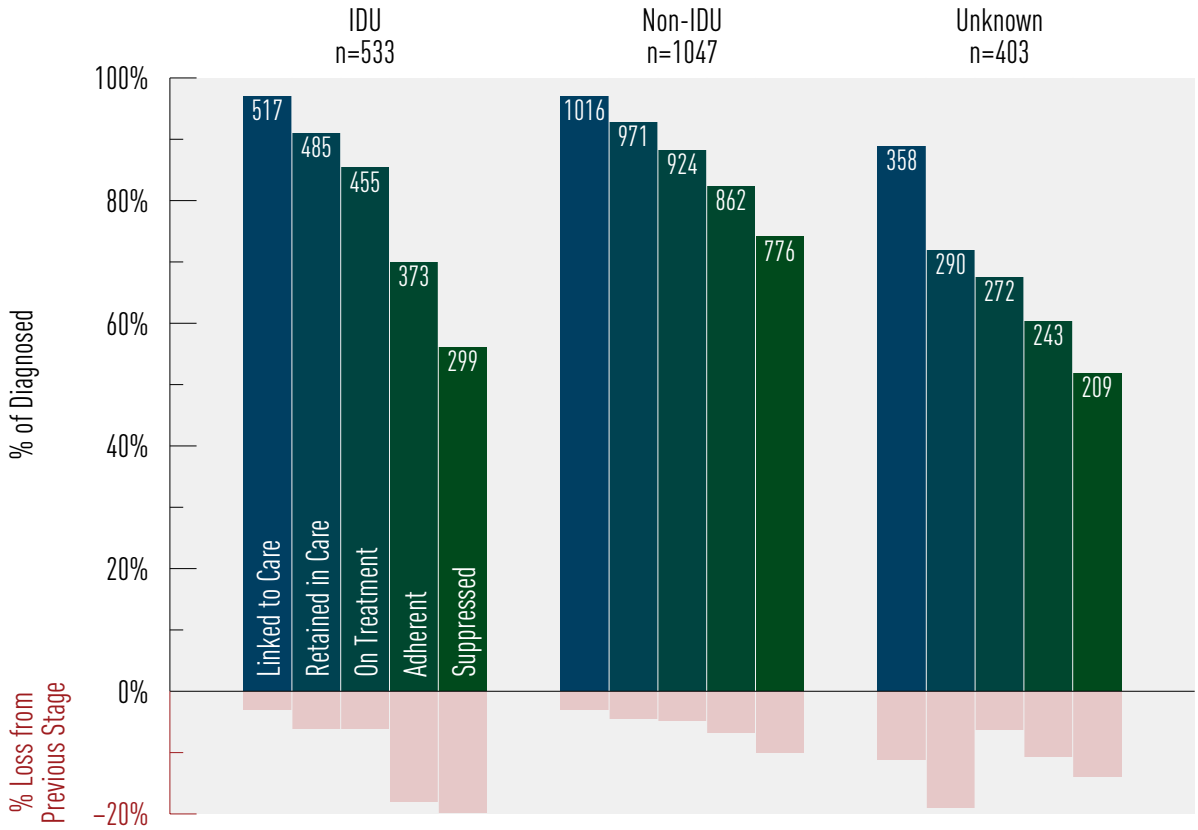


9 *Data is for the period 2014 Q1–2014 Q4.*
Data Sources:
i British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).
ii Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).

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

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

Figure 5.6 Estimated Cascade of Care for Fraser Health by History of IDU, 2014 [9]

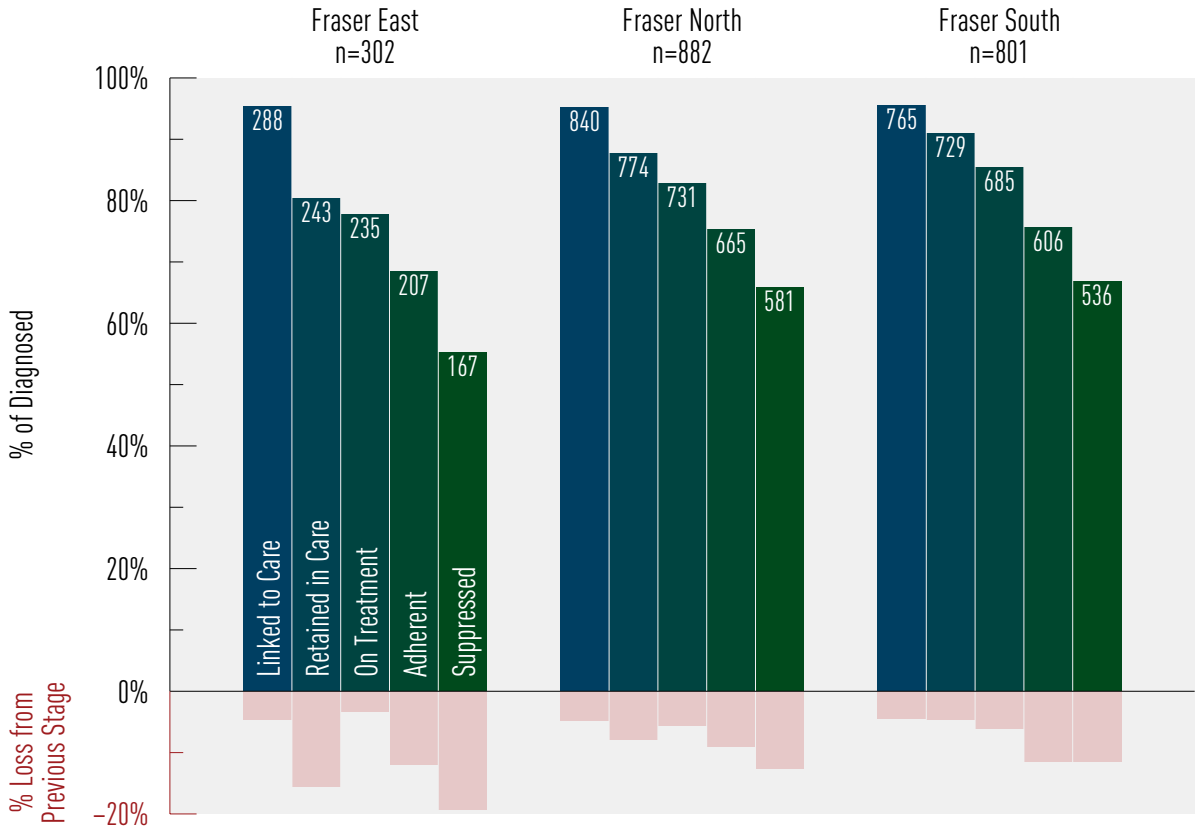


9 *Data is for the period 2014 Q1–2014 Q4.*
Data Sources:
i British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).
ii Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).

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

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

Figure 5.7 Estimated Cascade of Care for Fraser Health by HSDA, 2014 [9]



9 *Data is for the period 2014 Q1–2014 Q4.*
Data Sources:
i British Columbia Centre for Excellence Drug Treatment Program (DTP) Database (ARV use, VL and CD4 count).
ii Administrative data (ex. MSP billings; hospitalization data from the Discharge Abstract Database (DAD)).

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

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

Indicator 6. The Programmatic Compliance Score (PCS)

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

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

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

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

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

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

Figure 6.1 PCS Components for Fraser Health, 2013 Q1–2014 Q4 [10]

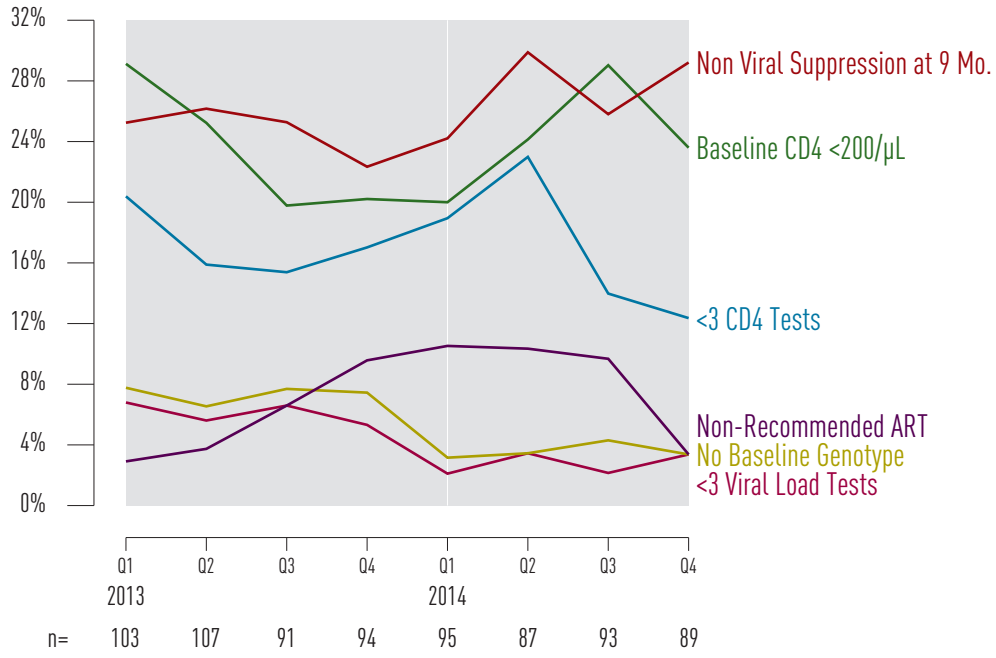
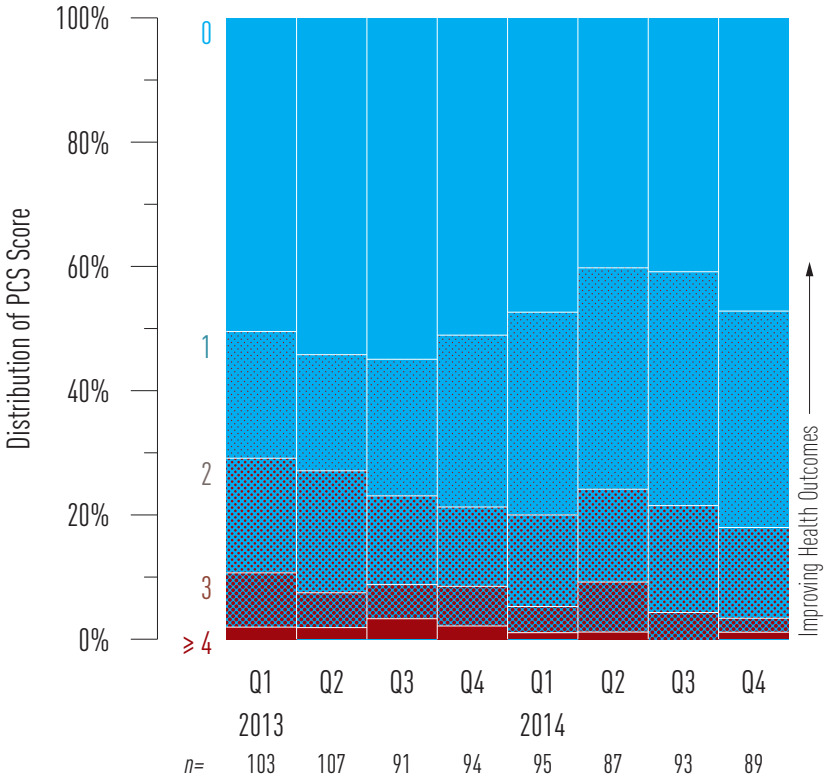


Figure 6.2 Historical Trends for PCS Score for Fraser Health, 2013 Q1–2014 Q4 [10,11]



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

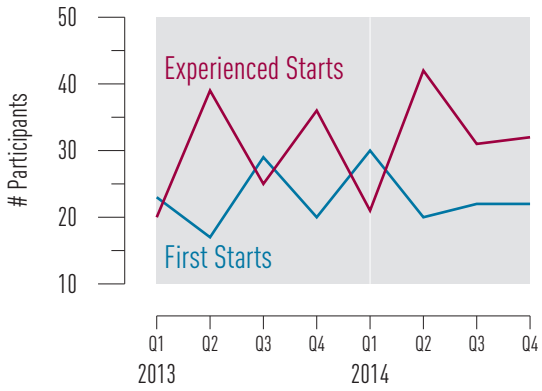
11 *Each quarter's data is calculated as the sum of the 4 quarters leading up to it. e.g. 2013 Q1 is calculated from 2012 Q2 – 2013 Q1. NB: A score of 0 is the best score and a score of 4 or more is the worst score.*

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.

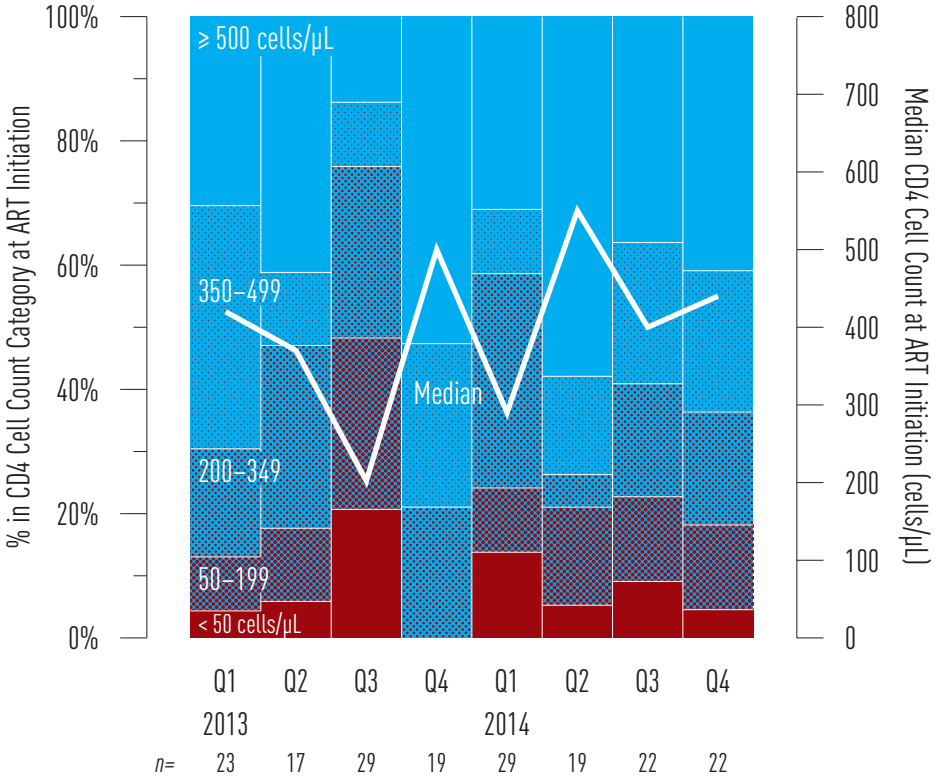
Indicator 7. New Antiretroviral Therapy Starts in Fraser Health

Figure 7 BC-CfE Drug Treatment Program Enrollment: New ART Participants in Fraser Health, 2013 Q1–2014 Q4 [12]



Indicator 8. CD4 Cell Count at ART Initiation

Figure 8 CD4 Cell Count at ART Initiation of ART-Naïve DTP Participants in Fraser Health, 2013 Q1–2014 Q4 [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.*

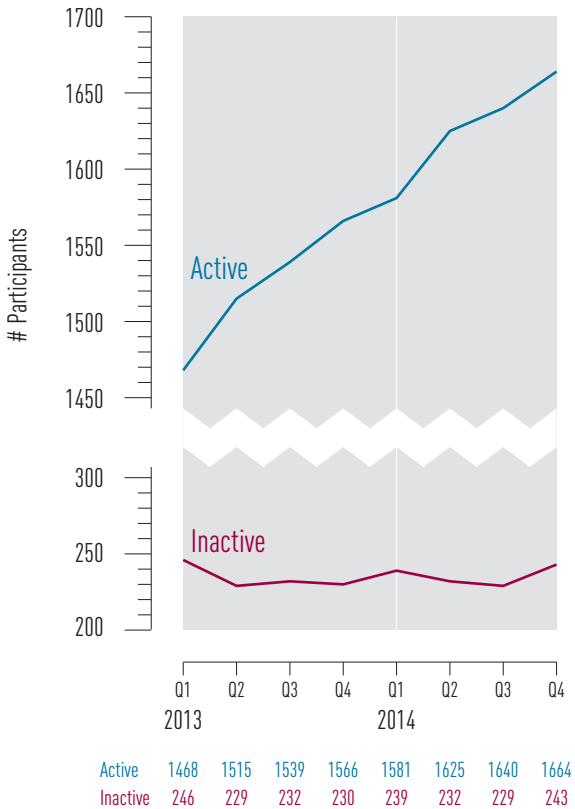
13 *Data Source: Drug Treatment Program Database Limitations: CD4 cell count data is approximately 80% complete.*

Indicator 9. Active and Inactive DTP Participants

Table 3. Distribution of People on ART for Fraser Health, 2014 Q4 [14]

Age	< 30	89
	30–39	250
	40–49	542
	≥ 50	783
Gender	Male	1282
	Female	382
Exposure	MSM	519
	IDU	441
Total		1664

Figure 9 Active and Inactive DTP Participants for Fraser Health, 2013 Q1–2014 Q4 [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.

The recent update in DTP database allows improved classification of some individuals in the risk groups who were previously identified as unknown. This update is in effect from 2014Q4 and may result in noticeable changes of numbers in each risk group category compared to previous reports.

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

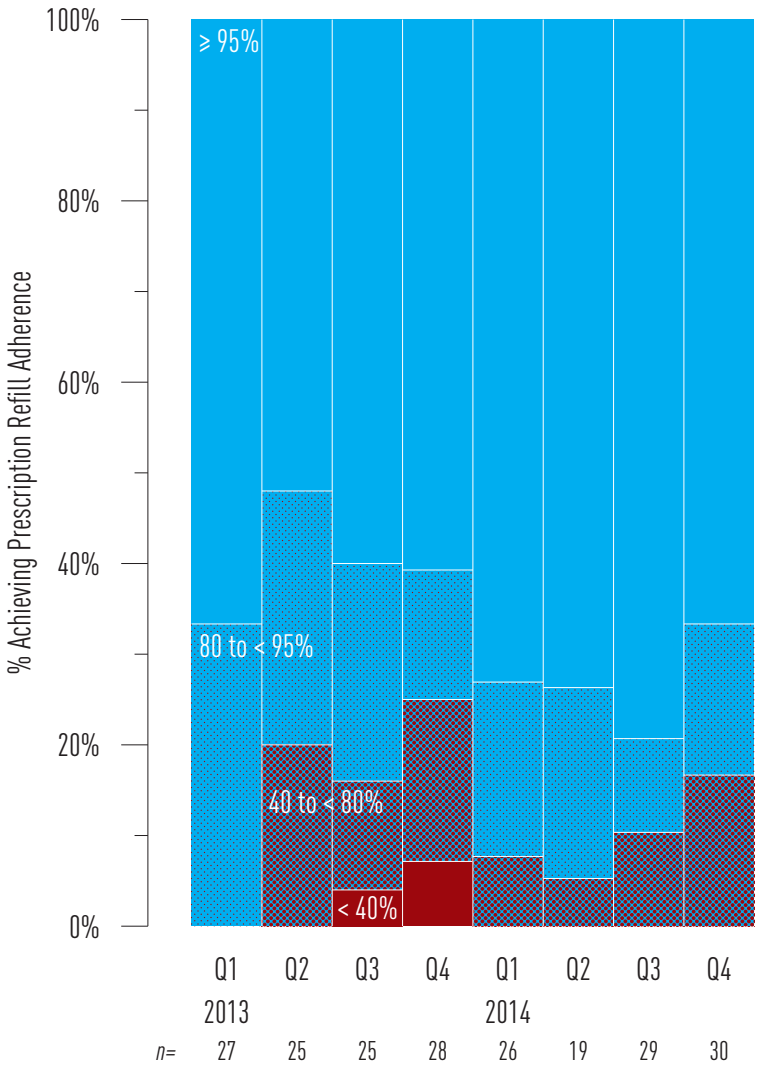
15 *Active DTP participants: are those who are prescribed one or more drugs in the last six months.*
Inactive DTP Participants: Persons no longer prescribed drugs through the HIV/AIDS Drug Treatment Program in the last quarter.

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, 2013 Q1–2014 Q4 [16]

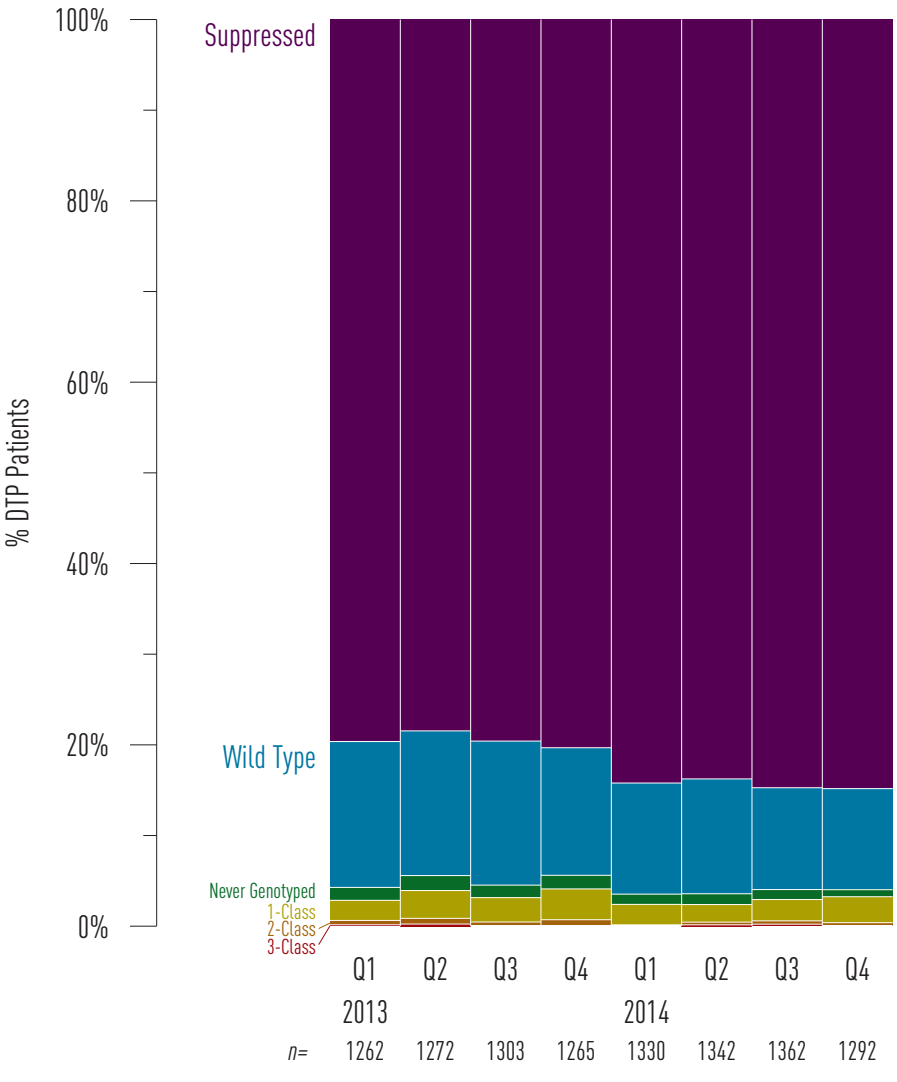


16 *Data Source: Drug Treatment Program Database*
Limitation: Prescription refill adherence is used as a proxy for patient adherence.

Indicator 11. Resistance Testing and Results

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

Figure 11 Cumulative Resistance Testing Results by Resistance Category for Fraser Health, 2013 Q1–2014 Q4 [17]



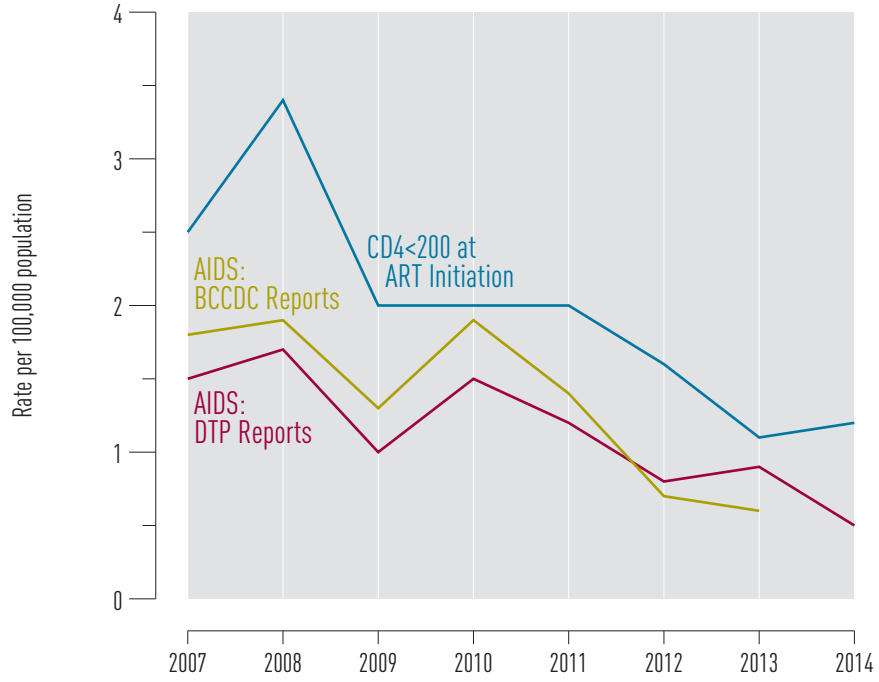
17 *Data Source: Drug Treatment Program Database*

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

Indicator 12. AIDS-Defining Illness

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

Figure 12 AIDS Case Rate and Reports for Fraser Health, 2007–2014 [18]



		2007	2008	2009	2010	2011	2012	2013	2014
CD4<200 at ART initiation	CASES	38	52	32	33	33	26	19	21
	PER 100K	2.5	3.4	2.0	2.0	2.0	1.6	1.1	1.2
AIDS: DTP Reports	CASES	23	26	16	24	20	13	16	9
	PER 100K	1.5	1.7	1.0	1.5	1.2	0.8	0.9	0.5
AIDS: BCCDC Reports	CASES	27	30	21	30	23	12	10	–
	PER 100K	1.8	1.9	1.3	1.9	1.4	0.7	0.6	–

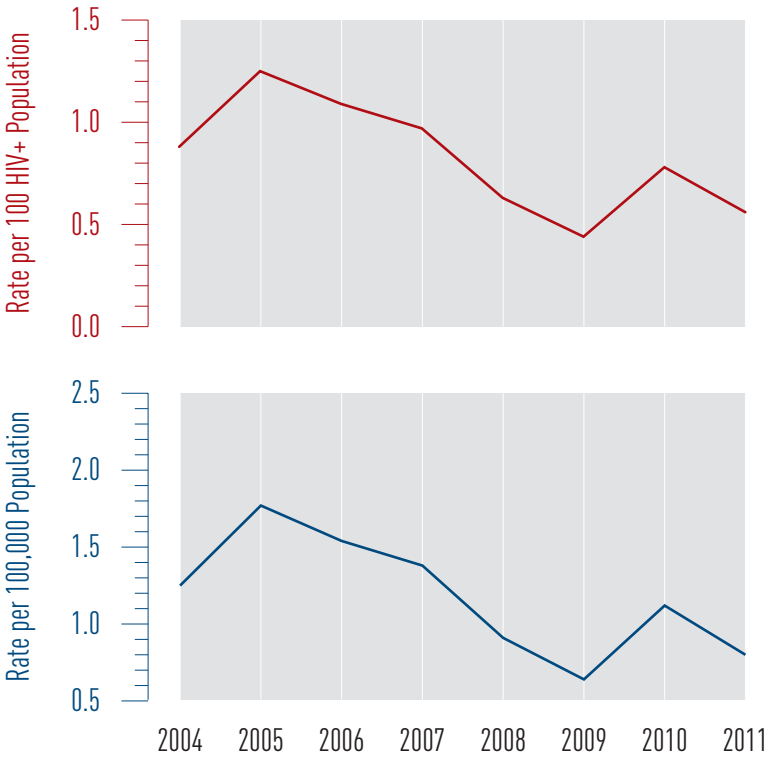
18 *Data Source: DTP AIDS cases are obtained from the Drug Treatment Program Database; BCCDC AIDS cases are obtained from the BCCDC; CD4<200 at ART initiation data came from the DTP database.*

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

Indicator 13. HIV-Related Mortality

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

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



	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

19 *Data Source: BC Vital Statistics*

Limitation:

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

2. Mortality data is updated annually.

3. The most recent available data was used.

Appendices

Indicator 1: **Test Episodes (thousands)**		2010 Q1	Q2	Q3	Q4	2011 Q1	Q2	Q3	Q4	2012 Q1	Q2	Q3	Q4	2013 Q1	Q2	Q3	Q4	2014 Q1	Q2	Q3	Q4
Fraser Health		13.0	12.3	12.5	12.5	13.1	12.2	13.0	13.0	14.4	14.2	15.1	15.6	17.9	18.1	17.9	17.0	18.0	18.6	19.1	19.4
Gender	Female	8.5	7.8	8.1	8.1	8.4	7.9	8.3	8.4	9.1	9.0	9.6	9.7	11.0	10.9	10.9	10.2	10.8	11.1	11.3	11.7
	Male	4.5	4.4	4.4	4.4	4.6	4.3	4.7	4.6	5.3	5.1	5.5	5.7	6.6	7.0	6.7	6.5	6.9	7.1	7.3	7.5
	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	0.0
Female (Prenatal)		4.2	3.9	4.1	4.2	4.4	4.0	3.9	4.1	4.3	4.0	4.1	4.0	4.4	4.1	4.1	4.1	4.3	4.1	4.2	4.3
Female (Non-prenatal)		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	6.8	6.8	6.1	6.4	6.9	7.2	7.4
Age	< 30	5.1	5.0	5.3	5.3	5.0	4.9	5.4	5.3	5.3	5.2	5.7	5.5	5.8	5.9	6.2	5.9	5.6	5.9	6.2	6.2
	30–39	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	5.4	6.0	5.8	5.9	5.9
	40–49	1.9	1.7	1.7	1.7	1.9	1.7	1.8	1.8	2.0	2.0	2.0	2.3	2.6	2.7	2.6	2.3	2.6	2.7	2.7	2.7
	≥ 50	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	3.7	3.4	3.1	3.5	3.8	4.0	4.3
POC HIV Tests (not in thousands)					0	12	37	57	24	54	121	31	158	296	187	182	302	254	426	377	238
Fraser East		2.2	2.1	2.1	2.0	2.2	2.0	2.1	2.0	2.3	2.2	2.3	2.3	2.5	2.5	2.5	2.4	2.7	2.6	2.7	3.4
Female (Non-prenatal)		0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.9	0.8	0.8	0.9	0.9	0.9	1.3
Male		0.7	0.7	0.7	0.6	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.8	0.9	1.2
Fraser North		6.0	5.6	5.6	5.6	5.7	5.4	6.1	6.0	6.7	6.4	6.7	7.1	8.4	8.5	8.3	8.0	8.3	8.5	8.5	8.4
Female (Non-prenatal)		2.1	2.0	2.0	1.9	1.9	1.9	2.2	2.2	2.4	2.5	2.6	2.8	3.3	3.4	3.4	3.1	3.2	3.5	3.4	3.3
Male		2.3	2.3	2.2	2.2	2.3	2.1	2.5	2.4	2.7	2.5	2.7	2.8	3.4	3.6	3.4	3.3	3.5	3.4	3.5	3.5
Fraser South		4.8	4.6	4.8	4.9	5.2	4.8	4.9	5.0	5.4	5.5	6.0	6.3	7.0	7.0	7.1	6.6	7.0	7.5	7.8	7.6
Female (Non-prenatal)		1.5	1.3	1.4	1.4	1.4	1.4	1.5	1.5	1.7	1.8	2.1	2.2	2.4	2.5	2.6	2.2	2.4	2.6	2.9	2.7
Male		1.4	1.5	1.5	1.6	1.7	1.6	1.6	1.6	1.9	1.8	2.1	2.2	2.4	2.6	2.5	2.3	2.6	2.8	2.9	2.8

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

		2009	2010	2011	2012	2013	2014
Fraser Health		3375.9	3365.6	3414.9	3860.5	4234.0	4494.5
Fraser East		3270.8	3165.0	3121.5	3376.3	3503.7	3949.4
Fraser North		3748.7	3720.2	3814.6	4436.8	5196.2	5379.8
Fraser South		3100.4	3144.0	3192.7	3561.9	3708.5	3963.2
Gender	Female	4371.7	4345.9	4387.9	4851.8	5211.6	5410.4
	Male	2368.1	2372.3	2437.2	2857.7	3242.7	3558.4
Age	< 30	3496.5	3457.6	3411.6	3562.3	3685.5	3711.3
	30–39	8356.7	8484.8	8525.0	9133.9	9359.6	9915.5
	40–49	2990.7	2968.7	3065.1	3611.8	4190.5	4460.7
	≥ 50	1147.4	1192.3	1324.9	1997.4	2771.8	3196.3

Indicator 3: **New HIV Diagnoses**		2010 Q1	Q2	Q3	Q4	2011 Q1	Q2	Q3	Q4	2012 Q1	Q2	Q3	Q4	2013 Q1	Q2	Q3	Q4	2014 Q1	Q2	Q3	Q4
Fraser Health	By Client Residence	17	19	19	17	12	18	15	9	11	10	10	14	8	14	23	19	15	11	16	16
	By Provider Address	*14*	*15*	*13*	*15*	*10*	*20*	*9*	*8*	*10*	*5*	*7*	*8*	*9*	*8*	*14*	*15*	*11*	*10*	*12*	*13*
Gender	Female	6	8	3	5	1	5	4	1	0	3	2	3	1	3	2	3	6	4	6	1
	Male	11	11	16	12	11	13	11	8	11	7	8	11	7	11	21	16	9	7	10	15
Age	< 30	3	5	9	1	1	3	3	3	3	1	1	2	1	3	5	6	5	1	4	4
	30–39	6	2	2	6	3	9	3	1	1	3	2	2	3	4	8	6	5	3	5	4
	40–49	6	6	5	5	2	5	4	4	3	2	5	4	2	4	6	4	3	3	1	3
	≥ 50	2	6	3	5	6	1	5	1	4	4	2	6	2	3	4	3	2	4	6	5
Exposure	MSM	4	3	11	4	7	5	8	4	6	5	6	5	6	9	10	11	5	3	–	–
	IDU	2	4	3	2	1	4	0	0	4	0	0	1	1	1	2	5	2	1	–	–
	HET	9	10	3	8	3	7	7	5	1	4	4	6	1	3	9	3	7	6	–	–
	Other	2	0	1	1	1	2	0	0	0	0	0	1	0	1	2	0	0	0	–	–
	NIR/Unknown	0	2	1	2	0	0	0	0	0	1	0	1	0	0	0	0	1	1	–	–

Indicator 3: **New HIV Diagnoses**		2010 Q1	Q2	Q3	Q4	2011 Q1	Q2	Q3	Q4	2012 Q1	Q2	Q3	Q4	2013 Q1	Q2	Q3	Q4	2014 Q1	Q2	Q3	Q4
Fraser East	By Client Residence	2	1	2	2	4	4	2	5	2	2	1	1	0	0	3	1	2	0	2	2
	By Provider Address	*4*	*1*	*1*	*1*	*4*	*4*	*2*	*2*	*2*	*0*	*1*	*0*	*0*	*0*	*2*	*1*	*2*	*1*	*1*	*2*
Fraser North	By Client Residence	7	6	6	6	6	6	7	4	3	6	5	6	6	9	14	9	8	5	5	10
	By Provider Address	*5*	*5*	*2*	*6*	*3*	*7*	*4*	*5*	*3*	*4*	*4*	*2*	*7*	*4*	*8*	*9*	*7*	*4*	*4*	*9*
Fraser South	By Client Residence	8	12	11	9	2	8	6	0	6	2	4	7	2	5	6	9	5	6	9	4
	By Provider Address	*5*	*9*	*10*	*8*	*3*	*9*	*3*	*1*	*5*	*1*	*2*	*6*	*2*	*4*	*4*	*5*	*2*	*5*	*7*	*2*

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

	Fraser Health '10	'11	'12	'13	Female '10	'11	'12	'13	Male '10	'11	'12	'13	< 30 years '10	'11	'12	'13	30–39 years '10	'11	'12	'13	40–49 years '10	'11	'12	'13
Stage 0	8	10	3	6	2	1	0	0	6	9	3	6	5	4	0	4	0	2	1	0	3	2	1	1
Stage 1	14	8	6	9	5	2	1	4	9	6	5	5	8	1	1	3	1	5	0	2	5	1	4	1
Stage 2a	5	2	5	5	1	1	3	1	4	1	2	4	3	0	0	2	0	2	1	2	1	0	1	1
Stage 2b	9	7	6	8	2	2	1	1	7	5	5	7	1	1	2	3	4	1	1	0	1	1	1	2
Stage 3	17	21	9	15	6	3	2	1	11	18	7	14	0	0	0	1	2	5	3	3	10	11	3	6
Unknown	2	1	2	4	0	1	0	0	2	0	2	4	1	1	1	0	0	0	0	2	1	0	1	2
Total	55	49	31	47	16	10	7	7	39	39	24	40	18	7	4	13	7	15	6	9	21	15	11	13

	≥ 50 years '10	'11	'12	'13	MSM '10	'11	'12	'13	IDU '10	'11	'12	'13	Heterosexual '10	'11	'12	'13	Other Exposure '10	'11	'12	'13	NIR/Unknown '10	'11	'12	'13
Stage 0	0	2	1	1	4	6	2	6	2	1	0	0	2	3	1	0	0	0	0	0	0	0	0	0
Stage 1	0	1	1	3	5	3	2	3	2	1	0	1	7	4	3	5	0	0	1	0	0	0	0	0
Stage 2a	1	0	3	0	2	1	2	2	2	0	0	0	1	0	3	1	0	1	0	2	0	0	0	0
Stage 2b	3	4	2	3	3	2	2	5	1	1	1	0	4	4	3	3	1	0	0	0	0	0	0	0
Stage 3	5	5	3	5	5	8	2	6	2	2	3	3	6	10	4	5	3	1	0	1	1	0	0	0
Unknown	0	0	0	0	1	0	1	0	0	0	0	2	1	1	0	2	0	0	0	0	0	0	1	0
Total	9	12	10	12	20	20	11	22	9	5	4	6	21	22	14	16	4	2	1	3	1	0	1	0

Indicator 5: **HIV Cascade of Care**			DIAGNOSED	LINKED	RETAINED	ON ART	ADHERENT	SUPPRESSED
Fraser Health			1983	1891	1746	1651	1478	1284
Age Category	< 30		123	94	87	82	72	61
	30–39		290	282	255	234	199	174
	40–49		621	598	556	529	459	393
	≥ 50		949	917	848	806	748	656
Age Category and MSM Status	MSM	< 30	33	28	24	22	21	17
		30–39	60	59	54	51	49	42
		40–49	134	131	131	123	114	102
		≥ 50	332	322	316	304	288	264
	Non-MSM	< 30	11	11	11	10	9	9
		30–39	117	114	103	94	76	63
		40–49	273	263	247	235	189	156
		≥ 50	341	332	306	285	255	214
	Unknown	< 30	79	55	52	50	42	35
		30–39	112	109	97	89	74	69
		40–49	215	204	178	171	156	135
		≥ 50	276	263	226	217	205	178
Gender	Male		1500	1436	1332	1266	1162	1021
	Female		483	455	415	385	316	263
Injection Drug Use	IDU		533	517	485	455	373	299
	Non-IDU		1047	1016	971	924	862	776
	Unknown		403	358	290	272	243	209
MSM Status	MSM		559	539	525	500	472	425
	Non-MSM		742	720	667	624	529	442
	Unknown		682	631	554	527	477	417
Health Authority	Fraser East		302	288	243	235	207	167
	Fraser North		882	840	774	731	665	581
	Fraser South		801	765	729	685	606	536

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

	2013 Q1	Q2	Q3	Q4	2014 Q1	Q2	Q3	Q4
< 3 CD4 Tests	20.4%	15.9%	15.4%	17.0%	18.9%	23.0%	14.0%	12.4%
< 3 Viral Load Tests	6.8%	5.6%	6.6%	5.3%	2.1%	3.4%	2.2%	3.4%
No Baseline Genotype	7.8%	6.5%	7.7%	7.4%	3.2%	3.4%	4.3%	3.4%
Baseline CD4 < 200 cells/μL	29.1%	25.2%	19.8%	20.2%	20.0%	24.1%	29.0%	23.6%
Non-Recommended ART	2.9%	3.7%	6.6%	9.6%	10.5%	10.3%	9.7%	3.4%
Non Viral suppression at 9 Mo.	25.2%	26.2%	25.3%	22.3%	24.2%	29.9%	25.8%	29.2%
PCS Score: 0	52	58	50	48	45	35	38	42
PCS Score: 1	21	20	20	26	31	31	35	31
PCS Score: 2	19	21	13	12	14	13	16	13
PCS Score: 3	9	6	5	6	4	7	4	2
PCS Score: 4 or more	2	2	3	2	1	1	0	1
Total (n=)	**103**	**107**	**91**	**94**	**95**	**87**	**93**	**89**

Indicator 7: **New DTP ARV Participants**

First Starts	23	17	29	20	30	20	22	22
Experienced Starts	20	39	25	36	21	42	31	32

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

CD4 ≥ 500	7	7	4	10	9	11	8	9
CD4 350–499	9	2	3	5	3	3	5	5
CD4 200–349	4	5	8	4	10	1	4	4
CD4 50–199	2	2	8	0	3	3	3	3
CD4 < 50	1	1	6	0	4	1	2	1
CD4 Median (cells/μL)	*420*	*370*	*202*	*500*	*290*	*550*	*400*	*440*
Total (n=)	**23**	**17**	**29**	**19**	**29**	**19**	**22**	**22**

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

Active DTP Participants	1468	1515	1539	1566	1581	1625	1640	1664
Inactive DTP Participants	246	229	232	230	239	232	229	243

Indicator 10: **Antiretroviral Adherence**

≥ 95%	18	13	15	17	19	14	23	20
80% to < 95%	9	7	6	4	5	4	3	5
40% to < 80%	0	5	3	5	2	1	3	5
< 40%	0	0	1	2	0	0	0	0
Total (n=)	**27**	**25**	**25**	**28**	**26**	**19**	**29**	**30**

Indicator 11: **Resistance Testing and Results**

Suppressed	1005	998	1037	1016	1120	1124	1154	1096
Wild Type	203	203	207	178	163	170	153	144
Never Genotyped	18	21	18	19	15	16	15	10
1-Class	28	39	35	43	30	26	32	37
2-Class	6	8	5	8	1	4	5	4
3-Class	2	3	1	1	1	2	3	1
Total (n=)	**1262**	**1272**	**1303**	**1265**	**1330**	**1342**	**1362**	**1292**

Indicator 12: **AIDS-Defining Illness**		2007	2008	2009	2010	2011	2012	2013	2014
CD4 < 200 at	Cases	38	52	32	33	33	26	19	21
ART initiation	*Rate per 100,000*	*2.5*	*3.4*	*2.0*	*2.0*	*2.0*	*1.6*	*1.1*	*1.2*
AIDS Cases	Cases	23	26	16	24	20	13	16	9
(DTP Reports)	*Rate per 100,000*	*1.5*	*1.7*	*1.0*	*1.5*	*1.2*	*0.8*	*0.9*	*0.5*
AIDS Cases	Cases	27	30	21	30	23	12	10	–
(BCCDC Reports)	*Rate per 100,000*	*1.8*	*1.9*	*1.3*	*1.9*	*1.4*	*0.7*	*0.6*	–

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