Indicators Report
STOP HIV/AIDS Pilot Project

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on behalf of the STOP HIV/AIDS Technical (Indicators) Working Group

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

British Columbia Centre for Excellence in HIV/AIDS

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INTRODUCTION

The progress of the STOP HIV/AIDS Pilot Project as measured by select indicators is an imperative component of project monitoring and feedback to stakeholders. In this initial report we describe changes in 19 key surveillance and clinical indicators in the opening months since the introduction of the STOP HIV/AIDS Pilot Program in the Vancouver and Northern Interior Health Service Delivery Areas.

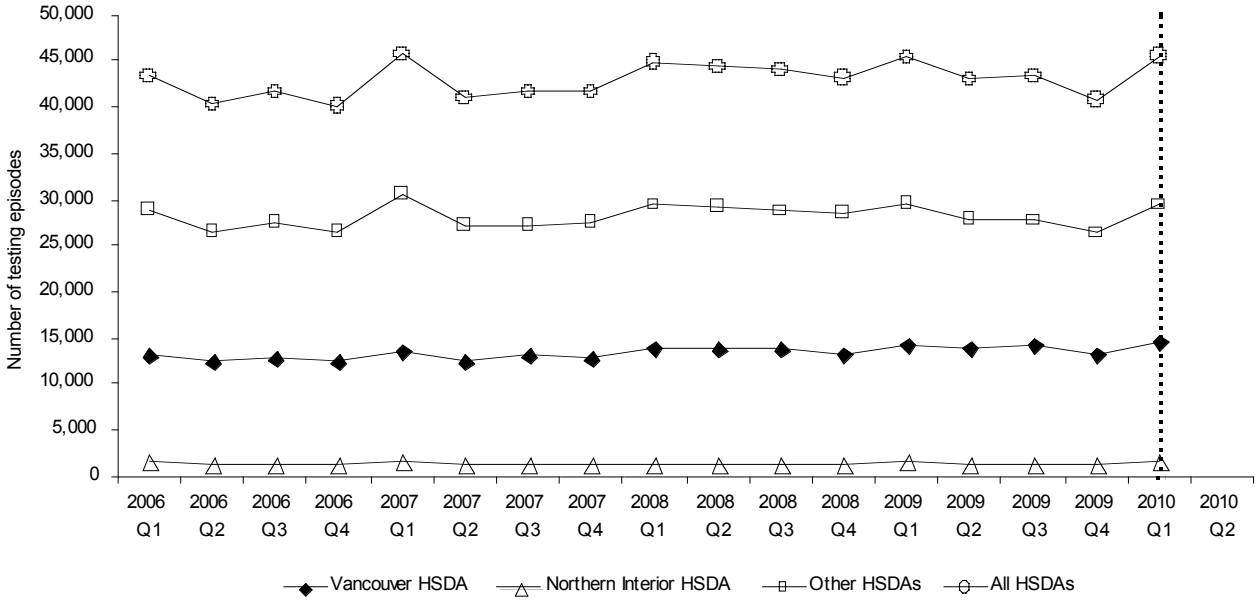
The information provided here is correct and complete to the best of current knowledge, standards and capabilities, however, it is based on administrative, clinical, surveillance and programmatic databases which have inherent limitations. The data contained in these databases were not originally collected for the purpose for which they are now being used and limitations arise directly from their originally intended purpose. Therefore, while each database is rich in information for select utilizations, these data should comprise only one component of our efforts to inform service delivery and policy decision-making.
Despite these limitations, continual refinement of indicators and reporting strategies in conjunction with planned assessment of other data sources, integration of existing extensive datasets, and triangulation of variables will be used to construct a robust scientific platform. In this context, the observation and analyses of long-term trends will provide a powerful, complete, and accurate evaluation of the STOP HIV/AIDS Pilot Project.

Finally, it is important to proceed with caution when interpreting trends over the short term as they are presented here. Some indicators exhibit considerable variation from one reporting period to the next. This is particularly true of estimates made for the Northern Interior Health Service Delivery Area where statistics may be based on extremely small numbers allowing for particular instability in estimates. Only by review of longer-term temporal trends (including consideration of pre-pilot fluctuations) can a complete evaluation of the direction, stability and possible future progress of each trend be evaluated. It is also important to acknowledge the inherent difficulty in ascribing changes in indicators directly to the STOP HIV/AIDS initiative given the complex, rapidly progressing nature of HIV-related care, research and service delivery in the context of a dynamic health care and data-collection systems.

STOP HIV/AIDS (GOAL 1): INDICATOR 1

TARGET	ACTUAL	
Increase by 50%	**VAN**	Stable or increasing trend
	NI	Stable or increasing trend

1. Number of HIV test episodes



Interpretation / Comment	The number of HIV test episodes increased in 2010 Q1 for Vancouver HSDA, Northern HSDA, as well as in other HSDAs. The number of HIV test episodes has been stable or increasing over time.
Description of Measure	The number of HIV test episodes ordered, which is a measure of the volume of HIV tests performed in a region. Data includes prenatal HIV tests.
Significance	Number of HIV test episodes ordered is a direct reflection of project initiatives related to HIV screening and may equate to increased case-finding and reduced number of individuals unaware of their HIV status. Target (50% increase, based on average 2009 Q1 to Q4) by end of STOP HIV pilot project: Vancouver HSDA 20,932 test episodes, Northern Interior HSDA 2,013 test episodes.
Data Source(s)	Misys Laboratory database at the Provincial Public Health Microbiology and Reference Laboratory (PHSA).
Calculation Method	Total number of HIV tests grouped by test episodes. A test episode consists of all HIV tests conducted for an individual in a 30-day period (as follow-up or simultaneous HIV tests may be required to clarify test results within this period). Allocation by region is based on address of ordering clinician or clinic, or if unknown, address of individual undergoing HIV testing. Unit of analysis is number of HIV test episodes per quarter.
Limitations	Includes data for ~95% of all screening and all confirmatory HIV testing in BC. Does not include data for screening HIV tests conducted at Victoria General Hospital and Providence Health Care Laboratories. Does not include data for Point of Care HIV tests delivered in BC. Data typically lags by at least one quarter due to extraction and cleaning schedules.

1. Number of HIV test episodes (data table)

Quarter	Vancouver HSDA	Northern Interior HSDA	Other HSDAs	All HSDAs
2006 Q1	13,057	1,546	28,838	43,441
2006 Q2	12,459	1,283	26,533	40,275
2006 Q3	12,727	1,380	27,630	41,737
2006 Q4	12,331	1,251	26,571	40,153
2007 Q1	13,614	1,539	30,618	45,771
2007 Q2	12,400	1,317	27,275	40,992
2007 Q3	13,077	1,342	27,294	41,713
2007 Q4	12,777	1,325	27,567	41,669
2008 Q1	14,028	1,439	29,399	44,866
2008 Q2	13,771	1,413	29,256	44,440
2008 Q3	13,833	1,425	28,754	44,012
2008 Q4	13,254	1,359	28,644	43,257
2009 Q1	14,343	1,475	29,612	45,430
2009 Q2	13,898	1,322	27,807	43,027
2009 Q3	14,266	1,332	27,764	43,362
2009 Q4	13,311	1,238	26,343	40,892
2010 Q1	14,620	1,455	29,500	45,575
2010 Q2				

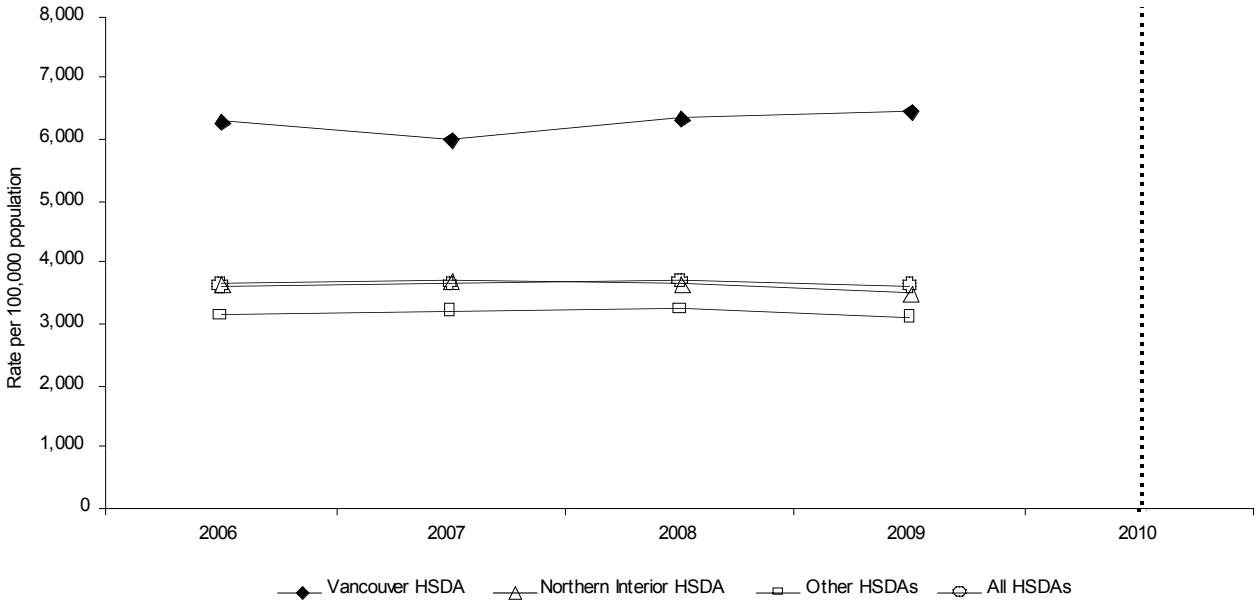
Comments on indicator:

- For indicator to be valid, given emphasis on expanding Point of Care HIV testing as part of STOP HIV the indicator needs to include number of Point of Care HIV tests performed (and data from other laboratories, particularly Providence Laboratory). Can be included in indicator if data is available.

STOP HIV/AIDS (GOAL 1): INDICATOR 2

TARGET	ACTUAL	
Increase 50%	**VAN**	Increasing trend
	NI	Decreasing trend

2. Population HIV testing rate



Interpretation / Comment	Increasing trend in Vancouver HSDA and decreasing trend in Northern Interior and other HSDA in 2009.
Description of Measure	Annual population rate of unique individuals tested for HIV.
Significance	Number of individuals tested for HIV is a direct reflection of project initiatives related to HIV screening and may equate to increased case-finding and reduced number of individuals unaware of their HIV status. Target (50% increase, based on 2009 rate) by end of STOP HIV pilot project: Vancouver HSDA 9,722 persons tested per 100,000 population, Northern Interior HSDA 5,264 persons tested per 100,000 population.
Data Source(s)	Misys Laboratory database at the Provincial Public Health Microbiology and Reference Laboratory (PHSA).
Calculation Method	Probabilistic matching of identifiers is conducted to identify individuals having greater than one HIV test in the same year. Denominator: Population of region Numerator: Number of unique individuals tested for HIV Allocation by region is based on address of individual undergoing HIV testing, or if unknown, address of ordering clinician or clinic. Unit of analysis is rate of individuals tested for HIV per 100,000 population per year.
Limitations	As per Indicator 1. Repeat tests in individuals who test under different identifiers (e.g., initials, pseudonyms, non-nominally) may not be identified and these individuals may be counted more than once. This indicator is limited to annual reporting as if examine on quarterly basis do not see big difference from number of HIV test episodes (as repeat HIV testing unlikely within smaller time periods).

2. Population HIV testing rate (data table)

Year	Vancouver HSDA		Northern Interior HSDA		Other HSDAs		All HSDAs	
	HIV Test	Rate	HIV Test	Rate	HIV Test	Rate	HIV Test	Rate
2006	38,617	6,303.5	5,125	3,648.3	109,706	3,143.0	153,448	3,616.0
2007	37,514	6,013.2	5,254	3,719.7	114,205	3,221.4	156,973	3,641.8
2008	40,020	6,353.3	5,190	3,648.2	116,708	3,233.4	161,918	3,695.4
2009	41,533	6,481.6	4,994	3,509.5	113,917	3,107.2	160,444	3,606.1
2010								

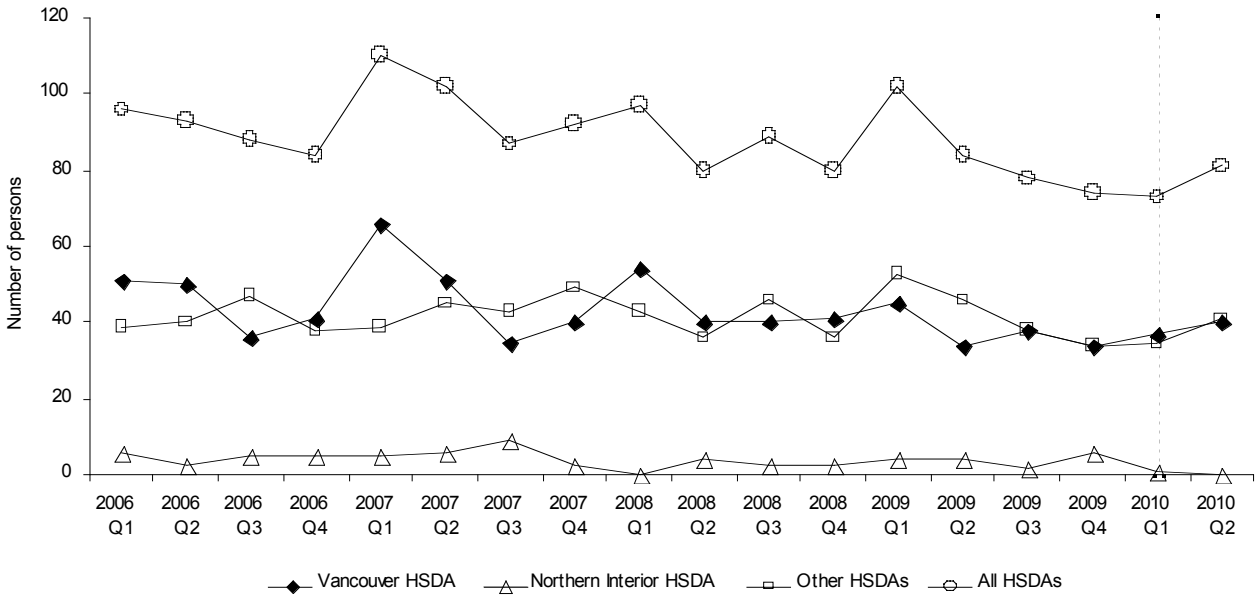
Comments on indicator:

- Would be difficult to include POC HIV testing and data from other labs in this analysis, as this would require full sharing of identifying information for the test performed, in order to link to testing done at the Provincial Public Health Microbiology and Reference Laboratory and identify unique individuals. Total number of HIV test episodes (indicator #1) may be preferable.

STOP HIV/AIDS (GOAL 1): INDICATOR 3

TARGET	ACTUAL	
Increase during first 2 years then decrease	**VAN**	Stable or increasing trend
	NI	Decreasing trend

3. Number of new HIV diagnoses



Interpretation / Comment	Stable or increasing trend in Vancouver HSDA and decreasing trend in Northern Interior HSDA although may be due to small number variability. Stable or increasing trend in other HSDA.
Description of Measure	Number of individuals identified with a new diagnosis of HIV (i.e., a new positive HIV test).
Significance	The number of individuals identified with a new HIV diagnosis may be influenced by initiatives to expand HIV screening (resulting in increased case-finding and an increase in new diagnoses - may be observed during initial implementation of screening initiatives) and decreases in HIV incidence as a result of expanded HAART which would result in a decrease in new HIV diagnoses.
Data Source(s)	Provincial HIV/AIDS surveillance database at BCCDC.
Calculation Method	On receipt of a positive HIV test result, history of previous HIV testing is elicited from provincial databases or during public health follow-up. An individual identified with a new positive HIV test in BC is included (individuals with a previous positive HIV test inside or outside BC are excluded).[1] Allocation by region is based on address of individual with new HIV diagnosis, or if unknown, address of ordering clinician or clinic. Unit of analysis is number of new diagnoses of HIV per quarter.
Limitations	This indicator is not a measure of HIV incidence (number of newly acquired HIV infections) within each time period, as an individual can be diagnosed with HIV at varying lengths of time after acquiring infection (months to years). May be difficult to interpret trends given influence of both HIV testing trends and HIV incidence on this variable. In Northern Interior HSDA, there will be greater variability for this indicator due to small numbers making trends more difficult to interpret.

[1] *For HIV case definition, refer to Annual Surveillance Report: HIV and Sexually Transmitted Infections 2008, BCCDC (Technical Appendix).*

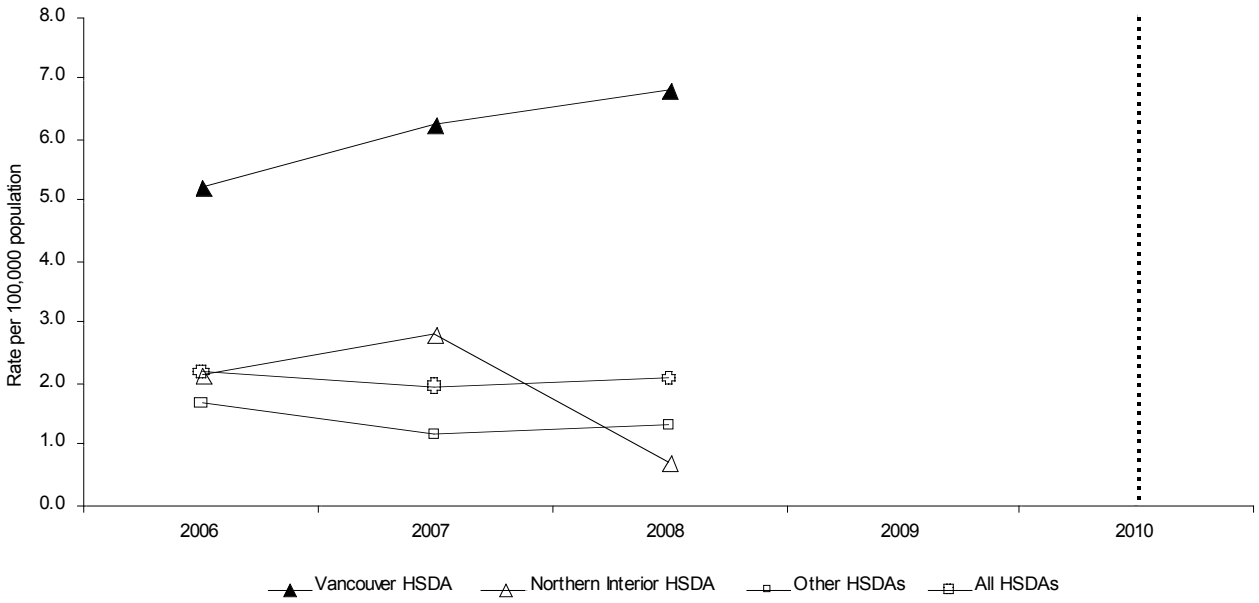
3. Number of new HIV diagnoses (data table)

Quarter	Vancouver HSDA	Northern Interior HSDA	Other HSDAs	All HSDAs
2006 Q1	51	6	39	96
2006 Q2	50	3	40	93
2006 Q3	36	5	47	88
2006 Q4	41	5	38	84
2007 Q1	66	5	39	110
2007 Q2	51	6	45	102
2007 Q3	35	9	43	87
2007 Q4	40	3	49	92
2008 Q1	54	0	43	97
2008 Q2	40	4	36	80
2008 Q3	40	3	46	89
2008 Q4	41	3	36	80
2009 Q1	45	4	53	102
2009 Q2	34	4	46	84
2009 Q3	38	2	38	78
2009 Q4	34	6	34	74
2010 Q1	37	1	35	73
2010 Q2	40	0	41	81

STOP HIV/AIDS (GOAL 1): INDICATOR 4

TARGET	ACTUAL	
Decrease	**VAN**	No comment at this time.
	NI	No comment at this time.

4. Rate of new AIDS case reports



Comment / Interpretation	Comment will be provided when 2009 data is available.
Description of Measure	The rate of individuals with an AIDS case report, which indicates the first diagnosis of an AIDS defining illness in a individual with HIV infection.
Significance	Presentation with an AIDS defining illness may indicate delayed diagnosis of HIV, delays in initiation of HAART or sub-optimal management of HAART.
Data Source(s)	Provincial HIV/AIDS surveillance database at BCCDC. Majority of AIDS case reports are reported by the Drug Treatment Program, BCCFE, which submits data twice yearly to BCCDC.
Calculation Method	Multiple AIDS case report forms may be submitted for the same individual; only the first case report form is included in the rate of new AIDS case reports.[2] Denominator: Population of region Numerator: Individuals with AIDS case reports. Allocation by region is based on address of the individual with an AIDS case report at the time of reporting, or if unknown, address of clinician or clinic completing the AIDS case report form. Unit of analysis is the rate of new AIDS case reports per 100,000 population per year.
Limitations	In BC, AIDS surveillance is based on passive reporting initiated by care providers, and under-reporting is likely. There is an expected reporting delay of up to 12 months and this indicator will only be generated at the end of the following calendar year (i.e., data for 2009 will be available in January 2011). In Northern Interior HSDA, there will be greater variability for this indicator due to small numbers making trends more difficult to interpret.

[2] *For AIDS case definition, refer to Annual Surveillance Report: HIV and Sexually Transmitted Infections 2008, BCCDC (Technical Appendix).*

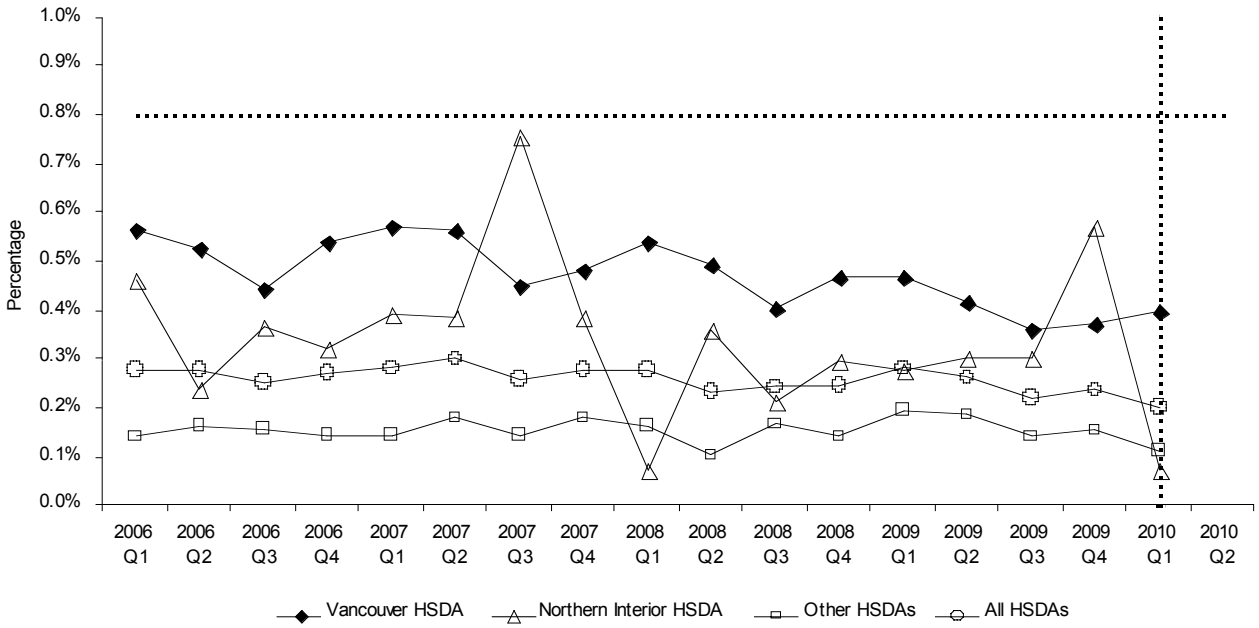
4. Rate of new AIDS case reports (data table)

Year	Vancouver HSDA		Northern Interior HSDA		Other HSDAs		All HSDAs	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
2006	32	5.2	3	2.1	58	1.7	93	2.2
2007	39	6.3	4	2.8	41	1.2	84	1.9
2008	43	6.8	1	0.7	47	1.3	91	2.1
2009								
2010								

STOP HIV/AIDS (GOAL 2): INDICATOR 5

TARGET	ACTUAL	
Increase from 0.4 to 0.8 percent	**VAN**	Stable or increasing
	NI	Stable or decreasing

5. Percentage positivity among persons tested for HIV



Interpretation / Comment	Slight increasing trend observed in Vancouver HSDA in 2010 Q1 compared to stable or decreasing trends in other HSDA. Trend in Northern Interior HSDA is stable or decreasing (high variability due to small number of cases per quarter).
Description of Measure	The percentage of unique individuals who are tested for HIV who have a positive HIV test.
Significance	Percentage positivity may be a better reflection of the effectiveness of HIV screening and case-finding than overall test volume or new diagnoses of HIV. This indicator is influenced by HIV screening initiatives (percentage positivity may increase or decrease depending on the overall test volume and reach into populations with undiagnosed HIV infection) and decreases in HIV incidence, which would result in decreased percentage positivity.
Data Source(s)	Misys Laboratory database at the Provincial Public Health Microbiology and Reference Laboratory (PHSA).
Calculation Method	Denominator: All unique individuals tested for HIV. Numerator: Number of unique individuals tested for HIV who have a positive HIV test. Allocation by region is based on address of ordering clinician or clinic, or if unknown, address of individual undergoing HIV testing. Unit of analysis is the percentage positivity of all HIV tests per quarter.
Limitations	As per Indicator #1 and #2. The numerator includes individuals who have a first positive HIV test in HIV laboratory data (repeat positive tests are excluded). Individuals having a previous positive HIV test outside of BC, or who test using different identifiers, are included in the numerator. May be difficult to interpret significance of trends given influence of both HIV testing trends and HIV incidence on this variable. In Northern Interior HSDA, there will be greater variability for this indicator due to small numbers making trends more difficult to interpret.

5. Percentage positivity among persons tested for HIV (data table)

Quarter	Vancouver HSDA			Northern Interior HSDA			Other HSDA			All HSDA		
	First HIV+	HIV Test	%	First HIV+	HIV Test	%	First HIV+	HIV Test	%	First HIV+	HIV Test	%
2006 Q1	73	12,928	0.6%	7	1,526	0.5%	40	28,566	0.1%	120	43,020	0.3%
2006 Q2	65	12,331	0.5%	3	1,269	0.2%	43	26,278	0.2%	111	39,878	0.3%
2006 Q3	56	12,580	0.4%	5	1,361	0.4%	43	27,353	0.2%	104	41,294	0.3%
2006 Q4	66	12,202	0.5%	4	1,239	0.3%	38	26,329	0.1%	108	39,770	0.3%
2007 Q1	77	13,452	0.6%	6	1,526	0.4%	44	30,339	0.1%	127	45,317	0.3%
2007 Q2	69	12,242	0.6%	5	1,306	0.4%	48	27,031	0.2%	122	40,579	0.3%
2007 Q3	58	12,909	0.4%	10	1,325	0.8%	39	27,044	0.1%	107	41,278	0.3%
2007 Q4	61	12,645	0.5%	5	1,308	0.4%	49	27,300	0.2%	115	41,253	0.3%
2008 Q1	75	13,860	0.5%	1	1,422	0.1%	47	29,091	0.2%	123	44,373	0.3%
2008 Q2	67	13,584	0.5%	5	1,396	0.4%	30	28,973	0.1%	102	43,953	0.2%
2008 Q3	55	13,653	0.4%	3	1,406	0.2%	47	28,437	0.2%	105	43,496	0.2%
2008 Q4	61	13,112	0.5%	4	1,341	0.3%	40	28,397	0.1%	105	42,850	0.2%
2009 Q1	66	14,172	0.5%	4	1,462	0.3%	57	29,367	0.2%	127	45,001	0.3%
2009 Q2	57	13,737	0.4%	4	1,313	0.3%	51	27,556	0.2%	112	42,606	0.3%
2009 Q3	51	14,101	0.4%	4	1,317	0.3%	39	27,515	0.1%	94	42,933	0.2%
2009 Q4	49	13,182	0.4%	7	1,231	0.6%	40	26,124	0.2%	96	40,537	0.2%
2010 Q1	57	14,441	0.4%	1	1,438	0.1%	33	29,211	0.1%	91	45,090	0.2%
2010 Q2												

Comments on indicator:

- As numerator includes repeat positive tests (e.g., individuals with a previous positive HIV test outside of BC), can restrict the numerator to new diagnoses of HIV only (new positive HIV tests), which will require linkage of Provincial Public Health Microbiology and Reference Laboratory data to the Provincial HIV surveillance data (not yet done in this context).
- **If data on number of point of care tests and tests from other labs can be shared**, it may be better to look at a proxy for true percentage positivity, where numerator = new diagnoses of HIV in the Provincial HIV surveillance database, and denominator = number of HIV test episodes (including point of care HIV test episodes).

STOP HIV/AIDS (GOAL 2): INDICATOR 6a

TARGET	ACTUAL	
Increase	**VAN**	Not yet available.
	NI	Not yet available.

6a. Proportion of individuals tested for syphilis who are tested for HIV at the same clinical encounter

- Indicator requires new data linkages to generate – not yet available.

Interpretation / Comment	Not yet available.
Description of Measure	The percentage of individuals who are tested for syphilis who are also tested for HIV at the same clinical visit or encounter. This indicator also includes women who are undergoing prenatal testing for syphilis and HIV.
Significance	A syphilis test may indicate that an individual has risk behaviours which may also be associated with an increased risk of HIV. Ensuring all individuals getting a syphilis test are tested for HIV may lead to increased case-finding and reduce the number of individuals who are unaware of their HIV status. This may be a focus of communications with clinicians conducting HIV testing.
Data Source(s)	Misys Laboratory database at the Provincial Public Health Microbiology and Reference Laboratory (PHSA), which conducts >95% of all HIV and syphilis testing in BC.
Calculation Method	Denominator: All unique individuals tested for syphilis Numerator: Number of unique individuals tested for syphilis who are also tested for HIV on the same blood specimen (i.e., same test requisition). Individuals with a syphilis test who are linked to an earlier positive HIV test result are excluded from the analysis. Allocation by region is based on address of ordering clinician or clinic, or if unknown, address of individual undergoing syphilis testing. Unit of analysis is the percentage of individuals tested for syphilis who are tested for HIV at the same clinical encounter, by quarter.
Limitations	Individuals who test for HIV using different identifiers (e.g., initials, pseudonyms, non-nominally) than are used for testing for an STI will not be included in the numerator. Individuals receiving a point of care HIV test, or an HIV test at another laboratory, will not be included.

6a. Proportion of individuals tested for syphilis who are tested for HIV at the same visit (data table)

Not yet available.

Comments on indicator:

- Will need to assess the validity of this indicator once the data linkage permitting analysis is complete.
- Are only able to look at this for syphilis testing. While looking at the proportion of individuals tested for gonorrhea or Chlamydia who are also tested for HIV would be ideal, the majority of these tests are done at private labs and testing data is not available for analysis.

STOP HIV/AIDS (GOAL 2): INDICATOR 6b

TARGET	ACTUAL
Increase	**VAN** Not yet available **NI** Not yet available

6b. Proportion of individuals with a new STI diagnosis who are tested for HIV within 3 months of STI diagnosis

- Indicator requires new data linkages to generate – not yet available.

Interpretation / Comment	Not yet available.
Description of Measure	The percentage of individuals with a new diagnosis of a sexually transmitted infection (STI) who are tested for HIV within 3 months of their STI diagnosis.
Significance	An STI diagnosis indicates that an individual may have risk behaviours which may also be associated with an increased risk of HIV. Ensuring all individuals with a new STI diagnosis are tested for HIV may lead to increased case-finding and reduce the number of individuals who are unaware of their HIV status. This may be focus of communications with clinicians conducting HIV testing.
Data Source(s)	Provincial STI surveillance system at BCCDC. Misys Laboratory database at the Provincial Public Health Microbiology and Reference Laboratory (PHSA).
Calculation Method	An individual with a new diagnosis of an STI is defined as an individual with a new case report for chlamydia, gonorrhea, or infectious syphilis. HIV test history is identified through a probabilistic match of identifiers for STI cases and identifiers for HIV testers. Individuals with a new diagnosis of an STI who are linked to an earlier positive HIV test result are excluded from the analysis. Denominator = All unique individuals with a new STI diagnosis. Numerator = Number of unique individuals with a new STI diagnosis who have a documented HIV test within 3 months of date of STI diagnosis. Allocation by region is based on address of individual with new STI diagnosis, or if unknown, address of ordering clinician or clinic. Unit of analysis is the percentage of individuals with a new STI diagnosis who are tested within 3 months for HIV, by quarter.
Limitations	Individuals who test for HIV using different identifiers (e.g., initials, pseudonyms, non-nominally) than are used for an STI diagnosis will not be included in the numerator. Individuals receiving a point of care HIV test, or an HIV test at another laboratory, will not be included.

6b. Proportion of individuals with a new STI diagnosis (e.g., syphilis) who are simultaneously tested for HIV (data table)

Not yet available.

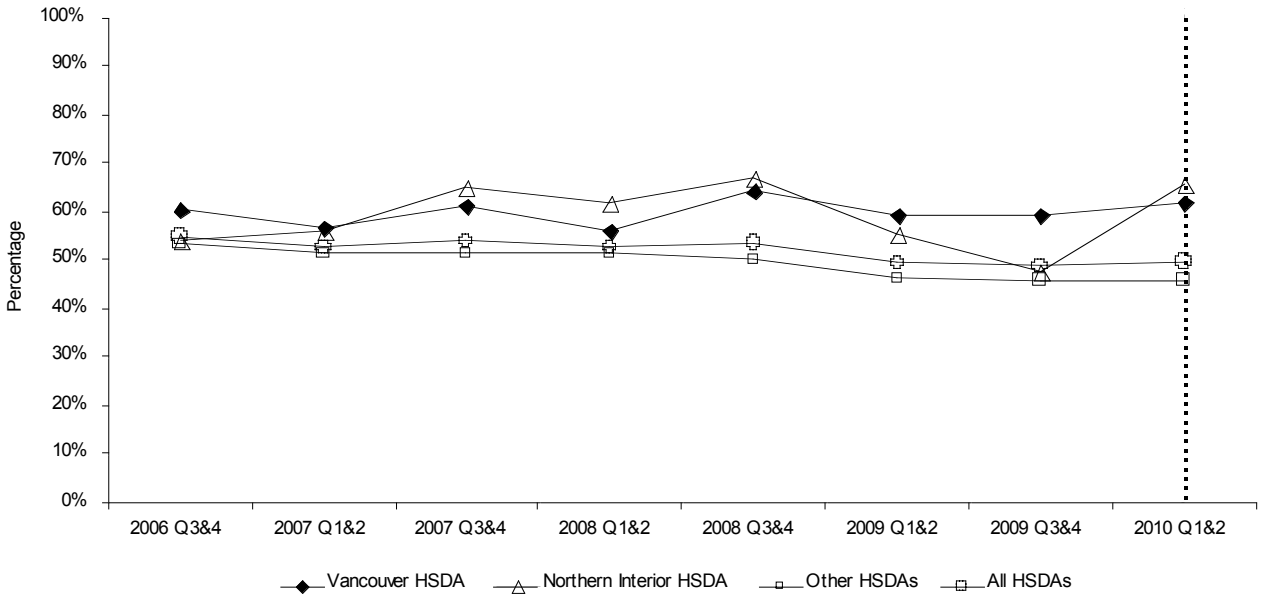
Comments on indicator:

- Final version of indicator (e.g., definition of new STI diagnosis) will be dependent on data quality and ability to link to HIV testing data. May need to select a specific STI.
- Indicator would be most robust if included high volume STIs (Chlamydia, gonorrhea), however may not be most valid (e.g., chlamydia is most common among young heterosexual persons, who may not be a priority population for expanding HIV screening).

STOP HIV/AIDS (GOAL 2): INDICATOR 7

TARGET	ACTUAL	
Increase	**VAN**	Stable or increasing
	NI	Variable

7. Proportion of individuals with a new HCV diagnosis who are tested for HIV within 3 months of HCV diagnosis



Interpretation / Comment	In the first half of 2010 the proportion of individuals with a new Hepatitis C (HCV) diagnosis tested for HIV within 3 months is stable or slightly increasing in Vancouver HSDA compared to stable in other HSDA. Rates for Northern Interior HSDA are variable.
Description of Measure	The percentage of individuals with a new diagnosis of HCV who are tested for HIV within 3 months of their HCV diagnosis.
Significance	Previous BC research on HCV and HIV co-infected persons demonstrated that most individuals were infected with HCV prior to HIV. As the majority of new HCV diagnoses are considered to be related to injection drug use, this indicator may reflect HIV testing initiatives in the IDU population.
Data Source(s)	Provincial HCV surveillance database (PHSA). Misys Laboratory database at the Provincial Public Health Microbiology and Reference Laboratory (PHSA).
Calculation Method	An individual with a new HCV diagnosis is defined as an individual with a new case report for HCV (first report for this individual in the provincial HCV surveillance database since 2006). Denominator: All unique individuals with a new diagnosis of HCV. Numerator: Number of unique individuals with a new diagnosis of HCV who have an HIV test within three months of diagnosis. Allocation by region is based on address of individual with new HCV diagnosis, or if unknown, address of ordering clinician or clinic. Unit of analysis is the percentage of individuals with a new HCV diagnosis who are tested within 3 months for HIV, per six months.
Limitations	Use of partial or differing identifiers may affect linkage to HIV test results. POC HIV test data not included. In Northern Interior HSDA, there will be greater variability for this indicator due to small numbers making trends more difficult to interpret.

7. Proportion of individuals with a new HCV diagnosis who are tested for HIV within 3 months of HCV diagnosis (data table)

Quarter	Vancouver HSDA			Northern HSDA			Other HSDAs			All HSDAs		
	HCV+ & HIV Test	HCV+	%	HCV+ & HIV Test	HCV+	%	HCV+ & HIV Test	HCV+	%	HCV+ & HIV Test	HCV+	%
2006 Q3&4	429	712	60%	72	134	54%	1294	2425	53%	1795	3271	55%
2007 Q1&2	365	643	57%	83	148	56%	1290	2519	51%	1738	3310	53%
2007 Q3&4	357	581	61%	81	124	65%	1094	2134	51%	1532	2839	54%
2008 Q1&2	297	530	56%	78	126	62%	1121	2189	51%	1496	2845	53%
2008 Q3&4	294	458	64%	92	137	67%	982	1967	50%	1368	2562	53%
2009 Q1&2	318	535	59%	74	134	55%	908	1972	46%	1300	2641	49%
2009 Q3&4	282	475	59%	40	84	48%	755	1645	46%	1077	2204	49%
2010 Q1&2	281	453	62%	55	84	65%	802	1752	46%	1138	2289	50%

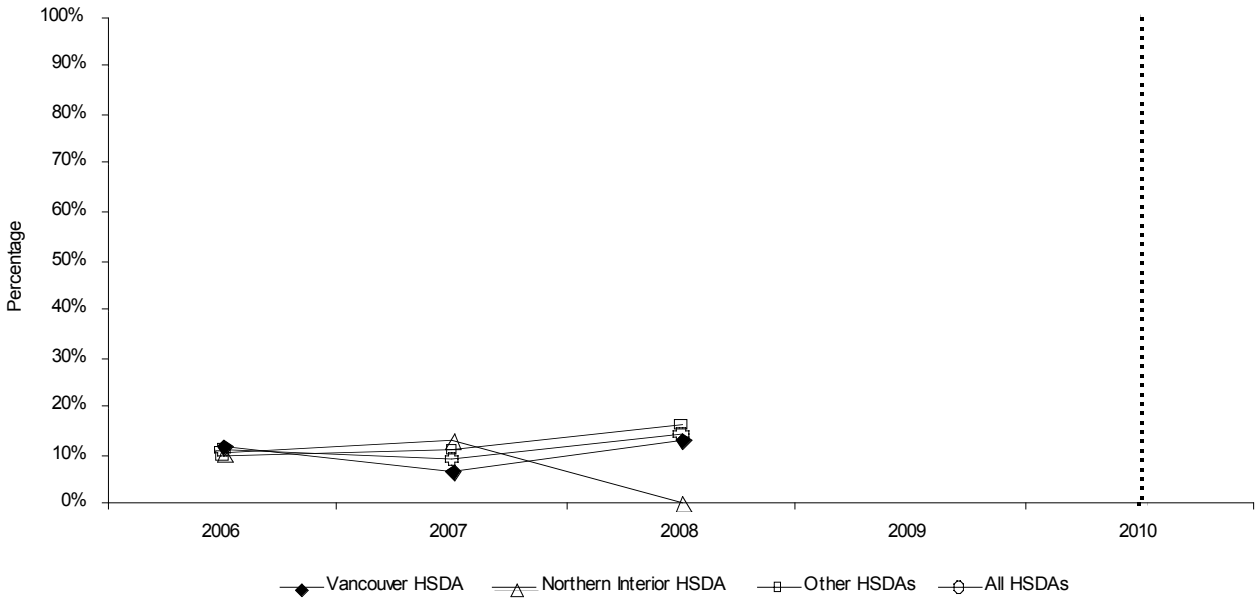
Comments on indicator:

- May be better indicator than #6 as have large number of HCV diagnoses, and strong validity as marker for injection drug use, which is a priority population for HIV testing through STOP HIV.
- The algorithm for allocation by region needs to be revised for a small number of cases with conflicting addresses for the HCV diagnosis and for the HIV test. The present algorithm randomly selects one of the addresses and does not ensure that the address of patient's residence takes precedence over that of the clinician or clinic.

STOP HIV/AIDS (GOAL 2): INDICATOR 9

TARGET	ACTUAL	
Decrease	**VAN**	No comment at this time.
	NI	No comment at this time.

9. Proportion of individuals with a new HIV diagnosis with advanced HIV disease



Interpretation / Comment	Comment will be provided when 2009 data are available.
Description of Measure	The percentage of individuals testing newly positive for HIV who are at an advanced stage of HIV infection at the time of their HIV diagnosis.
Significance	Indicates the proportion of individuals with a new positive HIV test who test at an advanced stage of infection (i.e., diagnosis occurs years later than the time of HIV infection). These individuals have had persistent undiagnosed HIV infection which impacts on clinical care and may contribute to ongoing HIV transmission. Delays in diagnosis may be due to lack of awareness regarding risk of HIV or barriers to accessing HIV testing (i.e., HIV stigma).
Data Source(s)	Provincial HIV/AIDS surveillance database at BCCDC.
Calculation Method	Probabilistic matching of identifiers is used to link AIDS and HIV case report forms. Advanced HIV disease (AHD) at diagnosis is defined as an individual with a new diagnosis of HIV and with a linked AIDS case report form before or up to 12 months after the date of HIV diagnosis. Denominator = Individuals with a new diagnosis of HIV (Indicator #3) Numerator = Individuals newly diagnosed with HIV and with AHD Allocation by region is based on address of individual with new HIV diagnosis, or if unknown, address of ordering clinician or clinic. Unit of analysis is proportion of newly diagnosed individuals with AHD per year.
Limitations	As per Indicator #4. There is an expected reporting delay of up to 12 months and this indicator will only be generated at the end of the following calendar year (i.e., data for 2009 will be available in January 2011). Individuals with different identifiers on HIV and AIDS case report forms will not be identified (and are not included in the numerator). In Northern Interior HSDA, there will be greater variability for this indicator due to small numbers making trends more difficult to interpret.

9. Proportion of individuals with a new HIV diagnosis with advanced HIV disease (data table)

Year	Vancouver HSDA			Northern Interior HSDA			Other HSDAs			All HSDAs		
	HIV+ and AHD	HIV+	%	HIV+ and AHD	HIV+	%	HIV+ and AHD	HIV+	%	HIV+ and AHD	HIV+	%
2006	21	178	12%	2	19	11%	16	164	10%	39	361	11%
2007	13	192	7%	3	23	13%	19	176	11%	35	391	9%
2008	23	175	13%	0	10	0%	26	161	16%	49	346	14%
2009												
2010												

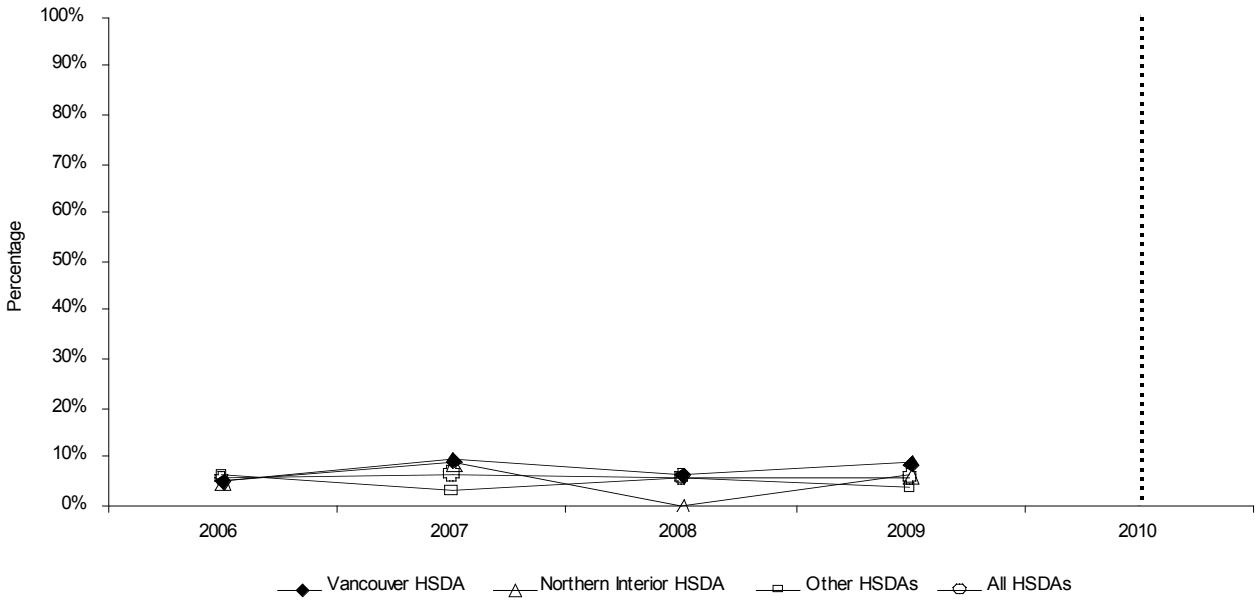
Comments on indicator:

- This indicator can be improved by consideration of first viral load and CD4+ count, which will allow for greater identification of AHD (e.g., expand AHD case definition to include all individuals with a first CD4+ count of < 200 cells/mm3). This will be achieved through data linkage with BCCFE data and is captured in Indicator # 10.

STOP HIV/AIDS (GOAL 2): INDICATOR 11

TARGET	ACTUAL	
Increase	**VAN**	Stable trend
	NI	Variable trend

11. Proportion of individuals with a new HIV diagnosis with acute HIV infection



Interpretation / Comment	There is considerable variation in this indicator by year due to the small number of individuals identified with acute HIV infection.
Description of Measure	The percentage of individuals testing newly positive for HIV who are identified as having acute HIV infection (i.e., tested up to 6-8 weeks after infection with HIV).
Significance	Individuals may test for HIV during the period of acute infection due to sero-conversion symptoms, as a result of enhanced case-finding (e.g., testing of contacts of a new index HIV case), by testing after a recent risk exposure or event, or by chance (e.g., a routine tester who tests while acutely infected). Increases in this indicator may reflect overall earlier diagnosis of HIV or increased HIV testing frequency in individuals at risk of HIV infection.
Data Source(s)	Provincial HIV/AIDS surveillance database at BCCDC.
Calculation Method	Acute HIV infection is defined on the basis of characteristic laboratory findings and the absence of an AIDS case report before or up to 12 months after HIV diagnosis. Denominator = All unique individuals with a new HIV diagnosis. Numerator = Number of unique individuals with a new HIV diagnosis and with acute HIV infection. Allocation by region is based on address of individual with new HIV diagnosis, or if unknown, address of ordering clinician or clinic. Unit of analysis is proportion of newly diagnosed individuals with acute HIV infection per year.
Limitations	Ability to identify acute HIV infection depends on test window periods, which vary by type of test used (which may vary by region and over time). Pooled NAAT testing is available at select clinics with gay male clients in Vancouver and contributes to increased detection of acute HIV infection in men testing at those sites. A future switch from 3rd generation to 4th generation EIA testing at the Provincial Public Health Microbiology and Reference Laboratory is likely, which will influence trends. In Northern Interior HSDA, there will be greater variability for this indicator due to small numbers making trends more difficult to interpret.

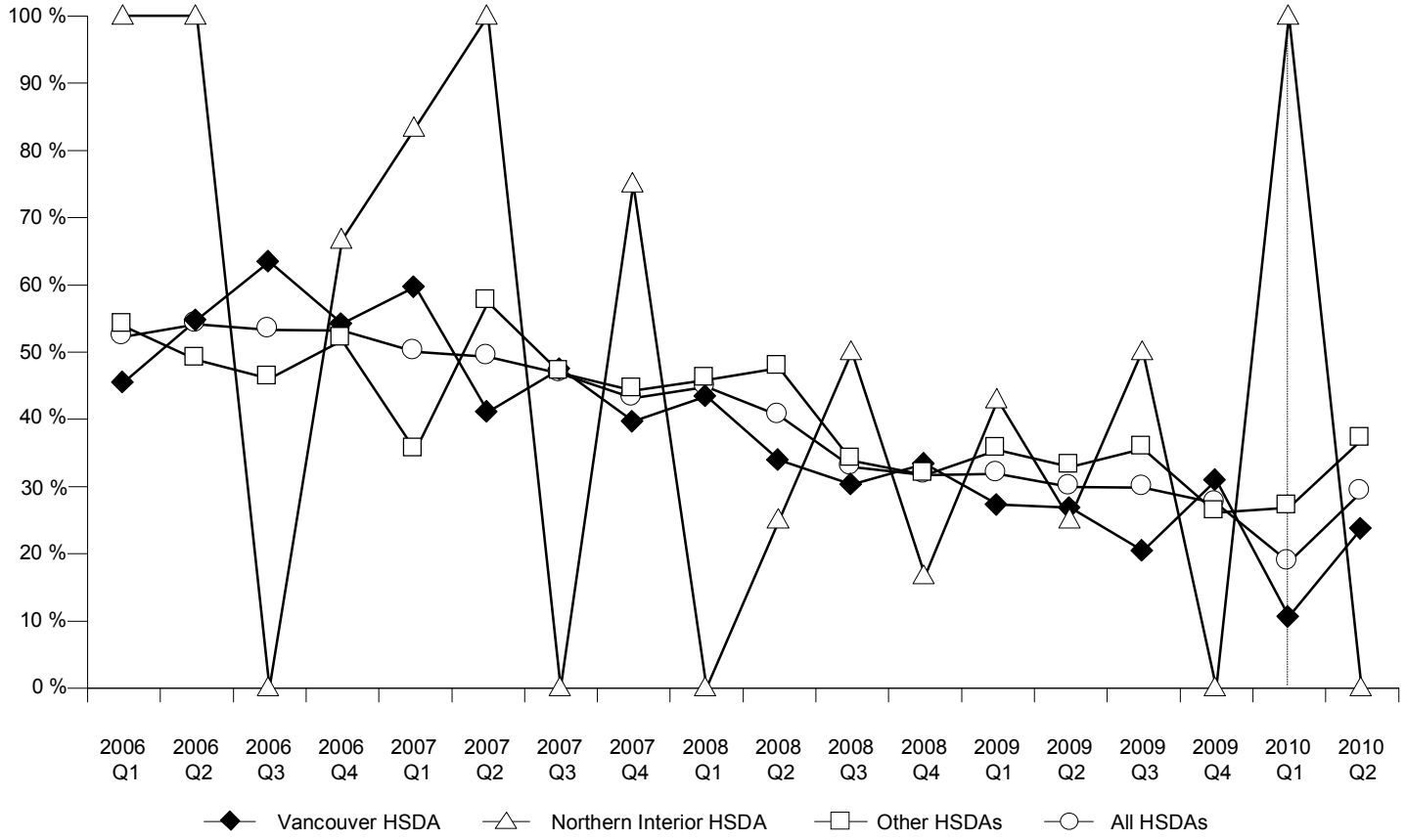
11. Proportion of new positive HIV tests with acute infection (data table)

Year	Vancouver HSDA			Northern Interior HSDA			Other HSDAs			All HSDAs		
	HIV+ & Acute	HIV+	%	HIV+ & Acute	HIV+	%	HIV+ & Acute	HIV+	%	HIV+ & Acute	HIV+	%
2006	9	178	5%	1	19	5%	10	164	6%	20	361	6%
2007	18	192	9%	2	23	9%	5	176	3%	25	391	6%
2008	11	175	6%	0	10	0%	9	161	6%	20	346	6%
2009	13	151	9%	1	16	6%	6	171	4%	20	338	6%
2010												

STOP HIV/AIDS (GOAL 3): INDICATOR 14

TARGET	ACTUAL
Decrease	**VAN:** 23.73% **NI:** 0.00%

14. Proportion of individuals starting antiretroviral therapy (ART) late in the course of HIV disease



Interpretation / Comment	The proportion of individuals initiating therapy late in the disease course has seen a modest decline in the first quarter of 2010 in Vancouver and other HSDA while a spike in the Northern Interior is highly unstable due to the extremely small sample.
Description of Measure	The percentage of individuals initiating first antiretroviral therapy who have a CD4 cell count < 200 cells/ml.
Significance	CD4 counts are used to stage HIV disease. A CD4 cell count of fewer than 200 indicates advanced HIV disease and presumes longer term HIV infection. To maximize the benefits of ART both to the patient and in terms of avoiding transmission, early treatment is essential. Studies based on the HIV positive population in British Columbia have found substantial reductions in morbidity and mortality associated with earlier treatment. While the decision algorithm is complex, for asymptomatic individuals, therapy should be initiated before the CD4+ count falls below 350 cells/uL. Above this CD4 threshold, decisions should be based on co-morbidities, risk for disease progression including rate of decline in CD4+ count and a plasma HIV-1 RNA level greater than 100,000 copies/mL, and risk factors for cardiovascular and other non-AIDS diseases as well as the patient's willingness to adhere to long-term treatment.
Data Source(s)	British Columbia Centre for Excellence Drug Treatment Program Database with ongoing data sharing with PHC.

Calculation Method	Denominator: All individuals who started first ever ART and have a CD4 count recorded Numerator: The subset of the denominator who have CD4 count<200 cells/ml CD4 value used is that taken closest to the ART start date. Unit of analysis is unique patients/quarter.
Limitations	CD4s at first therapy initiation are relatively complete as CD4 data from prescription forms are well documented (90%+ range). NB- Not every CD4 count is available for every patient over the course of treatment- particularly for individuals with counts done on Vancouver Island or at BC Women's Health Centre.

14. Proportion of individuals starting antiretroviral therapy (ART) late in the course of HIV disease (data table)

Quarter	Vancouver HSDA		Northern Interior		Other HSDAs		All HSDAs	
2006 Q1	25 / 55	45.45%	6 / 6	100.00%	28 / 52	53.85%	59 / 113	52.21%
2006 Q2	29 / 53	54.72%	4 / 4	100.00%	20 / 41	48.78%	53 / 98	54.08%
2006 Q3	26 / 41	63.41%	0 / 1	0.00%	23 / 50	46.00%	49 / 92	53.26%
2006 Q4	26 / 48	54.17%	2 / 3	66.67%	30 / 58	51.72%	58 / 109	53.21%
2007 Q1	34 / 57	59.65%	5 / 6	83.33%	18 / 51	35.29%	57 / 114	50.00%
2007 Q2	30 / 73	41.10%	2 / 2	100.00%	35 / 61	57.38%	67 / 136	49.26%
2007 Q3	28 / 59	47.46%	0 / 1	0.00%	22 / 47	46.81%	50 / 107	46.73%
2007 Q4	23 / 58	39.66%	3 / 4	75.00%	27 / 61	44.26%	53 / 123	43.09%
2008 Q1	23 / 53	43.40%	0 / 0	0.00%	33 / 72	45.83%	56 / 125	44.80%
2008 Q2	19 / 56	33.93%	1 / 4	25.00%	29 / 61	47.54%	49 / 121	40.50%
2008 Q3	20 / 66	30.30%	3 / 6	50.00%	22 / 65	33.85%	45 / 137	32.85%
2008 Q4	18 / 54	33.33%	1 / 6	16.67%	19 / 60	31.67%	38 / 120	31.67%
2009 Q1	18 / 66	27.27%	3 / 7	42.86%	23 / 65	35.38%	44 / 138	31.88%
2009 Q2	15 / 56	26.79%	1 / 4	25.00%	22 / 67	32.84%	38 / 127	29.92%
2009 Q3	10 / 49	20.41%	3 / 6	50.00%	21 / 59	35.59%	34 / 114	29.82%
2009 Q4	17 / 55	30.91%	0 / 3	0.00%	19 / 73	26.03%	36 / 131	27.48%
2010 Q1	7 / 66	10.61%	1 / 1	100.00%	15 / 56	26.79%	23 / 123	18.70%
2010 Q2	14 / 59	23.73%	0 / 4	0.00%	21 / 57	36.84%	35 / 120	29.17%

STOP HIV/AIDS (GOAL 3): INDICATOR 18

TARGET	ACTUAL
	VAN Not yet available. **NI** Not yet available.

18. Proportion of individuals with a new HIV diagnosis who are tested for syphilis within 3 months of HIV diagnosis.

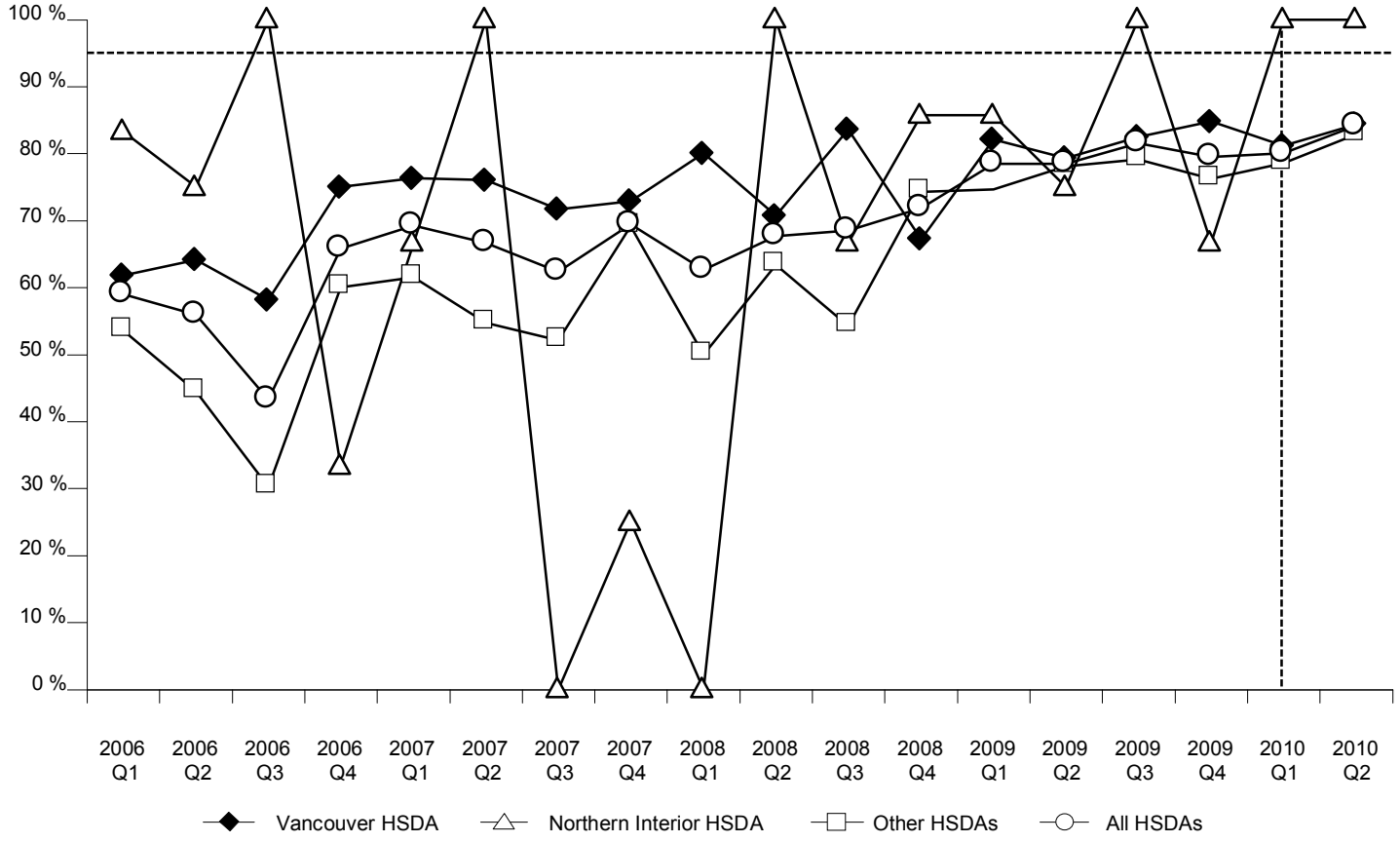
- Indicator requires new data linkages to generate – not yet available.

Interpretation / Comment	Not yet available.
Description of Measure	The percent of individuals with a new diagnosis of HIV who have a syphilis test within 3 months of their HIV diagnosis date.
Significance	Testing for sexually transmitted infections including syphilis is recommended routinely for individuals with HIV upon entry into HIV-related primary care and by public health during follow-up of new positive HIV tests. Measuring the proportion of individuals with a new diagnosis of HIV who have a syphilis test within 3 months after the date of HIV diagnosis may be a proxy for entry into HIV-related primary care and success of public health follow-up.
Data Source(s)	Provincial HIV/AIDS surveillance database at BCCDC. Misys Laboratory database at the Provincial Public Health Microbiology and Reference Laboratory (PHSA).
Calculation Method	Based on a probabilistic match of identifiers for individuals with a new positive HIV test and individuals undergoing syphilis testing. Denominator = All unique individuals with a new HIV diagnosis. Numerator = Number of unique individuals with a new HIV diagnosis who have a syphilis test within 3 months after the date of HIV diagnosis. Allocation by region is based on address of individual with new HIV diagnosis, or if unknown, address of ordering clinician or clinic. Unit of analysis is the percentage of individuals with a new HIV diagnosis who are tested within 3 months for syphilis, by quarter.
Limitations	Individuals who test for HIV using different identifiers (e.g., initials, pseudonyms, non-nominally) than are used for syphilis testing will not be included in the numerator. Individuals receiving a point of care HIV test, or an HIV test at another laboratory, will not be included.

STOP HIV/AIDS (GOAL 3): INDICATOR 21

TARGET	ACTUAL
Increase by >95%	**VAN:** 84.38% **NI:** 100.00%

21. Percentage of HIV-infected individuals who are tested for genotypic antiretroviral drug resistance prior to starting antiretroviral therapy (ART)



Interpretation / Comment	Estimates on the proportion of individuals receiving genotypic testing is relatively steady since pilot initiation and similar across HSDAs with the usual caveat that low numbers in the NI area yield unstable and widely varying estimates.
Description of Measure	Percentage of HIV positive individuals who receive laboratory testing for genotypic drug resistance before they begin antiretroviral therapy.
Significance	Over time individuals exposed to ART can develop strains of HIV that are resistant to some or all of the drugs in a given therapy regimen. When this happens the efficacy of the drugs declines and the drug regimen must be changed. People with resistant virus can pass along these resistant virus strains so that those they infect actually have drug resistance even though they have never taken antiretroviral drugs. Therefore, it is important to conduct genotype testing on those who have never been exposed to ART but who are initiating therapy. The purpose of this is to establish whether the patient is harbouring drug resistant strains of the HI virus so that the therapy can be targeted to attack that virus. Testing typically includes resistance to nucleoside reverse transcriptase inhibitors (NRTI), non nucleoside reverse transcriptase inhibitors (NNRTI), M18, and protease inhibitor (PI) classes of therapy.
Data Source(s)	British Columbia Centre for Excellence Drug Treatment Program Database

Calculation Method	Percentage of all those initiating first therapy who have prior genotype testing. Denominator: All individuals who initiated first ever antiretroviral therapy Numerator: All those in the denominator that have had at least one resistance profile conducted prior to therapy start date.
Limitations	Viral load must be ≥250 copies/mL for testing to be conducted. Prior to January 1, 2002 pVL had to reach ≥1,000 copies/mL.

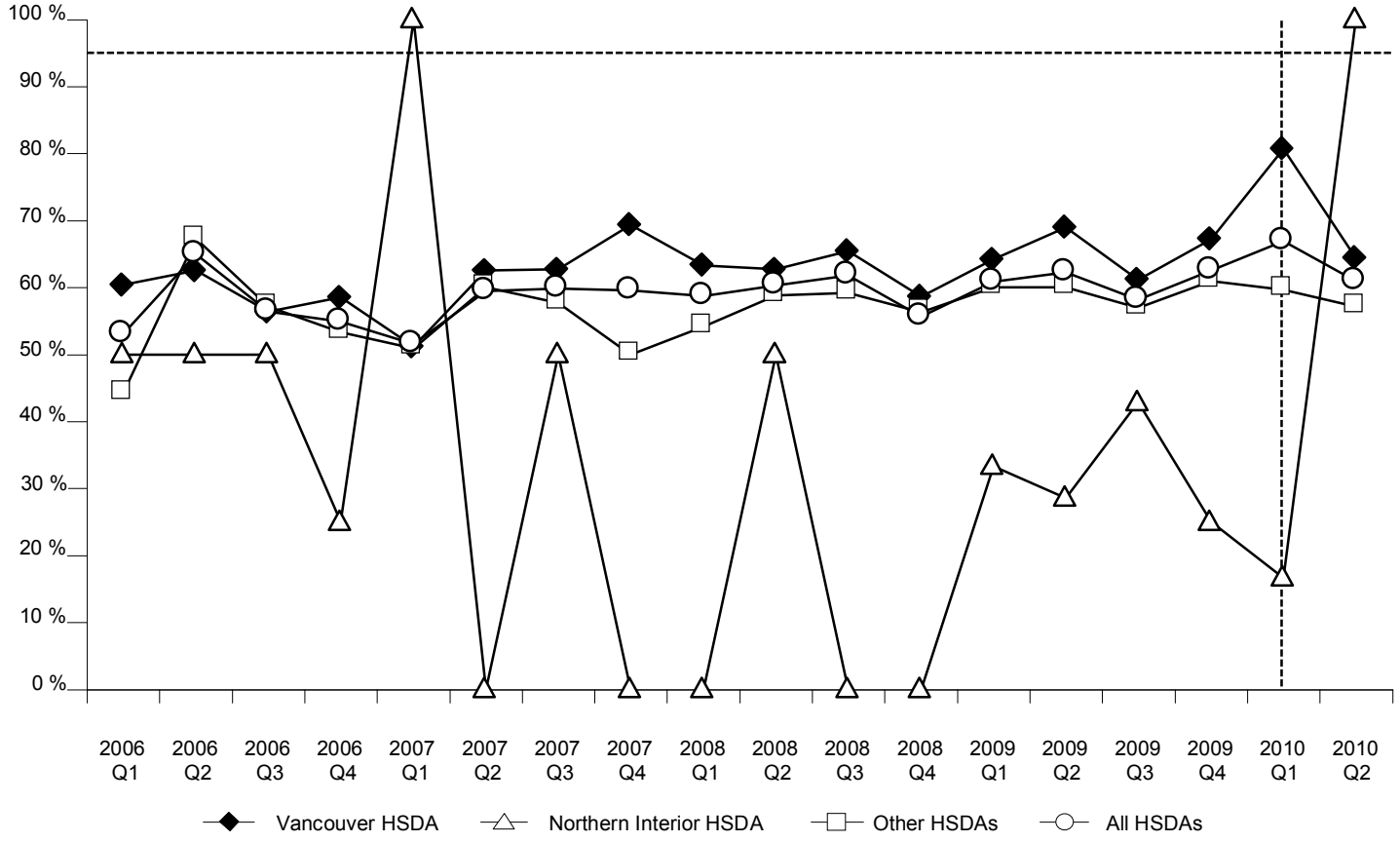
21. Percentage of HIV-infected individuals who are tested for genotypic antiretroviral drug resistance prior to starting antiretroviral therapy (ART) (data table)

Quarter	Vancouver HSDA		Northern Interior		Other HSDAs		All HSDAs	
2006 Q1	34 / 55	61.82%	5 / 6	83.33%	30 / 56	53.57%	69 / 117	58.97%
2006 Q2	34 / 53	64.15%	3 / 4	75.00%	20 / 45	44.44%	57 / 102	55.88%
2006 Q3	25 / 43	58.14%	1 / 1	100.00%	16 / 53	30.19%	42 / 97	43.30%
2006 Q4	36 / 48	75.00%	1 / 3	33.33%	36 / 60	60.00%	73 / 111	65.77%
2007 Q1	45 / 59	76.27%	4 / 6	66.67%	32 / 52	61.54%	81 / 117	69.23%
2007 Q2	57 / 75	76.00%	2 / 2	100.00%	35 / 64	54.69%	94 / 141	66.67%
2007 Q3	43 / 60	71.67%	0 / 1	0.00%	25 / 48	52.08%	68 / 109	62.39%
2007 Q4	43 / 59	72.88%	1 / 4	25.00%	47 / 68	69.12%	91 / 131	69.47%
2008 Q1	44 / 55	80.00%	0 / 0	0.00%	38 / 76	50.00%	82 / 131	62.60%
2008 Q2	41 / 58	70.69%	4 / 4	100.00%	45 / 71	63.38%	90 / 133	67.67%
2008 Q3	56 / 67	83.58%	4 / 6	66.67%	38 / 70	54.29%	98 / 143	68.53%
2008 Q4	39 / 58	67.24%	6 / 7	85.71%	52 / 70	74.29%	97 / 135	71.85%
2009 Q1	55 / 67	82.09%	6 / 7	85.71%	59 / 79	74.68%	120 / 153	78.43%
2009 Q2	46 / 58	79.31%	3 / 4	75.00%	64 / 82	78.05%	113 / 144	78.47%
2009 Q3	47 / 57	82.46%	6 / 6	100.00%	53 / 67	79.10%	106 / 130	81.54%
2009 Q4	50 / 59	84.75%	2 / 3	66.67%	64 / 84	76.19%	116 / 146	79.45%
2010 Q1	56 / 69	81.16%	1 / 1	100.00%	55 / 70	78.57%	112 / 140	80.00%
2010 Q2	54 / 64	84.38%	4 / 4	100.00%	53 / 64	82.81%	111 / 132	84.09%

STOP HIV/AIDS (GOAL 3): INDICATOR 22

TARGET	ACTUAL
Increase to >95%	**VAN:** 64.41% **NI:** 100.00%

22. Percentage of individuals starting ART who achieve HIV plasma viral load (pVL) of < 50 copies/mL within 6 months of therapy initiation



Interpretation / Comment	There has been a modest rise subjects achieving therapy success in all HSDA combined driven largely by Vancouver. In the NI continued decline, while based on few subjects, requires monitoring. Improving on current status will require identification of the contribution of various factors to treatment failure so that interventions can be developed and those at greatest risk targeted for special attention.
Description of Measure	Percentage of individuals initiating first antiretroviral therapy who have a pVl below the limit of detection within the first six months of ART.
Significance	Plasma viral load is a measure of viral activity assessed by quantifying the amount of virus present in the patient's blood. Lower pVl is associated with reduced disease activity with counts below the limit of detection indicating excellent virus suppression- the ultimate goal of ART. As long as viral suppression is maintained disease progression is curtailed. Individuals receiving appropriate therapy in accordance with clinical guidelines are generally expected to successfully suppress virus within the first six months of treatment. However, imperfect adherence to therapy or resistance due to primary infection with a drug resistant strain of HIV can negatively impact therapy success.
Data Source(s)	British Columbia Centre for Excellence Drug Treatment Program Database

Calculation Method	Denominator: All individuals initiating first ever ART. Numerator: Of individuals in the denominator, those who had two consecutive pVl measures <400copies/mL both taken after therapy start and at least one of which is taken within the first six months of treatment
Limitations	This measure can be confounded by patient-related factors including adherence. For many years the lowest limit of detection was considered to be pVL<50copies/mL. Recently a new laboratory technique has been adopted to quantify pVL. This method is less accurate at low pVL levels and currently a pVL<400 can still be considered fully suppressed. NB-Requires further discussion.

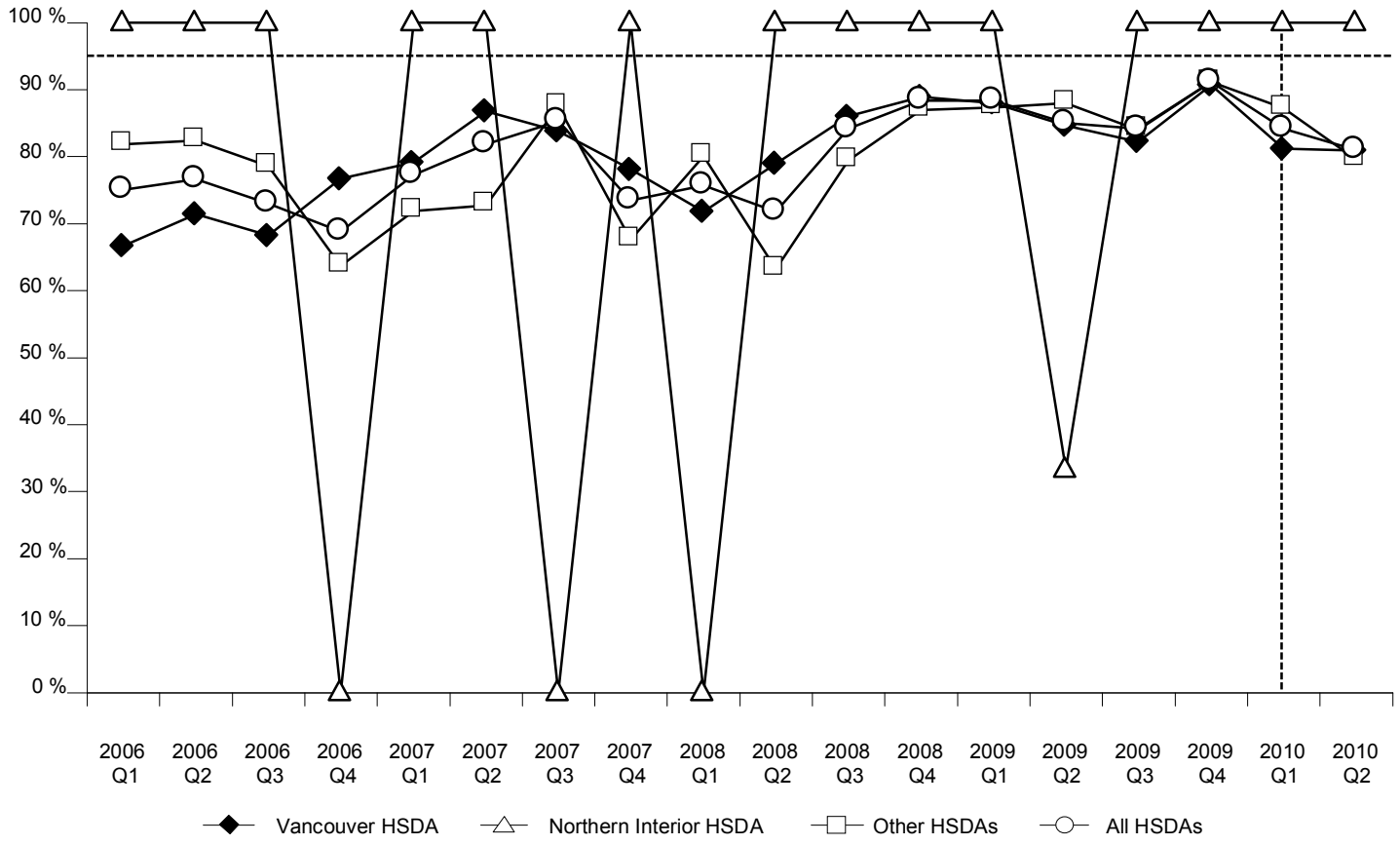
22. Percentage of individuals starting ART who achieve HIV plasma viral load (pVL) of < 50 copies/mL within 6 months of therapy initiation (data table)

Quarter	Vancouver HSDA		Northern Interior		Other HSDAs		All HSDAs	
2006 Q1	32 / 53	60.38%	2 / 4	50.00%	19 / 43	44.19%	53 / 100	53.00%
2006 Q2	25 / 40	62.50%	1 / 2	50.00%	37 / 55	67.27%	63 / 97	64.95%
2006 Q3	31 / 55	56.36%	3 / 6	50.00%	32 / 56	57.14%	66 / 117	56.41%
2006 Q4	31 / 53	58.49%	1 / 4	25.00%	24 / 45	53.33%	56 / 102	54.90%
2007 Q1	22 / 43	51.16%	1 / 1	100.00%	27 / 53	50.94%	50 / 97	51.55%
2007 Q2	30 / 48	62.50%	0 / 3	0.00%	36 / 60	60.00%	66 / 111	59.46%
2007 Q3	37 / 59	62.71%	3 / 6	50.00%	30 / 52	57.69%	70 / 117	59.83%
2007 Q4	52 / 75	69.33%	0 / 2	0.00%	32 / 64	50.00%	84 / 141	59.57%
2008 Q1	38 / 60	63.33%	0 / 1	0.00%	26 / 48	54.17%	64 / 109	58.72%
2008 Q2	37 / 59	62.71%	2 / 4	50.00%	40 / 68	58.82%	79 / 131	60.31%
2008 Q3	36 / 55	65.45%	0 / 0	0.00%	45 / 76	59.21%	81 / 131	61.83%
2008 Q4	34 / 58	58.62%	0 / 4	0.00%	40 / 71	56.34%	74 / 133	55.64%
2009 Q1	43 / 67	64.18%	2 / 6	33.33%	42 / 70	60.00%	87 / 143	60.84%
2009 Q2	40 / 58	68.97%	2 / 7	28.57%	42 / 70	60.00%	84 / 135	62.22%
2009 Q3	41 / 67	61.19%	3 / 7	42.86%	45 / 79	56.96%	89 / 153	58.17%
2009 Q4	39 / 58	67.24%	1 / 4	25.00%	50 / 82	60.98%	90 / 144	62.50%
2010 Q1	46 / 57	80.70%	1 / 6	16.67%	40 / 67	59.70%	87 / 130	66.92%
2010 Q2	38 / 59	64.41%	3 / 3	100.00%	48 / 84	57.14%	89 / 146	60.96%

STOP HIV/AIDS (GOAL 3): INDICATOR 23

TARGET	ACTUAL
Increase to >95%	**VAN:** 80.85% **NI:** 100.00%

23. Percentage of individuals who initiated antiretroviral therapy (ART) with a recommended therapy regimen (among those with no drug resistance).



Interpretation / Comment	The trend remains relatively stable and nearing the target with the majority of subjects overall receiving appropriate first line therapy. Currently recommended therapy options include: • Lamivudine/lopinavir+ritonavir/tenofovir • Lamivudine/efavirenz/tenofovir • Lamivudine/nevirapine/tenofovir • Lamivudine/ritonavir/tenofovir/ritonavir boosted atazanavir • lopinavir+ritonavir/tenofavir/emtricitabine • efavirenz/tenofovir/emtricitabine • nevirapine/tenofovir/emtricitabine • tenofavir/ritonavir boosted atazanavir/emtricitabine
Description of Measure	Percentage of individuals who are starting first ever ART and who have been shown to have no drug resistance who initiate therapy with one of the therapy regimens recommended for those who have never been on therapy and who do not have any drug resistance.
Significance	As described in Clinical Indicator 21, resistance testing is an important precursor to treatment. Drug resistance complicates treatment and limits treatment options. Individuals without drug resistance have the option of using, and should be prescribed, the most simple and effective therapy options. Currently 8 options are recommended for people who are new to treatment and who do not have drug resistance.
Data Source(s)	British Columbia Centre for Excellence Drug Treatment Program Database

Calculation Method	Denominator: All individuals initiating first ever ART who had drug resistance testing prior to ART start date which documented no resistance to any of nucleoside reverse transcriptase inhibitors (NRTI), non nucleoside reverse transcriptase inhibitors (NNRTI), M18, and protease inhibitor (PI) classes of therapy. Numerator: Individuals in the denominator who initiated first ever therapy with one of the eight therapy regimens recommended.
Limitations	Patients may have specific contraindications to first line combinations other than resistance and these data are not completely captured.

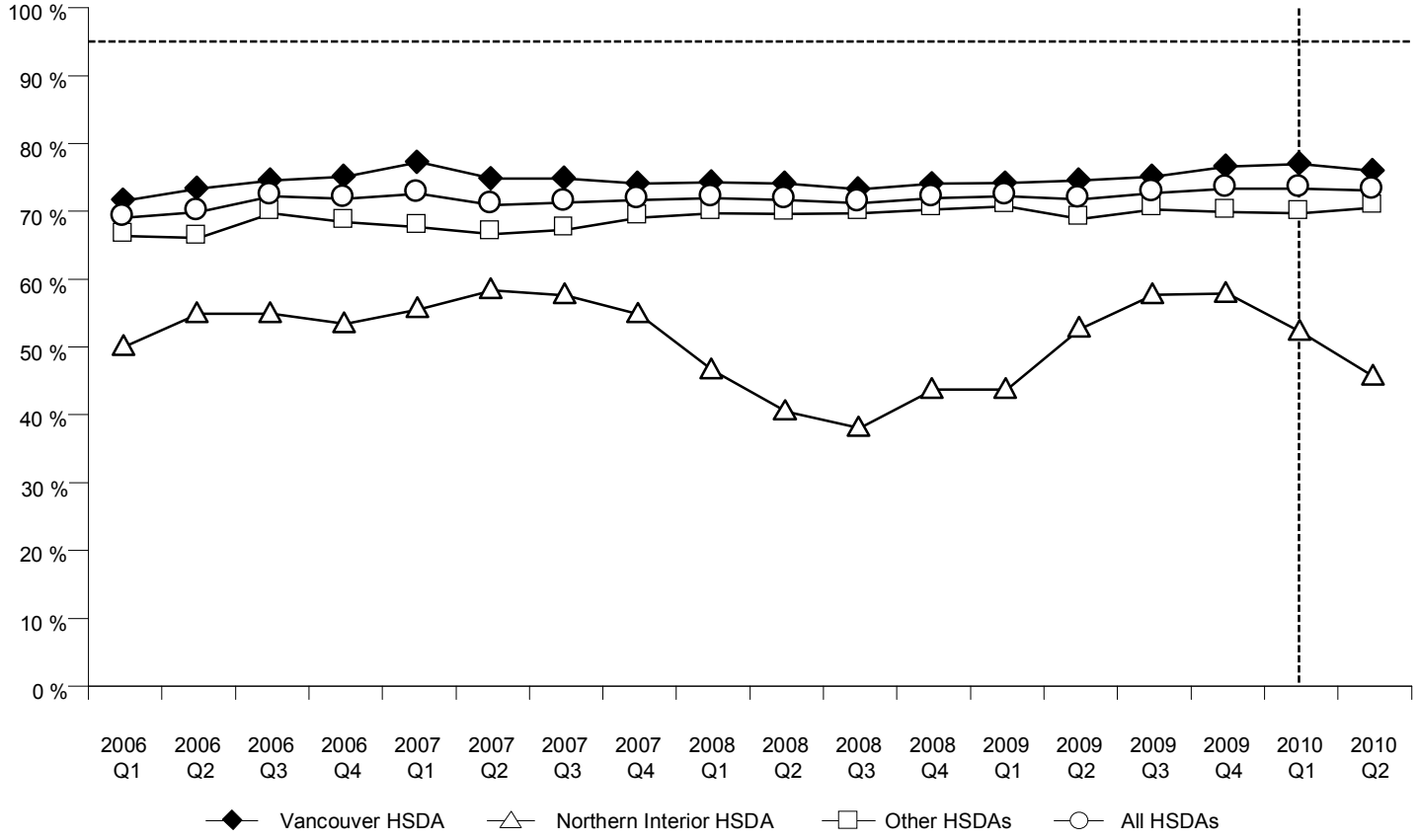
23. Percentage of individuals who initiated antiretroviral therapy (ART) with a recommended therapy regimen (among those with no drug resistance) (data table)

Quarter	Vancouver HSDA		Northern Interior		Other HSDAs		All HSDAs	
2006 Q1	18 / 27	66.67%	3 / 3	100.00%	18 / 22	81.82%	39 / 52	75.00%
2006 Q2	20 / 28	71.43%	2 / 2	100.00%	14 / 17	82.35%	36 / 47	76.60%
2006 Q3	15 / 22	68.18%	1 / 1	100.00%	11 / 14	78.57%	27 / 37	72.97%
2006 Q4	23 / 30	76.67%	0 / 1	0.00%	21 / 33	63.64%	44 / 64	68.75%
2007 Q1	34 / 43	79.07%	4 / 4	100.00%	23 / 32	71.88%	61 / 79	77.22%
2007 Q2	46 / 53	86.79%	2 / 2	100.00%	24 / 33	72.73%	72 / 88	81.82%
2007 Q3	31 / 37	83.78%	0 / 0	0.00%	21 / 24	87.50%	52 / 61	85.25%
2007 Q4	32 / 41	78.05%	1 / 1	100.00%	25 / 37	67.57%	58 / 79	73.42%
2008 Q1	28 / 39	71.79%	0 / 0	0.00%	28 / 35	80.00%	56 / 74	75.68%
2008 Q2	30 / 38	78.95%	2 / 2	100.00%	24 / 38	63.16%	56 / 78	71.79%
2008 Q3	43 / 50	86.00%	4 / 4	100.00%	27 / 34	79.41%	74 / 88	84.09%
2008 Q4	32 / 36	88.89%	4 / 4	100.00%	40 / 46	86.96%	76 / 86	88.37%
2009 Q1	44 / 50	88.00%	6 / 6	100.00%	48 / 55	87.27%	98 / 111	88.29%
2009 Q2	33 / 39	84.62%	1 / 3	33.33%	51 / 58	87.93%	85 / 100	85.00%
2009 Q3	37 / 45	82.22%	6 / 6	100.00%	42 / 50	84.00%	85 / 101	84.16%
2009 Q4	39 / 43	90.70%	2 / 2	100.00%	51 / 56	91.07%	92 / 101	91.09%
2010 Q1	43 / 53	81.13%	1 / 1	100.00%	41 / 47	87.23%	85 / 101	84.16%
2010 Q2	38 / 47	80.85%	4 / 4	100.00%	39 / 49	79.59%	81 / 100	81.00%

STOP HIV/AIDS (GOAL 3): INDICATOR 24

TARGET	ACTUAL
increase	**VAN:** 75.92% **NI:** 45.57%

24. Percentage of individuals on antiretroviral therapy (ART) that achieve annual prescription refill adherence of > 95%



Interpretation / Comment	The trend for all HSDA outside of NI remains stable. In the NI recent gains appear to have leveled for this quarter. It should be noted that because some individuals may be able to achieve suppression on lower levels of adherence data relating adherence levels to clinical outcomes are relevant more for population level analyses as opposed to individual-level assessment.
Description of Measure	Percentage of individuals starting ART that are dispensed at least 95% of their prescribed medication over the first year of therapy.
Significance	For therapy to be effective the prescribed drugs must be taken as directed. One of the primary reasons for treatment failure is incomplete adherence (missed drug doses). In fact, levels of adherence of around 95% have been correlated with sustained virologic suppression, fewer hospitalizations and reduced rates of drug resistance.
Data Source(s)	British Columbia Centre for Excellence Drug Treatment Program Database

Calculation Method	Denominator: All individuals prescribed ART Numerator: All individuals in the denominator who have at least 95% adherence over the past full year of therapy Adherence is calculated as: Denominator: 365 days Numerator: Total number of days covered by prescriptions filled (i.e., picked up by the patient or otherwise dispensed) from start date of ART to day 365.
Limitations	This measure is a proxy for adherence to ART. Adherence will be overestimated if prescriptions are filled but medication is not taken. Missed medication pick-ups may be a result of medically ordered temporary treatment interruptions rather than patient non-adherence. Patients may have stockpiles of medication at home from prior years and so may miss pickups yet remain adherent.

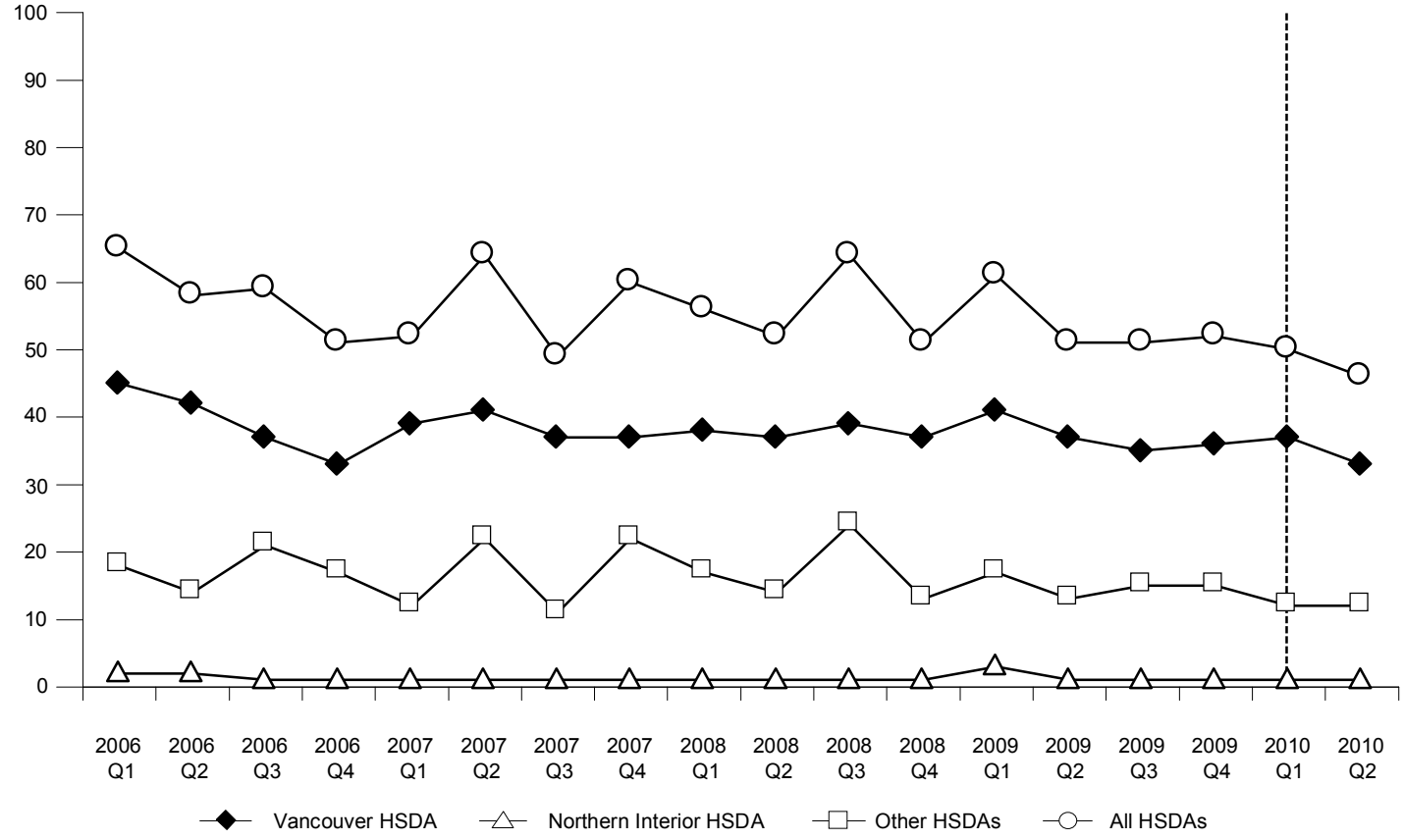
24. Percentage of individuals on antiretroviral therapy (ART) that achieve annual prescription refill adherence of > 95% (data table)

Quarter	Vancouver HSDA		Northern Interior		Other HSDAs		All HSDAs	
2006	1276 / 1783	71.56%	16 / 32	50.00%	993 / 1497	66.33%	2285 / 3312	68.99%
2006	1339 / 1826	73.33%	17 / 31	54.84%	1026 / 1554	66.02%	2382 / 3411	69.83%
2006	1387 / 1861	74.53%	17 / 31	54.84%	1089 / 1563	69.67%	2493 / 3455	72.16%
2006	1408 / 1875	75.09%	16 / 30	53.33%	1113 / 1628	68.37%	2537 / 3533	71.81%
2007	1478 / 1915	77.18%	20 / 36	55.56%	1133 / 1675	67.64%	2631 / 3626	72.56%
2007	1491 / 1994	74.77%	21 / 36	58.33%	1152 / 1729	66.63%	2664 / 3759	70.87%
2007	1532 / 2048	74.80%	19 / 33	57.58%	1175 / 1747	67.26%	2726 / 3828	71.21%
2007	1549 / 2091	74.08%	23 / 42	54.76%	1214 / 1759	69.02%	2786 / 3892	71.58%
2008	1597 / 2151	74.24%	20 / 43	46.51%	1236 / 1774	69.67%	2853 / 3968	71.90%
2008	1653 / 2232	74.06%	19 / 47	40.43%	1290 / 1855	69.54%	2962 / 4134	71.65%
2008	1663 / 2271	73.23%	19 / 50	38.00%	1321 / 1897	69.64%	3003 / 4218	71.19%
2008	1725 / 2331	74.00%	24 / 55	43.64%	1362 / 1940	70.21%	3111 / 4326	71.91%
2009	1761 / 2376	74.12%	24 / 55	43.64%	1422 / 2011	70.71%	3207 / 4442	72.20%
2009	1814 / 2434	74.53%	30 / 57	52.63%	1430 / 2077	68.85%	3274 / 4568	71.67%
2009	1882 / 2506	75.10%	34 / 59	57.63%	1487 / 2118	70.21%	3403 / 4683	72.67%
2009	1943 / 2538	76.56%	37 / 64	57.81%	1515 / 2169	69.85%	3495 / 4771	73.26%
2010	2000 / 2599	76.95%	36 / 69	52.17%	1545 / 2217	69.69%	3581 / 4885	73.31%
2010	2015 / 2654	75.92%	36 / 79	45.57%	1589 / 2253	70.53%	3640 / 4986	73.00%

STOP HIV/AIDS (GOAL 3): INDICATOR 25

TARGET	ACTUAL
Increase	**VAN:** 33 **NI:** 1

25. Number of physicians initiating therapy or providing HIV-related care to patients on antiretroviral therapy (ART)



Interpretation / Comment	The total number of physicians has remained relatively stable in the first quarter of 2010. The impact of changes in number of prescriber physicians may vary widely depending on the geographic area. The loss or gain of one or two prescribers in Vancouver proper may have little effect on patient access whereas the loss of a single physician in a rural area may have tremendous consequences for the local HIV positive population. The situation in the Northern HSDA with only one physician providing HIV therapy-related care is particularly precarious.
Description of Measure	The number of doctors who are providing HIV-related ART.
Significance	Access to high quality care close to home is of great concern for patients. The total number of physicians in a given geographic area successfully prescribing ART as either the enrolling or follow-up physician is one important measure of access for patients to HIV care.
Data Source(s)	British Columbia Centre for Excellence Drug Treatment Program Database.

Calculation Method	Simple count of the total number of physicians in the geographic area of interest who are successfully prescribing ART. Successful prescription is defined as having at least one prescription for ART filled. The unit of analysis is unique physician.
Limitations	This indicator is based on a simple count. The degree to which any given physician is engaged with their HIV-positive patients beyond providing prescriptions is not known.

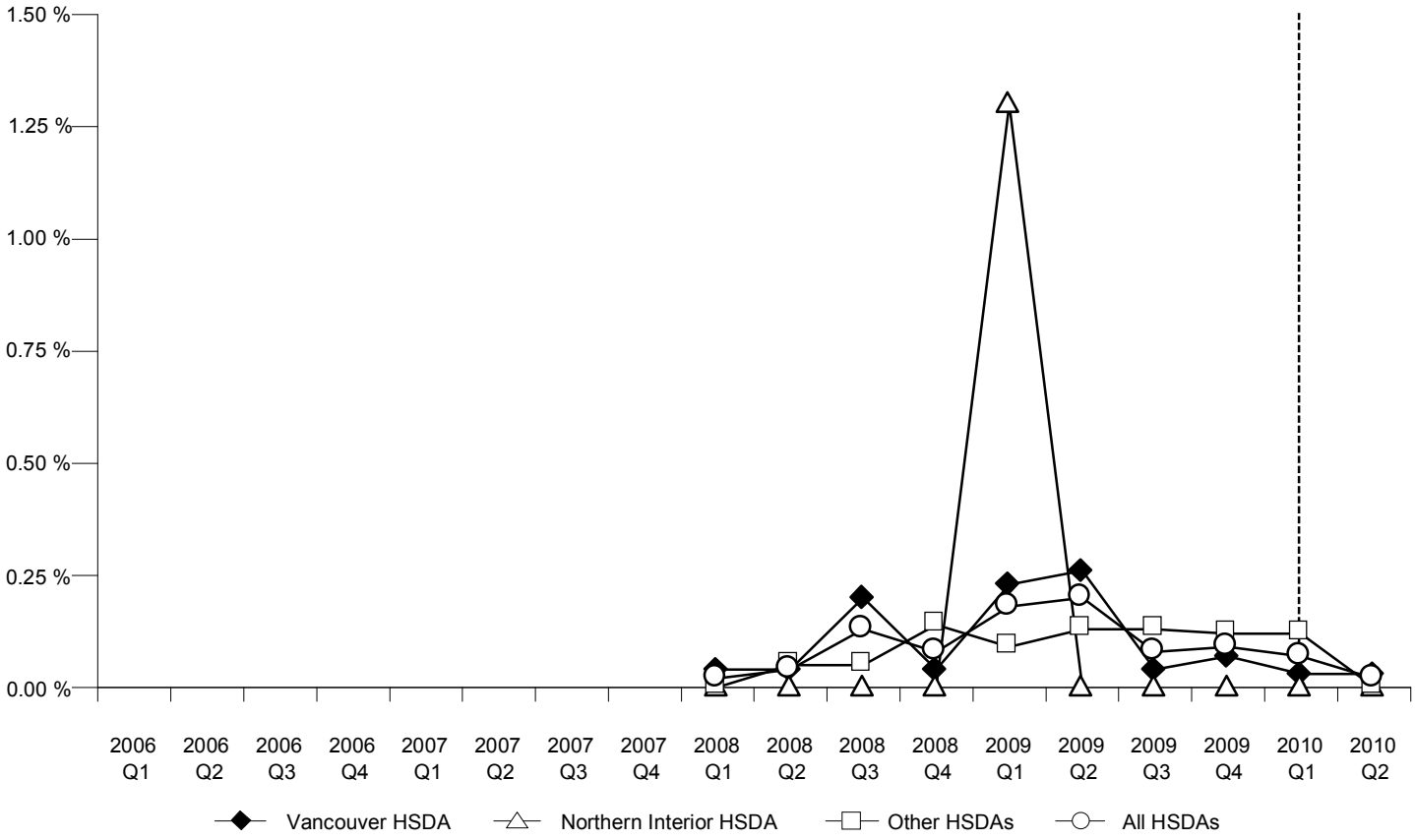
25. Number of physicians initiating therapy or providing HIV-related care to patients on antiretroviral therapy (ART) (data table)

Quarter	Vancouver HSDA	Northern Interior	Other HSDAs	All HSDAs
2006 Q1	45	2	18	65
2006 Q2	42	2	14	58
2006 Q3	37	1	21	59
2006 Q4	33	1	17	51
2007 Q1	39	1	12	52
2007 Q2	41	1	22	64
2007 Q3	37	1	11	49
2007 Q4	37	1	22	60
2008 Q1	38	1	17	56
2008 Q2	37	1	14	52
2008 Q3	39	1	24	64
2008 Q4	37	1	13	51
2009 Q1	41	3	17	61
2009 Q2	37	1	13	51
2009 Q3	35	1	15	51
2009 Q4	36	1	15	52
2010 Q1	37	1	12	50
2010 Q2	33	1	12	46

STOP HIV/AIDS (GOAL 3): INDICATOR 26

TARGET	ACTUAL
Maintain <0.5%	**VAN:** 0.03% **NI:** 0.00%

26. Percentage of individuals on antiretroviral therapy (ART) who experience a serious adverse drug reaction (ADR)



Interpretation / Comment	The trend remains stable with the goal of maintaining ADR incidence at <0.5% exceeded in all HSDS. Due to the small number of events overall, trends in this indicator must be interpreted with caution- particularly in the NIHSDA where a single case can cause a dramatic spike.
Description of Measure	Percentage of individuals on ART who have a serious negative reaction to an ART drug.
Significance	Most medications can be associated with adverse reactions. Serious adverse drug events in HIV therapy cover a wide range of problems in various organ systems and are defined as reations that are potentially life threatening or which lead to hospitalization or death. Monitoring for ADRs in the general population of ART users is important because the clinical trials in which drug testing is conducted usually include relatively few patients followed over a comparatively short time period. Therefore, trials may not identify ADR if they are very rare or are a result of very long exposure. Fortunately, the risk of a serous ADR in response to antiretroviral drugs is very low.
Data Source(s)	British Columbia Centre for Excellence Drug Treatment Program Database

Calculation Method	Denominator: Total number of distinct individuals who are taking ART and any given time in the time period of interest. Numerator: Number of serious adverse events over the time period of interest.
Limitations	Reporting of adverse drug reactions, even serious ones, is voluntary- relying on physician report. Moreover, those that are reported are not confirmed or substantiated independently and it remains unknown whether factors other than ART drugs may be responsible or partially responsible for the adverse event.

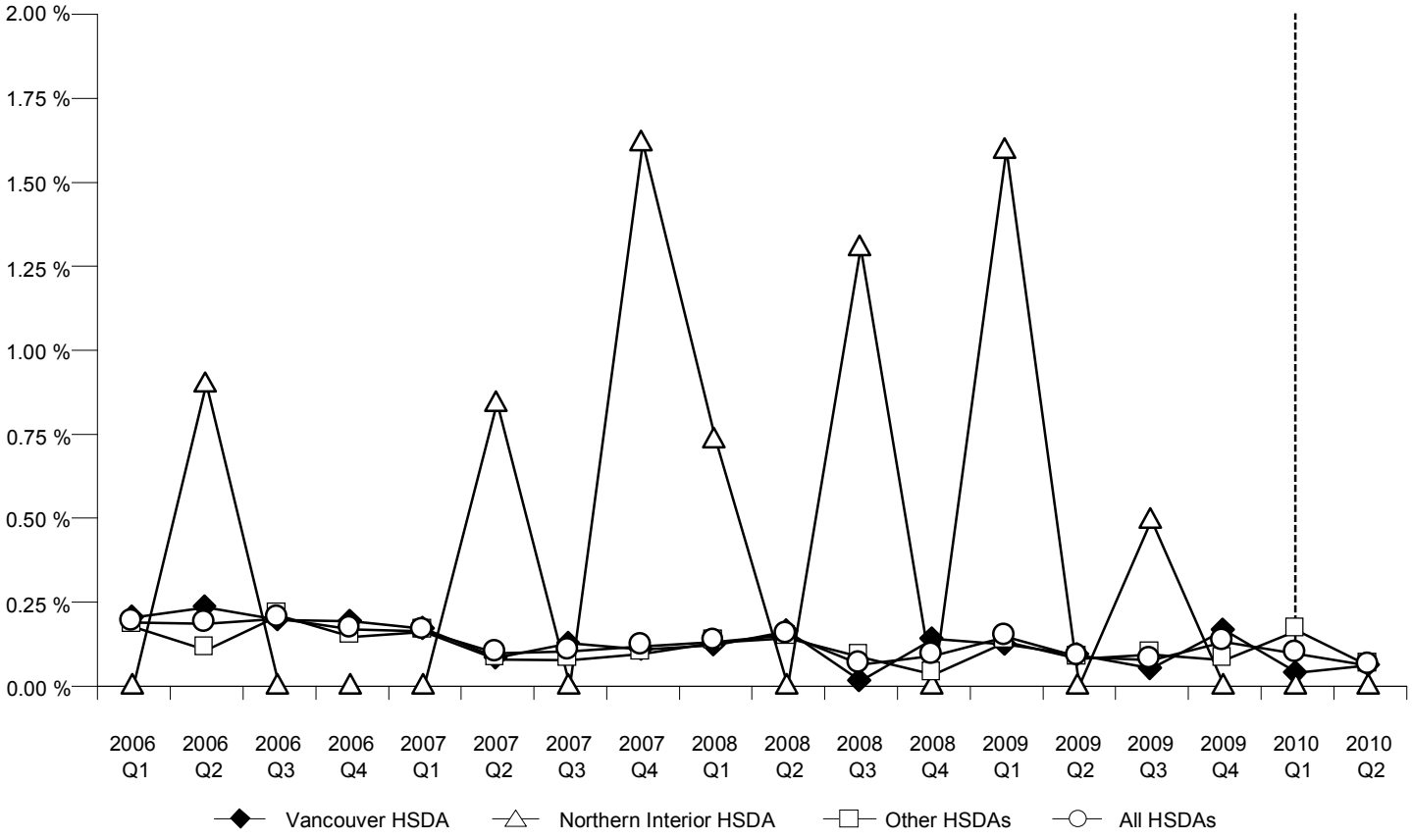
26. Percentage of individuals on antiretroviral therapy (ART) who experience a serious adverse drug reaction (ADR) (data table)

Quarter	Vancouver HSDA		Northern Interior		Other HSDAs		All HSDAs	
2006	/1970		/45		/1686		/3701	
2006	/2006		/46		/1740		/3792	
2006	/2033		/41		/1764		/3838	
2006	/2075		/42		/1804		/3921	
2007	/2123		/44		/1840		/4007	
2007	/2219		/50		/1919		/4188	
2007	/2288		/46		/1930		/4264	
2007	/2343		/54		/1955		/4352	
2008	1/2383	0.04%	0/53	0.00%	0/2006	0.00%	1/4442	0.02%
2008	1/2457	0.04%	0/56	0.00%	1/2098	0.05%	2/4611	0.04%
2008	5/2516	0.20%	0/59	0.00%	1/2150	0.05%	6/4725	0.13%
2008	1/2586	0.04%	0/67	0.00%	3/2188	0.14%	4/4841	0.08%
2009	6/2656	0.23%	1/77	1.30%	2/2243	0.09%	9/4976	0.18%
2009	7/2716	0.26%	0/81	0.00%	3/2322	0.13%	10/5119	0.20%
2009	1/2784	0.04%	0/82	0.00%	3/2346	0.13%	4/5212	0.08%
2009	2/2827	0.07%	0/83	0.00%	3/2403	0.12%	5/5313	0.09%
2010	1/2874	0.03%	0/83	0.00%	3/2464	0.12%	4/5421	0.07%
2010	1/2916	0.03%	0/91	0.00%	0/2501	0.00%	1/5508	0.02%

STOP HIV/AIDS (GOAL 3): INDICATOR 28

TARGET	ACTUAL
Decrease	**VAN:** 0.06% **NI:** 0.00%

28. Incidence of resistance to any antiretroviral drug



Interpretation / Comment	All HSDA have similar low rates of incident drug resistance over the first 2010 reporting period.
Description of Measure	Counts new cases of antiretroviral drug resistance occurring over the time period of interest among all individuals taking antiretroviral therapy.
Significance	One goal of the STOP HIV pilot is to reduce transmission of drug-resistant HIV strains. The lower the incidence of resistance and the fewer people with HIV harbouring resistant viral strains, the more successful these efforts will be.
Data Source(s)	British Columbia Centre for Excellence Drug Treatment Program Database and genotypic testing database held at the British Columbia Centre for Excellence laboratory

Calculation Method	Numerator: Number of new (excludes previously identified resistance) cases of drug resistance detected in each quarter Denominator: Total number of person-months of antiretroviral exposure in the quarter.
Limitations	This indicator show trends in the detection of resistance, however temporal trends in the frequency of resistance testing (increasing rates over time) may confound trends in the actual occurrence of resistance. Genotyping can only be conducted for individuals with pVL >= 250 copies/mL (although this may be of little clinical relevance).

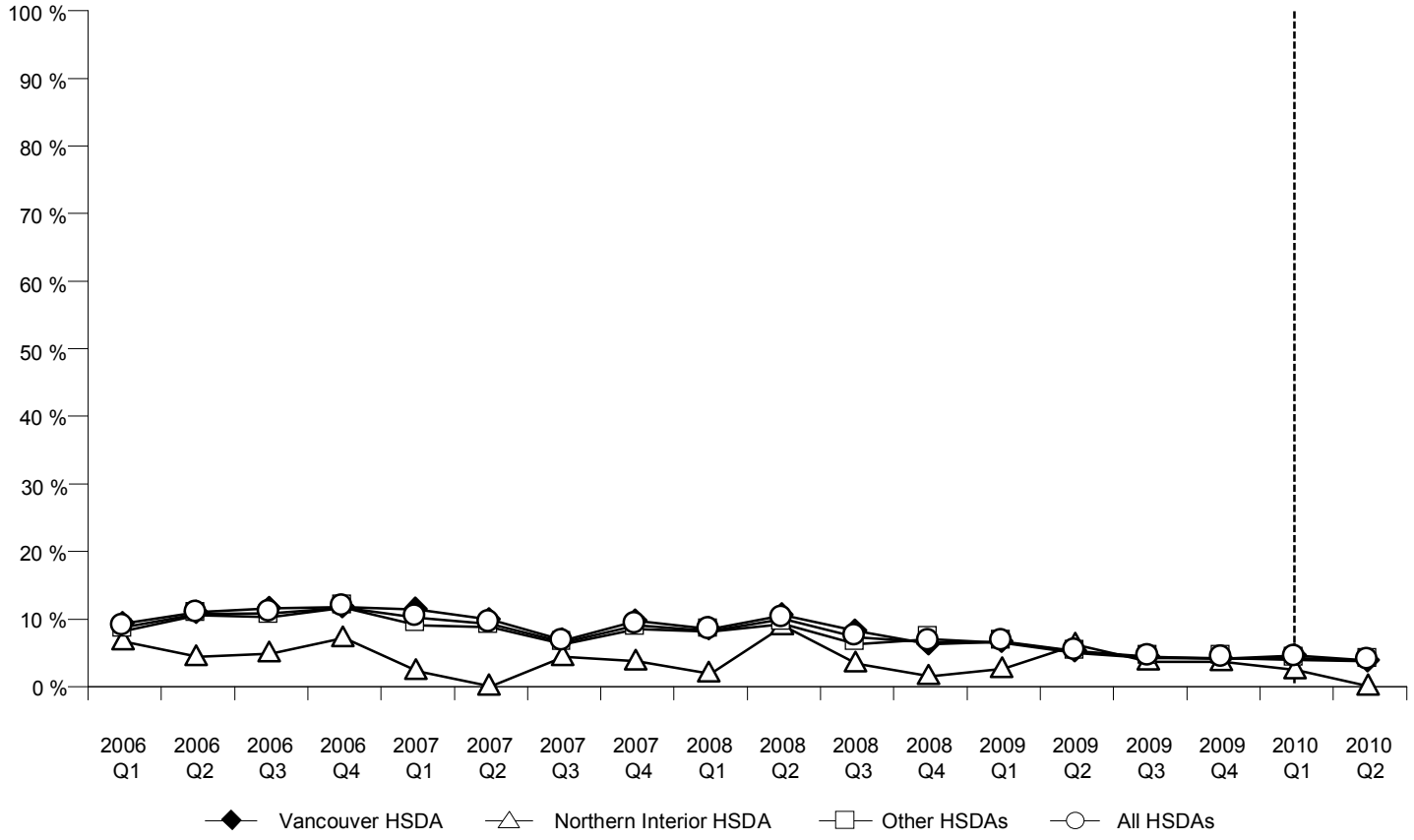
28. Incidence of resistance to any antiretroviral drug (data table)

Quarter	Vancouver HSDA		Northern Interior		Other HSDAs		All HSDAs	
2006	11 / 5407.4	0.20%	0 / 102.0	0.00%	8 / 4554.8	0.18%	19 / 10074	0.19%
2006	13 / 5554.9	0.23%	1 / 111.3	0.90%	5 / 4672.1	0.11%	19 / 10348	0.18%
2006	11 / 5612.8	0.20%	0 / 101.5	0.00%	10 / 4776.3	0.21%	21 / 10503	0.20%
2006	11 / 5753.5	0.19%	0 / 112.8	0.00%	7 / 4845.7	0.14%	18 / 10732	0.17%
2007	10 / 5899.4	0.17%	0 / 109.8	0.00%	8 / 5021.3	0.16%	18 / 11049	0.16%
2007	5 / 6058.9	0.08%	1 / 118.7	0.84%	4 / 5127.3	0.08%	11 / 11319	0.10%
2007	8 / 6365.6	0.13%	0 / 118.4	0.00%	4 / 5233.0	0.08%	12 / 11729	0.10%
2007	7 / 6493.5	0.11%	2 / 123.7	1.62%	5 / 5307.0	0.09%	14 / 11940	0.12%
2008	8 / 6622.2	0.12%	1 / 136.5	0.73%	7 / 5436.4	0.13%	16 / 12209	0.13%
2008	11 / 6755.6	0.16%	0 / 137.6	0.00%	8 / 5682.2	0.14%	19 / 12596	0.15%
2008	1 / 6896.9	0.01%	2 / 153.3	1.30%	5 / 5827.8	0.09%	8 / 12891	0.06%
2008	10 / 7202.0	0.14%	0 / 173.5	0.00%	2 / 6009.3	0.03%	12 / 13400	0.09%
2009	9 / 7357.6	0.12%	3 / 188.0	1.60%	8 / 6142.5	0.13%	20 / 13705	0.15%
2009	7 / 7630.5	0.09%	0 / 218.6	0.00%	5 / 6309.4	0.08%	12 / 14180	0.08%
2009	4 / 7795.0	0.05%	1 / 202.6	0.49%	6 / 6425.9	0.09%	11 / 14446	0.08%
2009	13 / 7888.5	0.16%	0 / 220.1	0.00%	5 / 6542.7	0.08%	19 / 14680	0.13%
2010	3 / 7959.3	0.04%	0 / 218.9	0.00%	11 / 6729.9	0.16%	14 / 14932	0.09%
2010	5 / 8141.7	0.06%	0 / 232.1	0.00%	4 / 6862.6	0.06%	9 / 15253	0.06%

STOP HIV/AIDS (GOAL 3): INDICATOR 29

TARGET	ACTUAL
Decrease	**VAN:** 3.81% **NI:** 0.00%

29. Proportion of individuals on antiretroviral therapy who change antiretroviral drug treatment.



Interpretation / Comment	The trend remains steady with consistent and low rates across all HADS.
Description of Measure	The percentage of all individuals on antiretroviral therapy who change their therapeutic regimen over the course of the time period of interest.
Significance	Changes in therapy regimen occur most commonly as a result of drug intolerance, adverse drug reactions or treatment failure. By counting the occurrence of regimen change and identifying the reasons for these changes a broader and more inclusive estimate of the safety of antiretroviral therapies can be made. Please see limitations of adverse drug event reporting under indicator 26.
Data Source(s)	British Columbia Centre for Excellence Drug Treatment Program Database.

Calculation Method	Numerator: Total number of regimen changes Where a regimen change is defined as a class change in the NNRTI or PI component of the therapy regimen. Denominator: Total number of individuals on antiretroviral therapy.
Limitations	The reason for change is often not well recorded and the indicator relies heavily on exclusion of treatment failure as the reason for therapy change.

29. Proportion of individuals on antiretroviral therapy who change antiretroviral drug treatment (data table)

Quarter	Vancouver HSDA		Northern Interior		Other HSDAs		All HSDAs	
2006	183 / 1969	9.29%	3 / 45	6.67%	138 / 1682	8.20%	324 / 3700	8.76%
2006	220 / 2005	10.97%	2 / 46	4.35%	183 / 1736	10.54%	406 / 3791	10.71%
2006	234 / 2032	11.52%	2 / 41	4.88%	180 / 1760	10.23%	416 / 3837	10.84%
2006	244 / 2075	11.76%	3 / 42	7.14%	209 / 1793	11.66%	458 / 3921	11.68%
2007	242 / 2123	11.40%	1 / 44	2.27%	165 / 1832	9.01%	408 / 4007	10.18%
2007	219 / 2219	9.87%	0 / 50	0.00%	168 / 1913	8.78%	388 / 4188	9.26%
2007	156 / 2288	6.82%	2 / 46	4.35%	120 / 1925	6.23%	279 / 4264	6.54%
2007	226 / 2343	9.65%	2 / 54	3.70%	165 / 1949	8.47%	393 / 4352	9.03%
2008	202 / 2383	8.48%	1 / 53	1.89%	163 / 1998	8.16%	366 / 4442	8.24%
2008	259 / 2457	10.54%	5 / 56	8.93%	193 / 2087	9.25%	458 / 4611	9.93%
2008	206 / 2515	8.19%	2 / 59	3.39%	134 / 2145	6.25%	342 / 4725	7.24%
2008	162 / 2586	6.26%	1 / 67	1.49%	153 / 2180	7.02%	316 / 4841	6.53%
2009	177 / 2656	6.66%	2 / 77	2.60%	144 / 2235	6.44%	323 / 4976	6.49%
2009	143 / 2716	5.27%	5 / 81	6.17%	114 / 2312	4.93%	263 / 5119	5.14%
2009	122 / 2785	4.38%	3 / 82	3.66%	98 / 2335	4.20%	223 / 5212	4.28%
2009	117 / 2827	4.14%	3 / 83	3.61%	100 / 2392	4.18%	220 / 5313	4.14%
2010	130 / 2874	4.52%	2 / 83	2.41%	96 / 2454	3.91%	228 / 5421	4.21%
2010	111 / 2916	3.81%	0 / 91	0.00%	94 / 2494	3.77%	205 / 5508	3.72%