STOP HIV/AIDS Quarterly Monitoring Report

Quarter 4, 2011
October 1, 2011 – December 31, 2011

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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
</tr>
<tr>
<td>ARVs</td>
<td>Antriretroviral Therapy (can also be abbreviated as ART)</td>
</tr>
<tr>
<td>BC</td>
<td>British Columbia</td>
</tr>
<tr>
<td>BC CfE</td>
<td>British Columbia Centre for Excellence</td>
</tr>
<tr>
<td>CD4</td>
<td>Cluster of Differentiation 4, is a marker to identify a type of human T helper cell</td>
</tr>
<tr>
<td>DTES</td>
<td>Downtown Eastside</td>
</tr>
<tr>
<td>FSA</td>
<td>Forward Sortation Area (corresponds to the first 3 digits of Postal Code)</td>
</tr>
<tr>
<td>H +/-</td>
<td>An increase or decrease in a particular indicator for current time period compared to the historical time period (2008-2009)</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
</tr>
<tr>
<td>HSDA</td>
<td>Health Service Delivery Area</td>
</tr>
<tr>
<td>LHA</td>
<td>Local Health Area</td>
</tr>
<tr>
<td>mL</td>
<td>Milliliter</td>
</tr>
<tr>
<td>POC</td>
<td>Point of Care HIV Test</td>
</tr>
<tr>
<td>PHSU</td>
<td>Public Health Surveillance Unit</td>
</tr>
<tr>
<td>Q +/-</td>
<td>An increase or decrease in a particular indicator for current time period compared to previous quarters</td>
</tr>
<tr>
<td>S +/-</td>
<td>An increase or decrease in a particular indicator for current time period compared to STOP period</td>
</tr>
<tr>
<td>STOP</td>
<td>HIV/AIDS Seek and Treat for Optimal Prevention of HIV/AIDS</td>
</tr>
<tr>
<td>VCH</td>
<td>Vancouver Coastal Health (Authority)</td>
</tr>
<tr>
<td>vL</td>
<td>Viral Load</td>
</tr>
</tbody>
</table>
Section 1. Population Monitoring Report Overview
SUMMARY
Population Level Monitoring Indicators
Quarter 4, 2011 (October 1 to December 31)

Introduction

The Seek and Treat for Optimal Prevention (STOP) HIV/AIDS Project is a 3 year pilot (Feb 2010 – Mar 2013) funded by the Ministry of Health Services to expand HIV testing, treatment and support with the goal of reducing HIV transmission in BC. Funding was provided to: Vancouver Coastal Health (VCH), Providence Health Care (PHC), Northern Health (NH), the Provincial Health Services Authority (PHSA), and BC Centre for Excellence in HIV/AIDS (BCCfE).

The Provincial project goals are to:

1. Reduce the number of new HIV/AIDS diagnoses in Vancouver (in the long term)
2. Reduce the impact of HIV/AIDS through effective screening and early detection
3. Ensure timely access to high quality and safe HIV/AIDS care and treatment
4. Improve the patient experience in every step of the HIV/AIDS journey
5. Demonstrate system and cost optimization.

Provincial level monitoring and evaluation is being conducted by BCCfE using provincial testing data from BC Centre for Disease Control (BCCDC) and provincial treatment data from the provincial drug treatment program at the BCCfE. Quarterly population level indicator reports are produced by the BCCDC and BCCfE for monitoring and evaluation purposes.

The STOP Vancouver HIV/AIDS Project Quarterly Monitoring Report and Quarterly Evaluation Report: Pilot Initiatives were developed to enable VCH and PHC (Vancouver STOP partners) to report on: 1. Overall changes in the project’s targeted activities and results areas at a population level within Vancouver HSDA, and 2. Outputs and outcomes of individual pilot projects funded by VCH and/or PHC. Although these are two separate reports, they will provide data to support informed decision making regarding:
- project implementation
- resource allocation
- post-project sustainability planning

Further, the reports will be used to inform internal and external stakeholder groups about the Vancouver STOP project’s impacts.

VCH Quarterly Monitoring Report Overview

The VCH STOP Evaluation Task Group approved a complete set of monitoring indicators in April 2011, to be monitored over the course of STOP until March-2013. In general these indicators report data from across the HIV patient journey, but more specifically they evaluate important components of the core testing, public health management and treatment objectives of the STOP HIV/AIDS pilot project. A rationale and definition of each indicator is provided in Appendix A.

The VCH Monitoring Report presents both a summary table and a series of associated figures, maps and tables. Unless otherwise indicated, the data within this report is for Vancouver HSDA.
**Summary Table**

The summary table reports on all* approved monitoring indicators, organized by testing, public health management and treatment phase of the patient journey. This table presents data from the current quarter for each indicator, and compares to data from previous quarters, the entire STOP HIV/AIDS pilot project period (July 1, 2010 to current), and to a historical baseline period (January 1, 2008 – December 31, 2009). Also reported in this table:

- Counts (or proportions) for the current year (2011) to date
- Counts (or proportions) for the previous year (2010) to the end of the same quarter in that year

Significant differences compared to previous quarters (Q+-/-), the STOP HIV/AIDS period (S+-/-), and historical baseline period (H+-/-) were noted in the far right column. Where possible, statistically significant differences (p<0.05) were determined; however for some indicators significant differences were determined to be values with an increase or decrease of 10%.

The indicator names of several indicators have been switched or changed for a more intuitive flow, and also because several new indicators have been added to the summary table.

New indicators - VCH13a, VCH 13c, VCH 14a, VCH 14c, VCH47b

Renamed indicators – VCH11b has been renamed 11d, VCH11c has been renamed 11b; 13a has been renamed 14b

*In some cases, where the counts for a particular indicator were very small, these indicators were dropped from the summary table. Those indicators dropped are noted in the subtext below the summary table.

**Additional Figures, Maps and Tables**

Graphs, maps and tables, were prepared to examine the data across different sociodemographic and clinical stratifications. Such graphs are not prepared for every indicator, but rather for a selection with important trends during the current quarter.

**Data Sources**

The data sources collected and compiled for this report, are described in Appendix B.

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**Cautions/Interpretations**

The data sources used for this report are of a dynamic nature, and subject to changes on a frequent basis. The results reported herein are current as of January 15, 2012.

A number of indicators are susceptible to the longitudinal dynamic nature of the data used for this report, and their values reported for the current time period are expected to change in the next reporting period. For this reason, significant differences should be interpreted with this in mind.

For this reason, always refer to the most recent report.

Through individual-level data linkage this report is able to describe select measures at the population-level for a specific dataset of linked individuals with nearly complete information. Extrapolation of these results to the entire population receiving treatment within VCH, should take this into consideration. For this reason, absolute numbers in particular should be interpreted with caution.
Updates from Previous Reports
The Monitoring Report was presented to the VCH STOP HIV/AIDS Core Team, and the results have been used to inform strategic decision making and resource allocation. The following outlines actions, decisions, or further analyses that have come from the contents of these reports.

Q3 2011
• Routine HIV testing has been initiated in all Vancouver LHAs, however South LHA was an important area given the low testing rates for residents of this area reported in Q3 2011.
• The public health management indicators which showed the effectiveness of partner notification by public health were used to demonstrate the important role of public health nurses in HIV testing, efforts that have not been previously measured. These results were valuable to further encourage referral of all new patients to public health.
• Additional analyses were conducted to understand the population of HIV positive individuals not found in care [VCH47], and those not fully suppressed [VCH54].
  o Descriptive analyses revealed that individuals not found in care were more likely to be between age 20-29, reside in City Centre LHA, of Hispanic or South Asian ethnicity.
  o HIV positive individuals who were not virally suppressed were more likely to reside in City Centre or DTES LHA, be of IDU exposure, between the ages of 20-29, female and of Aboriginal ethnicity.
Summary Table Results
Quarter 4 2011 (October 1 – December 31, 2011)

Testing Indicators

- The number of POC tests from sites engaged in STOP HIV/AIDS activities has decreased compared to Q3 2011, and compared to the quarterly average since the onset of STOP activities. However, Q3 2011 volumes are primarily attributed to a number of incentive-based testing blitzes in the Downtown Eastside of Vancouver. Blitzes were not conducted this quarter, yet POC testing volumes are still increasing compared to other quarters since STOP [VCH1]. The number of new HIV positive POC tests has decreased compared to previous quarters [VCH4a].
- HIV lab testing volumes from VCH residents, or those who tested in VCH, have increased more than 10% compared to previous quarters and average testing numbers over STOP. This increase is almost 30% higher than average volumes reported between 2008-2009, and there were 7,193 more HIV lab tests carried out in 2011 than 2010 [VCH8a].
- HIV lab test volumes from clinics in VCH and Vancouver HSDA clinics has increased compared to the average volumes since STOP and also in comparison to historical volumes [VCH8b, VCH8c], with test volumes in Vancouver HSDA clinics increasing by 6,634 tests in 2011 compared to 2010.
- HIV lab tests from VCH residents [VCH11a] also increased this quarter compared to previous quarters (up to 15%), the STOP period (19%) and historical baseline, 2008-2009 (38%). The number of HIV lab tests from residents of Vancouver HSDA increased this quarter compared to Q3 2011 by nearly 14% (1351 tests), and also increased compared to the average since STOP (20%) and compared to historical (39%) [VCH11b]. Similarly the number of HIV lab tests from residents of Richmond and Coastal Garibaldi HSDAs has also increased this quarter compared to all time periods [VCH11c].
- This quarter, the number of new HIV positive cases in VCH dropped by 30% compared to Q3 2011 numbers, and is slightly lower than the average quarterly count of new HIV positive cases since STOP HIV/AIDS and during the historical period [VCH13a]. Similarly, new HIV positives cases among Vancouver HSDA residents has dropped nearly 30% of Q3 2011 values, and at least 10% of that of historical diagnoses [VCH13b]
- Percent positivity of HIV has dropped by at least 10% for VCH residents [VCH14a] and Vancouver HSDA residents [VCH14b] compared to previous quarters. It has also dropped by 35% compared to historical baseline values, a change likely attributable to some part in the greater number of HIV tests conducted.
- The proportion of new HIV positives diagnosed early in the course of disease (>500 cells/mm³) is lower than previous quarters and lower than both the quarterly average since STOP HIV/AIDS, and over the historical period. However, this change should be interpreted with caution as these values are influenced by a lag in reporting time [VCH45a].
- Similarly, the proportion of new HIV positives diagnosed in late stage disease (<200 cells/mm³) is lower than previous quarters, the quarterly average since STOP and quarterly average observed at baseline. These values are also likely influenced by a lag in reporting time [VCH45b].

Public Health Management Indicators
These indicators were established to measure public health management activities augmented for STOP HIV/AIDS. Data are collected by public health practitioners using a contact tracing form developed for this purpose. As a result, baseline data prior to STOP HIV/AIDS are not of reliable quality.
- The number of contacts elicited this quarter was slightly lower than previous quarters, however there is an expected lag in data reporting. In particular, Q3 2011 was updated from 172 contacts to 217 this quarter and Q2 2011 was updated from 122 contacts reported last quarter to 178
contacts this quarter [VCH17]. The number of contacts elicited per positive case has not changed compared to previous quarters [VCH17a].

- The proportion of contacts notified remains steady at over 50% of all contacts elicited, however the proportion of contacts notified and tested for HIV has been dramatically increasing, with this quarter almost double that observed in Q3 2011 [VCH24, VCH23a].
- The number of new HIV positives found through HIV follow-up efforts was slightly lower this quarter compared to Q3 2011, however this indicator is also subject to lag in data reporting. The number of new positives found in Q3 2011 was updated from 1 new positive reported previously to 5 new positives this quarter [VCH23b]. This quarter, percent positivity due to contact tracing efforts was somewhat lower than previous quarters, however this indicator is also expected to change with data updates [VCH23c].

**Treatment Indicators**

- The proportion of new diagnoses linked to care within 30 days of treatment was nearly 20% lower this quarter compared to previous quarters, although these data are subject to lag times in complete data capture. In Q3 2011, 65% of new diagnoses were linked to care within 30 days, and this value was updated to 78% by Q4 2011 [VCH41].
- Time to linkage to HIV care was significantly lower this quarter compared to the STOP period and compared to the historical quarterly median days [VCH44b].
- The proportion of patients not found in care did not change significantly compared to previous quarters, since STOP or compared to historical baseline period. The same trend is also true when this measure is examined among individuals in the dataset who had sufficient identifying information to link them to care records available through BC CfE data [VCH47a, VCH47b].
- Compared to historical quarterly averages, the proportion of patients currently prescribed ARVs has significantly increased, it is 40% higher than the historical quarterly average and 24% higher than the average quarterly maximum [VCH48]. Conversely, the proportion of patients who have discontinued and not restarted ARVs has significantly decreased compared to previous quarters, the STOP time period, and compared to historical baseline. It should be noted, however, that current counts for this indicator are subject to time lag in reporting, although it is unlikely that over time this will affect the substantial differences between the current reporting period and baseline [VCH49].
- The proportion of individuals on ARVs who achieve viral suppression has decreased compared to the STOP quarterly average and compared to the historical quarterly average, however this change should be interpreted with caution given the evident effects of longitudinal data lag times on this indicator [VCH52].
- The mean community viral load of all known HIV positive individuals (as identified through public health HIV testing records), has significantly decreased compared to previous quarters (up to 16%), the quarterly average since STOP (22%) and historical baseline (74%). Notably, the year to date mean community viral load for 2011 is also substantially lower than that observed over 2010 [VCH53].
- Compared to quarterly average since STOP and over the historical period, the proportion of individuals with a viral load greater than 1000 copies/mL (not suppressed) has significantly decreased.
## Quarterly Summary Report
### Quarter 4 2011 (Oct 1 - Dec 31, 2011)

### Indicator Numbers and Names

<table>
<thead>
<tr>
<th>Indicator Number</th>
<th>Indicator Name</th>
<th>Counts by Quarter</th>
<th>STOP HIV/AIDS (July 1, 2010 to date)</th>
<th>2-year Historical Baseline (Jan 1, 2008 to Dec 31, 2009)</th>
<th>Year to Date Cases</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Current Quarter</td>
<td>Jul-Sep</td>
<td>Apr-Jun</td>
<td>Jan-Mar</td>
<td>Stop</td>
</tr>
<tr>
<td>VCH1</td>
<td>Number of POC tests</td>
<td>1635</td>
<td>5443</td>
<td>1234</td>
<td>949</td>
<td>2315</td>
</tr>
<tr>
<td>VCH1a</td>
<td>Number of new true positive POC tests</td>
<td>12</td>
<td>35</td>
<td>17</td>
<td>8</td>
<td>18</td>
</tr>
<tr>
<td>VCH1b</td>
<td>Number of previous positives identified by POC tests</td>
<td>0</td>
<td>19</td>
<td>8</td>
<td>1</td>
<td>7</td>
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<tr>
<td>VCH1c</td>
<td>Number of HIV lab tests (either from VCH residents or those tested in VCH)</td>
<td>23485</td>
<td>21341</td>
<td>19255</td>
<td>20684</td>
<td>20610</td>
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<tr>
<td>VCH1d</td>
<td>Number of HIV lab tests from all Vancouver HSDA clinics</td>
<td>22246</td>
<td>20480</td>
<td>18392</td>
<td>19703</td>
<td>19638</td>
</tr>
<tr>
<td>VCH1e</td>
<td>Number of HIV lab tests from residents of VCH (only those with known VCH residence)</td>
<td>18420</td>
<td>16888</td>
<td>14827</td>
<td>16052</td>
<td>16021</td>
</tr>
<tr>
<td>VCH1f</td>
<td>Number of HIV lab tests from residents of Vancouver HSDA</td>
<td>15357</td>
<td>13349</td>
<td>11994</td>
<td>12698</td>
<td>12867</td>
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<tr>
<td>VCH1g</td>
<td>Number of HIV lab tests from residents of Richmond and Coastal HSDA</td>
<td>11074</td>
<td>9723</td>
<td>8499</td>
<td>9101</td>
<td>9217</td>
</tr>
<tr>
<td>VCH1h</td>
<td>Number of HIV lab tests from residents of Richmond and Coastal HSDA</td>
<td>4283</td>
<td>3626</td>
<td>3495</td>
<td>3597</td>
<td>3650</td>
</tr>
<tr>
<td>VCH1i</td>
<td>Number of positive HIV diagnoses for VCH residents</td>
<td>7813</td>
<td>7799</td>
<td>7090</td>
<td>7826</td>
<td>7552</td>
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<tr>
<td>VCH1j</td>
<td>Number of positive HIV diagnoses for VCH residents</td>
<td>40</td>
<td>58</td>
<td>49</td>
<td>31</td>
<td>43</td>
</tr>
<tr>
<td>VCH1k</td>
<td>Number of positive HIV diagnoses for Vancouver HSDA Residents</td>
<td>36</td>
<td>51</td>
<td>46</td>
<td>29</td>
<td>39</td>
</tr>
<tr>
<td>VCH1l</td>
<td>Number of positive HIV diagnoses for Richmond and Coastal/Garboal HSDA residents</td>
<td>4</td>
<td>7</td>
<td>3</td>
<td>2</td>
<td>4</td>
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<tr>
<td>VCH1m</td>
<td>Percent positivity (%) of VCH residents</td>
<td>0.26</td>
<td>0.43</td>
<td>0.41</td>
<td>0.24</td>
<td>0.34</td>
</tr>
<tr>
<td>VCH1n</td>
<td>Percent positivity (%) of Vancouver HSDA residents</td>
<td>0.33</td>
<td>0.52</td>
<td>0.54</td>
<td>0.32</td>
<td>0.42</td>
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<tr>
<td>VCH1o</td>
<td>Percent positivity (%) of Richmond &amp; Coastal/Garboal HSDA residents</td>
<td>0.09</td>
<td>0.19</td>
<td>0.09</td>
<td>0.06</td>
<td>0.11</td>
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<tr>
<td>VCH1p</td>
<td>Proportion of HIV patients that have CD4 count &gt; 500 cells/mm3 at diagnosis (%)</td>
<td>24</td>
<td>35</td>
<td>33</td>
<td>28</td>
<td>32</td>
</tr>
<tr>
<td>VCH1q</td>
<td>Proportion of HIV patients that have CD4 count &lt; 200 cells/mm3 at diagnosis (%)</td>
<td>8</td>
<td>10</td>
<td>17</td>
<td>24</td>
<td>17</td>
</tr>
</tbody>
</table>

### Notes
- *This includes positives who have a known Vancouver HSDA address and those who test in Vancouver HSDA but do not have an address available.
- Data used for this report is longitudinal and of a dynamic nature, with many indicators being subject to a lag in time to reporting.
- Therefore indicator values are likely to change with continual data updating.

### Interpretation
- Q +/- represents an increase or decrease for current time period compared to previous quarters
- S +/- represents an increase or decrease for current time period compared to STOP Period (July 1, 2010 to current)
- H +/- represents an increase or decrease for current time period compared to historical time period (2008-2009)

### STOP HIV/AIDS quarterly average
- STOP HIV/AIDS quarterly average is the average of all quarters since Q3 2010 (start date of July 1, 2010), with the quarterly minimum is the minimum count or proportion for all quarters since STOP, and the quarterly maximum is the maximum count or proportion for all quarters since STOP. This also applies to historical baseline quarterly average, min and max determinations for all quarters during the baseline two year period between 2008-2009.

### Indicators Omitted
- VCH4c. Number of false positive POC tests
- VCH16. Number of HIV positive diagnoses who were previously positive
STOP HIV/AIDS Monitoring Indicators
Quarterly Summary Report
Quarter 4 2011 (Oct 1 - Dec 31, 2011)

<table>
<thead>
<tr>
<th>Indicator Number</th>
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<th>STOP HIV/AIDS (July 1, 2010 to date)</th>
<th>2-year Historical Baseline (Jan 1, 2008 to Dec 31, 2009)</th>
<th>Year to Date Cases</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Current Quarter</td>
<td>Jul-Sep 2011</td>
<td>Apr-Jun 2011</td>
<td>Jan-Mar 2011</td>
<td>Avg</td>
</tr>
<tr>
<td>VCH17</td>
<td>Number of contacts elicited</td>
<td>203</td>
<td>217 (172)</td>
<td>178 (159)</td>
<td>144 (122)</td>
<td>128</td>
</tr>
<tr>
<td>VCH17a</td>
<td>Average number of contacts elicited per positive case</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>VCH19</td>
<td>Proportion of contacts notified (%)</td>
<td>56</td>
<td>58</td>
<td>37 (33)</td>
<td>38</td>
<td>49</td>
</tr>
<tr>
<td>VCH24</td>
<td>Proportion of contacts who were previously HIV positive (%)</td>
<td>18</td>
<td>13</td>
<td>18</td>
<td>20 (23)</td>
<td>17</td>
</tr>
<tr>
<td>VCH23a</td>
<td>Proportion of notified contacts tested for HIV (%)</td>
<td>61</td>
<td>24 (16)</td>
<td>38 (34)</td>
<td>27 (19)</td>
<td>38</td>
</tr>
<tr>
<td>VCH23b</td>
<td>Number of contacts who tested HIV positive</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>VCH23c</td>
<td>Percent positivity (%) due to Contact Tracing</td>
<td>3</td>
<td>17</td>
<td>8</td>
<td>13</td>
<td>8</td>
</tr>
</tbody>
</table>

Notes
Data used for this report is longitudinal and of a dynamic nature, with many indicators being subject to a lag in time to reporting. Therefore indicator values are likely to change with continual data updating. In cases where the values reported previously have changed by more than 10%, the values from the previous report are found in brackets below the most recent update.

Interpretation
Q +/- represents an increase or decrease for current time period compared to previous quarters
S +/- represents an increase or decrease for current time period compared to STOP Period (July 1, 2010 to current)
H +/- represents an increase or decrease for current time period compared to historical time period (2008-2009)

STOP HIV/AIDS quarterly average is the average of all quarters since Q3 2010 (start date of July 1, 2010), with the quarterly minimum is the minimum count or proportion for all quarters since STOP, and the quarterly maximum is the maximum count or proportion for all quarters since STOP. This also applies to historical baseline quarterly average, min and max determinations for all quarters during the baseline two year period between 2008-2009.

Indicators Omitted
VCH26 - VCH39: Social Networking Public Health Management Indicators
### Treatment Indicators

<table>
<thead>
<tr>
<th>Indicator Number</th>
<th>Indicator Name</th>
<th>Current Quarter</th>
<th>Jul-Sep 2011</th>
<th>Aug-Jun 2011</th>
<th>Jan-Mar 2011</th>
<th>STOP HIV/AIDS (July 1, 2010 to date)</th>
<th>2-year Historical Baseline (Jan 1, 2008 to Dec 31, 2009)</th>
<th>Year to Date Cases</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCH41</td>
<td>Proportion of new diagnoses linked to care within 30 days of diagnosis (%)</td>
<td>61</td>
<td>78 (65)</td>
<td>65</td>
<td>69</td>
<td>68</td>
<td>61</td>
<td>78</td>
<td>64</td>
</tr>
<tr>
<td>VCH44a</td>
<td>Time to linkage to HIV care among those newly diagnosed with HIV (median days) who were linked within 30 days</td>
<td>8</td>
<td>9</td>
<td>13</td>
<td>9 (8)</td>
<td>9</td>
<td>8</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>VCH44b</td>
<td>Time to linkage to HIV care among those newly diagnosed with HIV (median days)</td>
<td>9</td>
<td>9</td>
<td>13</td>
<td>9 (8)</td>
<td>11</td>
<td>9</td>
<td>16</td>
<td>15</td>
</tr>
<tr>
<td>VCH46</td>
<td>Proportion of HIV patients that are actively engaged in care (%)</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>75</td>
<td>74</td>
<td>76</td>
<td>75</td>
</tr>
<tr>
<td>VCH47a</td>
<td>Proportion of all HIV patients not found in care (%)</td>
<td>27</td>
<td>26</td>
<td>26</td>
<td>25</td>
<td>26</td>
<td>25</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td>VCH47b†</td>
<td>Proportion of matched HIV patients not found in care (%)</td>
<td>17</td>
<td>16</td>
<td>15</td>
<td>15</td>
<td>16</td>
<td>15</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>VCH48</td>
<td>Proportion of patients who are currently prescribed ARVs (%)</td>
<td>62</td>
<td>61</td>
<td>60</td>
<td>59</td>
<td>59</td>
<td>55</td>
<td>62</td>
<td>44</td>
</tr>
<tr>
<td>VCH49</td>
<td>Proportion of patients who have discontinued and not restarted ARVs (%)</td>
<td>8</td>
<td>11.7</td>
<td>(7.7)</td>
<td>13.7</td>
<td>(10.9)</td>
<td>16</td>
<td>(14)</td>
<td>15</td>
</tr>
<tr>
<td>VCH51</td>
<td>Proportion of individuals newly taking ARVs who achieve viral suppression within 9 months (%)</td>
<td>93</td>
<td>95</td>
<td>(82)</td>
<td>96</td>
<td>95</td>
<td>93</td>
<td>96</td>
<td>93</td>
</tr>
<tr>
<td>VCH52</td>
<td>Proportion of all individuals on ARVs who have achieved viral suppression (%)</td>
<td>79</td>
<td>83</td>
<td>(79)</td>
<td>91 (82)</td>
<td>90</td>
<td>89</td>
<td>94</td>
<td>90</td>
</tr>
<tr>
<td>VCH53</td>
<td>Mean viral load (copies/ml) of all known HIV positive individuals</td>
<td>109</td>
<td>131</td>
<td>122</td>
<td>130</td>
<td>139</td>
<td>109</td>
<td>185</td>
<td>416</td>
</tr>
<tr>
<td>VCH54</td>
<td>Proportion of all individuals with viral load greater than 1000 copy per ml (%)</td>
<td>17</td>
<td>20</td>
<td>18</td>
<td>20</td>
<td>21</td>
<td>17</td>
<td>27</td>
<td>38</td>
</tr>
</tbody>
</table>

#### Notes

The analyses for most treatment indicators are based on n=1694 individuals in a linked dataset of PHSU HIV Surveillance data and BC CTE Drug Treatment Program data.

For those indicators that measure linkage to care or engaged in care, the full PHSU HIV Surveillance dataset was used as a denominator, as it is the best representation of all known HIV positive individuals in Vancouver PHSDA.

This indicator only examines linkage to care among individuals linked from public health surveillance data to the BC CTE clinical monitoring and drug treatment program database, as some individuals who tested non-nominally or with very little identifying information may be linked to care but are not able to be linked to their medical records.

Data used for this report is longitudinal and of a dynamic nature, with many indicators being subject to a lag in time to reporting. Therefore indicator values are likely to change with continual data updating. In cases where the values reported previously have changed by more than 10%, the values from the previous report are found in brackets below the most recent update.

#### Interpretation

Q +/-: represents an increase or decrease for current time period compared to previous quarters
S +/-: represents an increase or decrease for current time period compared to STOP Period (July 1, 2010 to current)

STOP HIV/AIDS quarterly average is the average of all quarters since Q3 2010 (start date of July 1, 2010), with the quarterly minimum is the minimum count or proportion for all quarters since STOP, and the quarterly maximum is the maximum count or proportion for all quarters since STOP. This also applies to historical baseline quarterly average, min and max determinations for all quarters during the baseline two year period between 2008-2009.

#### Indicators Omitted

VCH50a, VCH50b - Proportion of new diagnoses eligible for tx and taking ARVs
Section 2. Testing Indicators

Figures, Maps and Tables
Summary of Results – Testing Indicators

Figure 1. Number of HIV POC Tests and Percent Positivity of HIV POC Tests [VCH1, VCH4c]
This figure shows that the number of HIV POC tests reported through STOP HIV/AIDS pilot sites has been increasing since the beginning of year 2011. The number of POC tests have dropped in Q4 2011 compared to Q3, however percent positivity has not drastically changed suggesting testing efforts continue to find new positives at relatively the same rate.

Table 1. Mean Monthly Rate of HIV Lab Tests for Vancouver HSDA residents per 10,000 population [VCH8c]
Increases in HIV lab tests were seen in clinics from all Vancouver LHAs. In particular, the number of HIV lab tests from clinics in City Centre and DTES LHA has increased by more than 10% compared to the quarterly average since STOP and compared to historical baseline. The number of HIV lab tests from clinics in Northeast and South LHA has increased by more than 10% compared to all time periods.

Maps 1,2. Mean Monthly Rate of HIV Lab Tests for Vancouver HSDA residents per 10,000 population [VCH11c]
HIV testing rates over the period of STOP HIV/AIDS to date have noticeably increased for residents of City Centre and DTES LHAs (Map 1) compared to historical testing rates (Map 2). It appears that testing rates from residents of Midtown and Northeast LHAs have decreased compared to Q3 2011, however more residents from Midtown are being tested compared to the historical period.

Figure 2. Number of HIV Lab Tests and Percent Positivity from Residents of VCH [VCH11a, 14a]
The number of HIV lab tests from residents of VCH has been steadily increasing since the historical period, however we see a large spike in lab tests for Q4 2011, compared to previous time periods, which corresponds to a drop in percent positivity.

Figure 3. Number of HIV Lab Tests and Percent Positivity from Residents of Vancouver HSDA [VCH11b, 14b]
There continues to be a small increasing trend in HIV lab test volumes over the STOP HIV/AIDS period compared to the historical time period (2008-2009), with Q4 2011 showing a noticeable jump in testing numbers among Vancouver HSDA residents. In recent quarters (Q2, Q3 of 2011), percent positivity of HIV has dramatically increased among Vancouver HSDA residents. However, the most recent quarter (Q4, 2011) experienced a drop in percent positivity.

Figure 4. Proportion of New HIV Positives by Sex and the Ratio of Males to Females by Year of Diagnosis [VCH13]
In 2011, proportionally more males were diagnosed HIV positive compared to previous years, with males making up just over 90% of all diagnoses. Conversely, fewer females were diagnosed HIV positive in 2011 compared to previous years. This trend is clearly observed when the ratio of male to female diagnoses is examined, with nearly 11 males diagnosed for every female in 2011, a ratio much higher than 6 males to 1 female in 2010.
Table 2, 3. Percent Positivity and Number of New HIV Lab Tests among Male and Female Residents of Vancouver HSDA by Age Group [VCH11b, 13b, 14b]
Compared to previous quarters, percent positivity decreased among almost all age groups for males this quarter (Table 2), in particular those age 30-39 show a dramatic decrease. However males age 20-29 showed a noticeable increase compared to Q3 2011. Males between 20-29 and 40-49 continue have the highest percent positivity compared to other age groups. Although the number of new positive HIV males is slightly higher at the end of 2011 than 2010, the number of HIV lab tests is also higher thereby percent positivity remains constant.
Testing volumes among females continue to be higher than males (Tables 2,3), however this is likely attributable to the routine screening for HIV among pregnant women in BC. Percent positivity among females also continues to be low.

Table 4. Monthly Average Number, Rate (per 10,000), Positives and Percent Positivity (%) among Vancouver HSDA Residents by LHA [VCH11b, 13b, 14b]
Monthly average HIV lab tests have increased in City Centre since Q3 2011 (Table 4) and in comparison to baseline numbers. Average monthly numbers slightly decreased in DTES, Northeast and South LHAs compared to Q3 2011. Higher monthly testing volumes are observed across all LHAs over the course of STOP HIV/AIDS compared to historical. The rates per 10,000 population in Vancouver LHAs are not substantially different compared to the historical period. In addition, the monthly average number of HIV positives and percent positivity (by LHA of residence) has also not changed over the course of STOP HIV/AIDS compared to the historical.

Table 5, 6. Number and Proportion of HIV positives among Males and Female Residents of Vancouver HSDA (and those who tested in Vancouver but have no residence information) by Exposure and Year of Diagnosis [VCH13b]
Proportionally more new diagnoses were seen among males of MSM, IDU and Heterosexual exposure in 2010 and 2011 compared to previous years (Table 7). However, the proportion of new male diagnoses with unknown exposure noticeably increased in recent years.
The proportion of females with heterosexual exposure increased substantially in 2010 and 2011 compared to previous years (Table 8).

Figure 5a,b. Proportion and Number of Patients by CD4 Cell Count at Diagnosis [VCH45]
The proportion and number of HIV patients diagnosed with late stage disease (CD4 cell count <200 cells/mm³) has been slightly decreasing over the STOP HIV/AIDS period compared to previous years (Figures 5a, b). In contrast, the proportion and number of new diagnoses diagnosed earlier in the course of disease has been increasing in recent years compared to historically.

Figure 6. Proportion and Trend of Patients by Disease Stage and Year of Diagnosis [VCH45]
The proportion of patients diagnosed with late stage disease (<200 cells/mm3) shows a decreasing trend since 2003, while the proportion of patients diagnosed early in the course of disease with healthy CD4 counts (>500 cells/mm3) has been increasing.

Maps 3,4. Mean CD4 Cell Count (cells/mm³) at diagnosis for all HIV positive individuals [VCH45]
Compared to Q3 2011, the mean CD4 cell count at diagnosis for residents of the City Centre and DTES LHAs has decreased, indicating people were diagnosed with later stage disease in the current quarter (Map 3). However, the mean CD4 cell count at diagnosis for residents of
Westside has increased compared to Q3 2011. Compared to the historical period, CD4 cell counts at diagnosis have increased in Westside LHA and decreased in South LHA (Map 4).
Figure 1
Number of HIV POC Tests [VCH1]
Percent Positivity of HIV POC Tests [VCH4c]

POC test counts include only volumes reported from sites engaged in STOP HIV/AIDS activities.
POC positive test counts include only positive tests reported to VCH CDC Department HIV Nurse.
Source: HIV Point of Care (POC) Data.
### Table 1. Number of HIV Lab Tests by LHA of Testing Clinic [VCH8c]

<table>
<thead>
<tr>
<th>Vancouver LHA</th>
<th>Counts by Quarter</th>
<th>STOP HIV/AIDS</th>
<th>2-year Historical Baseline</th>
<th>Year to Date Cases</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current Quarter</td>
<td>Jul-Sep 2011</td>
<td>Apr-Jun 2011</td>
<td>Jan-Mar 2011</td>
<td>Avg</td>
</tr>
<tr>
<td>LHA 1 City Centre</td>
<td>1090</td>
<td>9295</td>
<td>8139</td>
<td>8763</td>
<td>8820</td>
</tr>
<tr>
<td>LHA 2 DTES</td>
<td>1880</td>
<td>1803</td>
<td>1498</td>
<td>1685</td>
<td>1638</td>
</tr>
<tr>
<td>LHA 3 North East</td>
<td>1313</td>
<td>1158</td>
<td>1027</td>
<td>1028</td>
<td>1086</td>
</tr>
<tr>
<td>LHA 4 Westside</td>
<td>1930</td>
<td>1893</td>
<td>1603</td>
<td>1835</td>
<td>1754</td>
</tr>
<tr>
<td>LHA 5 Midtown</td>
<td>1490</td>
<td>1433</td>
<td>1412</td>
<td>1516</td>
<td>1414</td>
</tr>
<tr>
<td>LHA 6 South</td>
<td>1169</td>
<td>1030</td>
<td>899</td>
<td>1006</td>
<td>1018</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17956</strong></td>
<td><strong>16612</strong></td>
<td><strong>14578</strong></td>
<td><strong>15833</strong></td>
<td><strong>15743</strong></td>
</tr>
</tbody>
</table>

*Total may not equal sum of LHA due to missing value.

Source: Provincial Public Health Microbiology and Reference Laboratory (Misys Laboratory Database) & Providence Health Care Virology Laboratory.

Map 1. Mean monthly rate of HIV lab tests for Vancouver residents per 10,000 population [VCH11c]
Vancouver local health areas, since STOP HIV/AIDS July 1, 2010 to current

HIV lab tests per 10,000 population

- < 35.9 tests/10,000 population
- 36.0 - 39.9 tests/10,000 population
- 40.0 - 55.9 tests/10,000 population
- > 56.0 tests/10,000 population
- Rest of VCH
- Rest of British Columbia

Data source: Provincial Public Health Microbiology and Reference Laboratory (Misys Laboratory Database) & Providence Health Care Virology Laboratory.

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Figure 2
Number of HIV Lab Tests from Known Residents of VCH [VCH11a]
Percent positivity of HIV Lab Tests from Known Residents of VCH [VCH14a]

Source: Public Health Surveillance Unit (HIV Surveillance Data); Provincial Public Health Microbiology and Reference Laboratory (Misys Laboratory Database) & Providence Health Care Virology Laboratory Database.
Figure 3
Number of HIV Lab Tests from Known Residents of Vancouver HSDA [VCH11b]
Percent positivity of HIV Lab Tests from Known Residents of Vancouver HSDA [VCH14b]

Source: Public Health Surveillance Unit (HIV Surveillance Data); Provincial Public Health Microbiology and Reference Laboratory (Misys Laboratory Database) & Providence Health Care Virology Laboratory Database.
Figure 4
Proportion of New HIV Positives by Sex and Ratio of Males to Females by Year of Diagnosis [VCH13]

Source: Public Health Surveillance Unit (HIV Surveillance Data).
### Table 2. Percent Positivity Among Male Residents of known Vancouver HSDA by Age Group [VCH11b, 13b, 14b]

<table>
<thead>
<tr>
<th>Age</th>
<th>% Positivity Current Quarter</th>
<th>% Positivity Previous Quarters</th>
<th>% Positivity STOP HIV/AIDS</th>
<th>% Positivity Historical Baseline</th>
<th>% Positivity Year to Date 2011</th>
<th>% Positivity Year to Date 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10-19</td>
<td>0</td>
<td>0</td>
<td>0.26</td>
<td>0</td>
<td>0</td>
<td>0.43</td>
</tr>
<tr>
<td>20-29</td>
<td>0.74</td>
<td>0.28</td>
<td>0.38</td>
<td>0.53</td>
<td>0.42</td>
<td>0.39</td>
</tr>
<tr>
<td>30-39</td>
<td>0.16</td>
<td>1.3</td>
<td>0.79</td>
<td>0.73</td>
<td>0.82</td>
<td>0.73</td>
</tr>
<tr>
<td>40-49</td>
<td>0.61</td>
<td>0.68</td>
<td>0.75</td>
<td>1.25</td>
<td>0.72</td>
<td>0.85</td>
</tr>
<tr>
<td>50-59</td>
<td>0.29</td>
<td>0.81</td>
<td>0.71</td>
<td>0.69</td>
<td>0.63</td>
<td>0.57</td>
</tr>
<tr>
<td>60+</td>
<td>0.38</td>
<td>0.44</td>
<td>0.4</td>
<td>0.25</td>
<td>0.36</td>
<td>0.33</td>
</tr>
<tr>
<td>Total*</td>
<td>0.43</td>
<td>0.73</td>
<td>0.62</td>
<td>0.74</td>
<td>0.6</td>
<td>0.6</td>
</tr>
</tbody>
</table>

*Total may not equal sum of all age groups due to missing data on patient age.

Source: Public Health Surveillance Unit (HIV Surveillance Data), Provincial Public Health Microbiology and Reference Laboratory (Misys Laboratory Database) & Providence Health Care Virology Laboratory.


### Table 3. Percent Positivity Among Female Residents of Vancouver HSDA by Age Group [VCH11b, 13b, 14b]

<table>
<thead>
<tr>
<th>Age</th>
<th>% Positivity Current Quarter</th>
<th>% Positivity Previous Quarters</th>
<th>% Positivity STOP HIV/AIDS</th>
<th>% Positivity Historical Baseline</th>
<th>% Positivity Year to Date 2011</th>
<th>% Positivity Year to Date 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10-19</td>
<td>0</td>
<td>0</td>
<td>0.27</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>20-29</td>
<td>0.05</td>
<td>0</td>
<td>0.05</td>
<td>0.04</td>
<td>0.04</td>
<td>0.07</td>
</tr>
<tr>
<td>30-39</td>
<td>0.04</td>
<td>0.04</td>
<td>0.04</td>
<td>0.06</td>
<td>0.03</td>
<td>0.05</td>
</tr>
<tr>
<td>40-49</td>
<td>0</td>
<td>0</td>
<td>0.07</td>
<td>0.08</td>
<td>0.07</td>
<td>0.15</td>
</tr>
<tr>
<td>50-59</td>
<td>0</td>
<td>0.41</td>
<td>0.24</td>
<td>0.08</td>
<td>0.08</td>
<td>0.12</td>
</tr>
<tr>
<td>60+</td>
<td>0</td>
<td>0.78</td>
<td>0.18</td>
<td>0</td>
<td>0.23</td>
<td>0</td>
</tr>
<tr>
<td>Total*</td>
<td>0.03</td>
<td>0.02</td>
<td>0.05</td>
<td>0.07</td>
<td>0.05</td>
<td>0.07</td>
</tr>
</tbody>
</table>

*Total may not equal sum of all age groups due to missing data on patient age.

Source: Public Health Surveillance Unit (HIV Surveillance Data), Provincial Public Health Microbiology and Reference Laboratory (Misys Laboratory Database) & Providence Health Care Virology Laboratory.

Table 4. The Monthly Average Number, Rate (per 10,000), Positives and Percent Positivity (%) among Vancouver HSDA Residents by LHA [VCH11b, 13b, 14b]

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LHA 1 City Centre</td>
<td>718</td>
<td>634</td>
<td>60</td>
<td>54</td>
<td>5</td>
<td>5</td>
<td>0.6</td>
</tr>
<tr>
<td>LHA 2 DTES</td>
<td>416</td>
<td>326</td>
<td>60</td>
<td>52</td>
<td>2</td>
<td>2</td>
<td>0.4</td>
</tr>
<tr>
<td>LHA 3 North East</td>
<td>350</td>
<td>309</td>
<td>33</td>
<td>30</td>
<td>1</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>LHA 4 Westside</td>
<td>483</td>
<td>416</td>
<td>35</td>
<td>31</td>
<td>1</td>
<td>0</td>
<td>0.2</td>
</tr>
<tr>
<td>LHA 5 Midtown</td>
<td>393</td>
<td>334</td>
<td>43</td>
<td>38</td>
<td>1</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>LHA 6 South</td>
<td>404</td>
<td>340</td>
<td>30</td>
<td>26</td>
<td>1</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2765</strong></td>
<td><strong>2359</strong></td>
<td><strong>42</strong></td>
<td><strong>37</strong></td>
<td><strong>10</strong></td>
<td><strong>9</strong></td>
<td><strong>0.3</strong></td>
</tr>
</tbody>
</table>

Table 5. Proportion of Male HIV Positive Diagnoses among Residents of Vancouver HSDA (and those who tested in Vancouver but have no residence information) by Exposure and Year of Diagnosis [VCH13b]

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Year of Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSM</td>
<td>62.6</td>
</tr>
<tr>
<td>MSM/IDU</td>
<td>5.6</td>
</tr>
<tr>
<td>IDU</td>
<td>17.3</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>12.7</td>
</tr>
<tr>
<td>Other*</td>
<td>1.6</td>
</tr>
<tr>
<td>Unknown</td>
<td>0.2</td>
</tr>
</tbody>
</table>

*Other = blood/blood products, occupational, perinatal and other exposures

Table 6. Proportion of Female HIV Positive Diagnoses among Residents of Vancouver HSDA (and those who tested in Vancouver but have no residence information) by Exposure and Year of Diagnosis [VCH13b]

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Year of Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDU</td>
<td>61.6</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>34.9</td>
</tr>
<tr>
<td>Other</td>
<td>3.5</td>
</tr>
<tr>
<td>Unknown</td>
<td>0</td>
</tr>
</tbody>
</table>

*Other = blood/blood products, occupational, perinatal and other exposures

Source: Public Health Surveillance Unit (HIV Surveillance Data).
Figure 5a
Proportion of Patients by CD4 Cell Count at Diagnosis and Year of Diagnosis [VCH45]

Source: Public Health Surveillance Unit (HIV Surveillance Data) & BC CFE Drug Treatment Program Data.
Figure 5b
Number of Patients by CD4 Cell Count at Diagnosis and Year of Diagnosis [VCH45]

Source: Public Health Surveillance Unit (HIV Surveillance Data) & BC CFE Drug Treatment Program Data.
Figure 6
Proportion of Patients by CD4 Cell Count at Diagnosis and Year of Diagnosis [VCH45]

CD4 Cell Count (cells/mm³)
- <200
- 500+
- Linear Trend (<200)
- Linear Trend (500+)

Source: Public Health Surveillance Unit (HIV Surveillance Data) & BC CeF Drug Treatment Program Data.
Map 4. Mean CD4 cell count (cells/mm³) at diagnosis for all HIV positive individuals [VCH45].
Vancouver local health areas, 2008 - 2009

Prepared by:
Vancouver Coastal Health, Public Health Surveillance Unit, March 2012.
Data source: Vancouver Coastal Health, Public Health Surveillance Unit (HIV Surveillance Data) & BC CIE Drug Treatment Program Data.
Section 3. Public Health Management Indicators

Figures, Maps and Tables
Summary of Results – Public Health Management Indicators

Figure 7. Total Number of Contacts Elicited, Number per HIV Case and Notified [VCH17, 17a, 19]
Total number of contacts elicited has been increasing over the course of STOP HIV/AIDS, however the current quarters numbers are slightly lower than previous Q3 2011. The proportion of contacts notified from public health follow-up was also slightly lower than previous Q3 2011, however the number of contacts elicited per HIV case rose slightly.

Figure 8. Number of contacts notified and tested for HIV and Percent Positivity due to Contact Tracing [VCH23a, 23c]
The total number of contacts that were tested for HIV as a result of public health follow up decreased slightly (12% decrease) in Q4 2011 compared to Q3 2011. However the number of contacts notified but not tested decreased in Q4 2011 compared to both Q3, and Q2 2011. Percent positivity due to contact tracing decreased slightly compared to previous quarters, however this data is subject to lag time in reporting.
Figure 7
Total Number of Contacts Elicited [VCH17]
Number of Contacts Elicited per Case [VCH17a]
Number of Contacts Notified [VCH19]

* Reliable data not available pre-STOP HIV/AIDS

Source: Enhanced HIV Contact Tracing Form
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. March 14, 2012
Figure 8
Number of contacts notified and tested for HIV [VCH23a]
Percent Positivity due to Contact Tracing [VCH23c]

Source: Enhanced HIV Contact Tracing Form
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. March 14, 2012
Section 4. Treatment Indicators

Figures, Maps and Tables
Summary of Results – Treatment Indicators

Table 7,8. Number and Proportion of Male and Female Patients Linked to Care within 30 days by Exposure and Year of Diagnosis [VCH41]
The proportion of males of MSM, MSM/IDU and IDU exposures linked to care within 30 days of diagnosis has decreased in 2010 and 2011 compared to previous years. There has been no change in the proportion of males of heterosexual exposure linked to care by year (Table 11). Females of IDU exposure linked to care within 30 days decreased in 2010 and 2011 compared to previous years, while females with heterosexual risk linked to care have increased (Table 12).

Table 9,10. Number and Proportion of Male and Female Patients Engaged in Care by Exposure and Year of Diagnosis [VCH46]
There is little variation in the proportion of males within all risk groups who are engaged in care by each year of diagnosis (Table 15). In 2011, slightly more MSM/IDU, IDU, and heterosexual males were engaged in care compared to 2008-2009. Proportionally more females of IDU were engaged in care in 2011 compared to 2008 and 2009 (Table 16).

Table 11,12. Number and Proportion of Male and Female Patients Prescribed ARVs by Exposure and Year of Diagnosis [VCH48]
Compared to 2008 and 2009, the proportion of males of all exposure groups who were prescribed ARVs had increased in 2011. Among these exposure groups, males of MSM/IDU and heterosexual exposures had the greatest proportion of individuals prescribed ARVs in 2011 (Table 19). As well for females, the proportion of all exposure groups who were prescribed ARVs had increased in 2011 compared to 2008 and 2009 (Table 20).

Figure 9. Mean Community Viral Load (copies/mL) and Proportion of HIV positive Individuals not Fully Suppressed or Monitored [VCH53]
From 2008 to current the mean community viral load (copies/mL) has been steadily on the decline. This trend is similarly observed in the proportion of those with unsuppressed viral loads. While the mean community viral load appears to be below detectable levels (<200 copies/mL) since the initiation of STOP HIV/AIDS, the proportion of individuals not fully suppressed or monitored remains around 30% of all HIV positives in Vancouver HSDA.

Table 13. Mean Community Viral Load and Proportion of HIV Positive Individuals Not Fully Suppressed by those on ARVs and Not on ARVs [VCH53, 54]
Similar to Figure 5, this table shows a steady decline in mean community viral load (copies/mL) since 2008. This corresponds with a steady increase in the proportion of HIV positive individuals with a prescription for antiretroviral therapy, and a decrease in the proportion not on ARVs. The inverse relationship was observed for indicator VCH54. A higher proportion of HIV positive individuals in the population without a suppressed viral load.

Maps 5,6. Mean community viral load (copies/mL) for all HIV positive individuals by Vancouver FSAs [VCH53]
Many FSAs across Vancouver have seen an increase in mean viral load levels in Q4 2011, compared to Q3 2011 (Map 5), and compared to historical (Map 6) however the absolute
numbers for these mean values were less than 10 observations and these results should be interpreted with this in mind.
Table 7. Proportion of **Male** Patients Linked to Care within 30 days of Diagnosis by Exposure and Year of Diagnosis [VCH41]

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Year of Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSM</td>
<td>64.6</td>
</tr>
<tr>
<td>MSM/IDU</td>
<td>6.3</td>
</tr>
<tr>
<td>IDU</td>
<td>13.3</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>14</td>
</tr>
<tr>
<td>Other*</td>
<td>1.8</td>
</tr>
<tr>
<td>Unknown</td>
<td>0</td>
</tr>
</tbody>
</table>

*Other = blood/blood products, occupational, perinatal and other exposures

Table 8. Proportion of **Female** Patients Linked to Care within 30 days of Diagnosis by Exposure and Year of Diagnosis [VCH41]

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Year of Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDU</td>
<td>47.1</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>47.1</td>
</tr>
<tr>
<td>Other*</td>
<td>5.9</td>
</tr>
<tr>
<td>Unknown</td>
<td>0</td>
</tr>
</tbody>
</table>

*Other = blood/blood products, occupational, perinatal and other exposures

Source: Public Health Surveillance Unit (HIV Surveillance Data).
### Table 9. Proportion of Male Patients Actively Engaged in Care by Exposure and Year of Care [VCH46]

<table>
<thead>
<tr>
<th>Exposure</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSM</td>
<td>83.2</td>
<td>80.9</td>
<td>80.6</td>
<td>77.8</td>
<td>77.4</td>
<td>76.4</td>
<td>75.9</td>
<td>75.9</td>
<td>74.8</td>
</tr>
<tr>
<td>MSM/IDU</td>
<td>100</td>
<td>83.3</td>
<td>89.3</td>
<td>82.1</td>
<td>81</td>
<td>81.8</td>
<td>77.6</td>
<td>82.4</td>
<td>85.7</td>
</tr>
<tr>
<td>IDU</td>
<td>83.3</td>
<td>85.5</td>
<td>77.3</td>
<td>74.3</td>
<td>69.9</td>
<td>75.2</td>
<td>75.2</td>
<td>74</td>
<td>73.9</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>93.3</td>
<td>83.7</td>
<td>76.2</td>
<td>76.5</td>
<td>77.5</td>
<td>76.3</td>
<td>76.5</td>
<td>77.2</td>
<td>77.9</td>
</tr>
<tr>
<td>Other*</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>92.3</td>
<td>82.4</td>
<td>76.2</td>
<td>66.7</td>
<td>66.7</td>
<td>67.9</td>
</tr>
<tr>
<td>Unknown</td>
<td>100</td>
<td>83.3</td>
<td>83.3</td>
<td>76.5</td>
<td>70.8</td>
<td>71.8</td>
<td>73.6</td>
<td>74.2</td>
<td>77.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>86.2</td>
<td>82.6</td>
<td>80.2</td>
<td>77.6</td>
<td>76.4</td>
<td>76.3</td>
<td>75.6</td>
<td>75.8</td>
<td>75.5</td>
</tr>
</tbody>
</table>

*Other = blood/blood products, occupational, perinatal and other exposures
The proportions in this table represent the proportion of males in each exposure group engaged in care among all males of that exposure group in the dataset.
The total proportions represent the proportion of all male diagnoses engaged in care in that diagnosis year.

### Table 10. Proportion of Female Patients Actively Engaged in Care by Exposure and Year of Care [VCH46]

<table>
<thead>
<tr>
<th>Exposure</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDU</td>
<td>62.5</td>
<td>68.6</td>
<td>60</td>
<td>55.1</td>
<td>58.8</td>
<td>62</td>
<td>60.2</td>
<td>67</td>
<td>66.7</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>60</td>
<td>70.8</td>
<td>71.9</td>
<td>75</td>
<td>81.4</td>
<td>76.1</td>
<td>76.6</td>
<td>75.9</td>
<td>78.8</td>
</tr>
<tr>
<td>Other*</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Unknown</td>
<td>50</td>
<td>0</td>
<td>0</td>
<td>33.3</td>
<td>60</td>
<td>40</td>
<td>57.1</td>
<td>72.7</td>
<td>74</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>63</td>
<td>69.8</td>
<td>63.7</td>
<td>62.7</td>
<td>68.2</td>
<td>69</td>
<td>68.5</td>
<td>72.1</td>
<td>74</td>
</tr>
</tbody>
</table>

*Other = blood/blood products, occupational, perinatal and other exposures
The proportions in this table represent the proportion of females in each exposure group engaged in care among all females of that exposure group in the dataset.
The total proportions represent the proportion of all female diagnoses engaged in care in that diagnosis year.

Source: Public Health Surveillance Unit (HIV Surveillance Data) & BC CIE Drug Treatment Program Data.
Table 11. Proportion of Male Patients Currently Prescribed ARVs by Exposure and Year of Diagnosis [VCH48]

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Year of Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2003</td>
</tr>
<tr>
<td>MSM</td>
<td>17.9</td>
</tr>
<tr>
<td>MSM/IDU</td>
<td>14.3</td>
</tr>
<tr>
<td>IDU</td>
<td>5.6</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>30</td>
</tr>
<tr>
<td>Other*</td>
<td>50</td>
</tr>
<tr>
<td>Unknown</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18.4</td>
</tr>
</tbody>
</table>

*Other = blood/blood products, occupational, perinatal and other exposures.

The proportions in this table represent the proportion of males in each exposure group prescribed ARVs among all males of that exposure group in the dataset.

The total proportions represent the proportion of all male diagnoses prescribed ARVs in that diagnosis year.

Table 12. Proportion of Female Patients Currently Prescribed ARVs by Exposure and Year of Diagnosis [VCH48]

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Year of Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2003</td>
</tr>
<tr>
<td>IDU</td>
<td>0</td>
</tr>
<tr>
<td>Heterosexual</td>
<td>20</td>
</tr>
<tr>
<td>Other*</td>
<td>100</td>
</tr>
<tr>
<td>Unknown</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11.1</td>
</tr>
</tbody>
</table>

*Other = blood/blood products, occupational, perinatal and other exposures.

Source: Public Health Surveillance Unit (HIV Surveillance Data) & BC CFU Drug Treatment Program Data.

The proportions in this table represent the proportion of females in each exposure group prescribed ARVs among all females of that exposure group in the dataset.

The total proportions represent the proportion of all female diagnoses prescribed ARVs in that diagnosis year.

Figure 9
Mean Community Viral Load (vL) [VCH53]
Proportion of HIV Positive Individuals Not Fully Suppressed [VCH54]

Source: Public Health Surveillance Unit (HIV Surveillance Data) & BC CFE Drug Treatment Program Data.
Table 13. Mean Community Viral Load and Proportion of HIV Positive Individuals Not Fully Suppressed, by those on ARVs and not on ARVs [VCH53, 54]

<table>
<thead>
<tr>
<th>Year</th>
<th>Half years</th>
<th>Mean Community vL (copies/mL)</th>
<th>Proportion on ARVs (%)</th>
<th>Proportion not on ARVs (%)</th>
<th>Proportion of all HIV positive individuals with high viral load (&gt;1000 copies/mL)</th>
<th>Numerator/Denominator of VCH54</th>
<th>Proportion on ARVs (%)</th>
<th>Proportion not on ARVs (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>Jan-Jun</td>
<td>793</td>
<td>56</td>
<td>44</td>
<td>53</td>
<td>(408/771)</td>
<td>24</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>July-Dec</td>
<td>563</td>
<td>62</td>
<td>38</td>
<td>48</td>
<td>(395/818)</td>
<td>28</td>
<td>72</td>
</tr>
<tr>
<td>2009</td>
<td>Jan-Jun</td>
<td>369</td>
<td>67</td>
<td>33</td>
<td>44</td>
<td>(390/880)</td>
<td>32</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>July-Dec</td>
<td>298</td>
<td>71</td>
<td>29</td>
<td>38</td>
<td>(353/928)</td>
<td>33</td>
<td>67</td>
</tr>
<tr>
<td>2010</td>
<td>Jan-Jun</td>
<td>231</td>
<td>77</td>
<td>23</td>
<td>34</td>
<td>(336/989)</td>
<td>42</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>July-Dec</td>
<td>187</td>
<td>79</td>
<td>21</td>
<td>32</td>
<td>(336/1065)</td>
<td>41</td>
<td>59</td>
</tr>
<tr>
<td>2011</td>
<td>Jan-Jun</td>
<td>138</td>
<td>84</td>
<td>16</td>
<td>25</td>
<td>(271/1102)</td>
<td>46</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>July-Dec</td>
<td>119</td>
<td>87</td>
<td>13</td>
<td>24</td>
<td>(288/1179)</td>
<td>54</td>
<td>46</td>
</tr>
</tbody>
</table>

Source: Public Health Surveillance Unit (HIV Surveillance Data) & BC CIE Drug Treatment Program Data.
Appendix A. Indicator Definitions and Rationale
Appendix A. Indicator Definitions and Rationale

VCH 1. Number of POC Tests

Total number of Point of Care HIV tests administered by all sites engaged in STOP HIV/AIDS memorandums of understanding (in a given time period).

Rationale: Point-of-Care testing allows rapid on-site assessment of potentially HIV positive individuals, it improves access to care which may lead to increased case-finding, and reduced number of individuals unaware of their HIV status.

Data Source: HIV Point-of-Care (POC) Data

VCH4a. Number of New Positive POC Tests

Number of unique individuals who have had a positive POC HIV test in a given time period.

Rationale: Assessment of this indicator provides a measure of the success of testing initiatives and activities under the STOP HIV/AIDS Pilot Project.

Data Source: HIV Point-of-Care (POC) Data

VCH4b. Number of Previous Positive POC Tests

Number of POC positive tests who were determined during follow-up to have been previously diagnosed as HIV positive (in a given time period).

Rationale: A primary goal of the STOP HIV/AIDS pilot project is to find and diagnose individuals who are unaware of their HIV status. Assessment of this indicator provides a measure of the success of testing initiatives, and if STOP HIV/AIDS activities/projects are finding target individuals.

Data Source: HIV Point-of-Care (POC) Data

VCH4c. Number of False Positive POC Tests

Number of POC positive tests who were determined to be false positives after confirmatory Western Blot test.

Rationale: Assessment of this indicator provides a measure of the false positivity occurrence and rate in the community.

Data Source: HIV Point-of-Care (POC) Data

VCH8a. Number of HIV lab tests

Total number of HIV lab tests, either from VCH residents, a VCH clinic including non-VCH residents who test in VCH.
Rationale: A primary objective of the STOP HIV/AIDS project is to increase testing across Vancouver HSDA, however social media campaigns, and other activities may influence testing across the Health Authority. Assessing this indicator over time and in comparison with indicator VCH8c will provide a picture of how STOP HIV/AIDS is influencing HIV testing among other clinics not engaged in MOUs or collaboratives.

Data Source: HIV Laboratory Testing Data

**VCH8b: Number of HIV lab tests from all clinics in VCH**

Total number of HIV lab tests ordered from a clinic in VCH.

Rationale: A primary objective of the STOP HIV/AIDS project is to increase testing across Vancouver HSDA, however social media campaigns, and other activities may influence testing across the Health Authority. Assessing this indicator over time and in comparison with indicator VCH8c will provide a picture of how STOP HIV/AIDS is influencing HIV testing among other clinics not engaged in MOUs or collaboratives.

Additional Selection Criteria:
HIV lab testing records without a known clinic address were excluded.

Data Source: HIV Laboratory Testing Data

**VCH8c: Number of HIV lab tests from all Vancouver HSDA clinics**

Total number of HIV lab tests ordered from a clinic in Vancouver HSDA.

Rationale: A primary objective of the STOP HIV/AIDS project is to increase testing across Vancouver HSDA, this indicator is a direct measure of the success of such efforts.

Additional Selection Criteria:
HIV lab testing records without a known clinic address were excluded.

Data Source: HIV Laboratory Testing Data

**VCH11a: Number of HIV lab tests from residents of VCH (only those with a known VCH residence)**

Total number of HIV lab tests ordered from residents of Vancouver Coastal Health Authority.

Rationale: Often people from outside the Health Authority will visit VCH to undergo HIV testing, this indicator is a measure of the testing volumes among residents of this Health Authority.

Additional Selection Criteria:
HIV lab testing records without a known residence were excluded.

Data Source: HIV Laboratory Testing Data
VCH11b: Number of HIV lab tests from residents of Vancouver HSDA (or those who tested in Vancouver HSDA but for whom there is no address information).

Total number of HIV lab tests ordered from residents of Vancouver HSDA.

Rationale: STOP HIV/AIDS pilot project objectives and activities specifically target health care service providers and populations in Vancouver HSDA, this indicator will evaluate if these services are indeed reaching the target populations.

Additional Selection Criteria:
HIV lab testing records without a known residence were excluded.

Data Source: HIV Laboratory Testing Data

VCH11c: Number of HIV lab tests from residents of Richmond and Coastal HSDAs.

Total number of HIV lab tests ordered from residents of Richmond and Coastal HSDA.

Rationale: STOP HIV/AIDS pilot project objectives and activities specifically target health care service providers and populations in Vancouver HSDA, however they may influence activities in other HSDAs within VCH.

Additional Selection Criteria:
HIV lab testing records without a known residence were excluded.

Data Source: HIV Laboratory Testing Data

VCH11d: Number of HIV lab tests from non-residents of VCH who, tested in VCH.

Total number of HIV lab tests ordered from non-residents of Vancouver Coastal Health Authority.

Rationale: Often people from outside the Health Authority will visit VCH to undergo HIV testing, this indicator will measure this trend.

Additional Selection Criteria:
HIV lab testing records without a known residence were excluded.

Data Source: HIV Laboratory Testing Data

VCH13a. Number of positive HIV diagnoses for VCH residents

Total number of new unique HIV positive diagnoses within VCH as a whole.

Rationale: Increased case finding to reduce the number of individuals unaware of their HIV positive status is a primary objective of the STOP HIV/AIDS pilot project. This indicator is a direct measure of the success of this work.
VCH13b. Number of positive HIV diagnoses for Vancouver HSDA Residents (or those who tested in Vancouver but for whom address is unavailable)

Total number of new unique HIV positive diagnoses among Vancouver HSDA residents, or those who tested in Vancouver HSDA but have unknown residence.

Rationale: Increased case finding to reduce the number of individuals unaware of their HIV positive status is a primary objective of the STOP HIV/AIDS pilot project. This indicator is a direct measure of the success of this work.

Additional Selection Criteria:
Excludes individuals who may have been previously HIV positive.

Data Source: PHSU Reportable HIV Surveillance Data

VCH13c. Number of positive HIV diagnoses for Richmond and Coastal HSDA Residents

Total number of new unique HIV positive diagnoses among Richmond and Coastal HSDA residents, or those who tested in Vancouver HSDA but have unknown residence.

Rationale: Increased case finding to reduce the number of individuals unaware of their HIV positive status is a primary objective of the STOP HIV/AIDS pilot project objectives and activities specifically target health care services and populations in Vancouver HSDA, however they may influence activities in other HSDAs within VCH.

Additional Selection Criteria:
Excludes individuals who may have been previously HIV positive.

Data Source: PHSU Reportable HIV Surveillance Data

VCH14a. Percent positivity of VCH residents

The proportion of positive individuals diagnosed per HIV lab test administered for VCH residents.

Rationale: Increased case finding to reduce the number of individuals unaware of their HIV positive status is a primary objective of the STOP HIV/AIDS pilot project. This indicator will measure if STOP HIV/AIDS is indeed finding these individuals.

Data Source: PHSU Reportable HIV Surveillance Data and HIV Laboratory Testing Data
VCH14b. Percent positivity of Vancouver HSDA residents (including those who tested in Vancouver but do not have residence information)

The proportion of positive individuals diagnosed per HIV lab test administered for Vancouver HSDA residents or those who test in Vancouver but have no address information.

Rationale: Increased case finding to reduce the number of individuals unaware of their HIV positive status is a primary objective of the STOP HIV/AIDS pilot project. This indicator will measure if STOP HIV/AIDS is indeed finding these individuals.

Data Source: PHSU Reportable HIV Surveillance Data and HIV Laboratory Testing Data

VCH14c. Percent positivity of Richmond and Coastal HSDA residents

The proportion of positive individuals diagnosed per HIV lab test administered for residents of Richmond and Coastal HSDAs.

Rationale: Increased case finding to reduce the number of individuals unaware of their HIV positive status is a primary objective of the STOP HIV/AIDS pilot project. STOP HIV/AIDS pilot project objectives and activities specifically target health care service providers and populations in Vancouver HSDA, however they may influence activities in other HSDAs within VCH. This indicator will measure if STOP HIV/AIDS is leading to more new diagnoses per test offered in other HSDAs.

Data Source: PHSU Reportable HIV Surveillance Data and HIV Laboratory Testing Data

VCH16. Number of HIV positive diagnoses who were previously positive

Total number of unique individuals diagnosed in the given time period known to have been previously diagnosed positive.

Rationale: Individuals who have previously tested positive will not be considered a new case for surveillance and will not be captured by determining % positivity.

Data Source: Enhanced HIV Contact Tracing Form

VCH17. Number of contacts elicited

Total number of unique contacts elicited from HIV positive clients in a given time period.

Rationale: Contact tracing aims to reduce transmission of HIV, and is also effective in reducing the incidence of HIV in the population. This is an important public health strategy to reach individuals who may not be aware of their HIV status. Eliciting partner information from an index case is a critical first step to contact tracing and will be important to track STOP HIV/AIDS success.

Analytical Definition
Additional Selection Criteria:
Counts of contacts elicited per quarter, are based on the "date contact opened" field on each contact tracing form. When this field is missing, the “date index case notified of HIV diagnosis” is used instead.

This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

**VCH17a. Number of contacts elicited per HIV positive case**

Total number of unique contacts elicited per HIV positive client in a given time period.

Rationale: Contact tracing aims to reduce transmission of HIV, and is also effective in reducing the incidence of HIV in the population. This is an important public health strategy to reach individuals who may not be aware of their HIV status. Eliciting partner information from an index case is a critical first step to contact tracing and will be important to track STOP HIV/AIDS success.

*Analytical Definition*

Numerator: Total number of unique contacts elicited in a given time period (VCH17)

Denominator: Total number of unique HIV index cases of all contacts elicited in the given time period.

Note: The denominator is NOT the number of new HIV positive diagnoses this quarter, but rather the total number of HIV index cases for which contacts have been elicited within that time period. This is the most appropriate determination due to the lag time between HIV positive reporting to VCH CDC Department and the time to which contact follow-up is initiated.

Additional Selection Criteria:
Counts of contacts elicited per quarter, are based on the "date contact opened" field on each contact tracing form. When this field is missing, the “date index case notified of HIV diagnosis” is used instead.

This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

**VCH19. Proportion of contacts notified**

Proportion of unique contacts notified of their potential exposure to HIV in a given time period.

Rationale: Managing infection in people with more than one current sexual partner will have a significant impact on the spread of HIV, thus assessing the success of partner notification
practice will be an important measure. Moreover, evidence suggests that method of partner notification is associated with the rate of partners presenting for medical evaluation.

*Analytical Definition*

Numerator: Total number of unique contacts notified
Denominator: Total number of unique contacts elicited from HIV positive clients in a given time period (VCH17).

Additional Selection Criteria:
Counts of contacts elicited per quarter, are based on the "date contact opened" field on each contact tracing form. When this field is missing, the “date index case notified of HIV diagnosis” is used instead.

This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

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VCH23a. *Proportion of contacts tested for HIV*

Proportion of Contacts tested for HIV in a given time period.

Rationale: The goal of contact tracing is to inform contacts of their risk of infection, encourage contacts to be tested for HIV and identify individuals who are HIV positive, this indicator will be an important measure of the success of the enhance public health efforts under STOP HIV/AIDS pilot project.

*Analytical Definition*

Numerator: Number of contacts tested for HIV
Denominator: Proportion of unique contacts notified of their potential exposure to HIV (VCH19).

Additional Selection Criteria:
Counts of contacts elicited per quarter, are based on the "date contact opened" field on each contact tracing form. When this field is missing, the “date index case notified of HIV diagnosis” is used instead.

This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

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VCH23b. *Number of contacts who tested HIV positive*

Number of contacts who tested HIV positive in a given time period.
Rationale: A second measure of case-finding and contact tracing success is identifying individuals who are HIV positive.

*Analytical Definition*

Numerator: Number of unique contacts tested for HIV who tested positive

Additional Selection Criteria:
Counts of contacts elicited per quarter, are based on the "date contact opened" field on each contact tracing form. When this field is missing, the “date index case notified of HIV diagnosis” is used instead.

This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

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**VCH23c. Percent positivity (%) due to Contact Tracing**

The proportion of positive contacts diagnosed per contact tested for HIV.

Rationale: A second measure of case-finding and contact tracing success is identifying individuals who are HIV positive, and the yield of positive cases from these efforts.

*Analytical Definition*

Numerator: Number of unique contacts tested for HIV who tested positive (VCH23b)
Denominator: Proportion of contacts tested for HIV in a given time period (VCH23a)

Additional Selection Criteria:
Counts of contacts elicited per quarter, are based on the "date contact opened" field on each contact tracing form. When this field is missing, the “date index case notified of HIV diagnosis” is used instead.

This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

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**VCH24. Proportion of contacts who were known to be previously positive**

Proportion of contacts who were previously positive at the time of notification (in a given time period).

Rationale: Identifying partners in the latent period of infection may identify those from whom infection was acquired, but overall this indicator will provide a picture of the HIV population in VCHA.
**Analytical Definition**

Numerator: Number of contacts known/determined to be previously positive
Denominator: Proportion of unique contacts notified of their potential exposure to HIV in a given time period (VCH19).

Additional Selection Criteria:
Counts of contacts elicited per quarter, are based on the "date contact opened" field on each contact tracing form. When this field is missing, the “date index case notified of HIV diagnosis” is used instead.

This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

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### VCH26. Proportion of contacts connected to care provider

Proportion of contacts connected to a care provider within a given time period.

Rationale: As part of public health follow up with HIV contacts, previously positive or newly positive individuals should be connected to a care provider, if they are found to be not engaged in care.

**Analytical Definition**

Numerator: Number of contacts connected to a care provider
Denominator: Total number of contacts notified AND those that are receptive to counselling and referral.

Additional Selection Criteria:
Counts of contacts elicited per quarter, are based on the "date contact opened" field on each contact tracing form. When this field is missing, the “date index case notified of HIV diagnosis” is used instead.

This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

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### VCH27. Proportion of contacts put on ARVs

Proportion of contacts put on Anti-retroviral therapy (ARVs).

Rationale: As part of public health follow up with HIV contacts, previously positive or newly positive individuals should be engaged in treatment if eligible.
Analytical Definition

Numerator: Number of contacts put on ARVs in the given time period.
Denominator: Total number of contacts notified AND those that are receptive to counselling and referral in a given time period.

Additional Selection Criteria:
Counts of contacts elicited per quarter, are based on the "date contact opened" field on each contact tracing form. When this field is missing, the “date index case notified of HIV diagnosis” is used instead.

This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

VCH28. Number of contacts connected with housing

Number of contacts identified to require housing supports and subsequently connected to these services.

Rationale: Many individuals fail to access appropriate HIV care and treatment due to a variety of challenges (mental, illness, addiction, etc...), which also impact on adherence to treatment guidelines, therefore its important to measure the public health impact of aiding individuals in these areas.

Analytical Definition

Numerator: Total number of unique contacts notified of risk that were connected with housing supports in a given time period.

Additional Selection Criteria:
This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

VCH29. Number of notified contacts connected with addiction services/treatment

Total number of unique contacts notified of risk that were connected with addiction treatments.

Rationale: Many individuals fail to access appropriate HIV care and treatment due to a variety of challenges (mental, illness, addiction, etc...), which also impact on adherence to treatment guidelines, therefore its important to measure the public health impact of aiding individuals in these areas.

Analytical Definition

Numerator: Total number of unique contacts notified of risk that were connected with addiction services/treatment in a given time period.
Additional Selection Criteria:
This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

VCH30. Number of notified contacts referred to additional counselling

Number of unique contacts notified of risk that were connected to counselling services.

Rationale: Many individuals fail to access appropriate HIV care and treatment due to a variety of challenges (mental, illness, addiction, etc...), which also impact on adherence to treatment guidelines, therefore its important to measure the public health impact of aiding individuals in these areas.

Analytical Definition

Numerator: Total number of unique contacts notified of risk that were connected to counselling services in a given time period.

Additional Selection Criteria:
This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

VCH31. Number of notified contacts connected with HIV/AIDS support services

Number of unique contacts notified of risk that were connected with HIV/AIDS support services.

Rationale: Many individuals fail to access appropriate HIV care and treatment due to a variety of challenges (mental, illness, addiction, etc...), which also impact on adherence to treatment guidelines, therefore its important to measure the public health impact of aiding individuals in these areas.

Analytical Definition

Numerator: Total number of unique contacts notified of risk that were connected to HIV/AIDS services in a given time period.

Additional Selection Criteria:
This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

VCH32. Number of notified contacts connected with Case Management

Number of unique contacts notified of risk that were connected with case management.
Rationale: Many individuals fail to access appropriate HIV care and treatment due to a variety of challenges (mental, illness, addiction, etc...), which also impact on adherence to treatment guidelines, therefore its important to measure the public health impact of aiding individuals in these areas.

Analytical Definition

Numerator: Total number of unique contacts notified of risk that were connected with Case Management in a given time period.

Additional Selection Criteria:
This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

VCH33. Number of notified contacts connected with STOP Outreach Case Management

Number of unique contacts notified of risk that were connected with STOP Outreach Team case management.

Rationale: Many individuals fail to access appropriate HIV care and treatment due to a variety of challenges (mental, illness, addiction, etc...), which also impact on adherence to treatment guidelines, therefore its important to measure the public health impact of aiding individuals in these areas.

Analytical Definition

Numerator: Total number of unique contacts notified of risk that were connected with STOP Outreach Team case management in a given time period.

Additional Selection Criteria:
This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

VCH34. Number of notified contacts provided HIV risk reduction counselling

Number of unique contacts notified of risk that were counselled on HIV risk reduction measures/behaviours.

Rationale: Many individuals fail to access appropriate HIV care and treatment due to a variety of challenges (mental, illness, addiction, etc...), which also impact on adherence to treatment guidelines, therefore its important to measure the public health impact of aiding individuals in these areas.

Analytical Definition
Numerator: Total number of unique contacts notified of risk that were counselled on HIV risk reduction measures behaviours.

Additional Selection Criteria: This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

VCH35. Number of notified contacts provided other STI risk reduction counselling

Number of unique contacts notified of risk that were counselled on other STI risk reduction measures/behaviours.

Rationale: Many individuals fail to access appropriate HIV care and treatment due to a variety of challenges (mental, illness, addiction, etc...), which also impact on adherence to treatment guidelines, therefore it's important to measure the public health impact of aiding individuals in these areas.

Analytical Definition

Numerator: Total number of unique contacts notified of risk that were counselled on other STI risk reduction measures behaviours.

Additional Selection Criteria: This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

VCH36. Number of social networking sites identified

Number of sites identified through contact tracing.

Rationale: The process of partner notification and contact tracing often identifies locations where risk behaviours occur and indicate a need for testing at these sites. Assessing the success of these case-finding strategies will aid in better public health follow-up measures.

Analytical Definition

Numerator: Total number of unique sites identified through contact tracing.

Data Source: Enhanced HIV Contact Tracing Form

VCH37. Proportion of social networking sites identified where testing was carried out

Proportion of sites identified where testing was carried out
Rationale: The process of partner notification and contact tracing often identifies locations where risk behaviours occur and indicate a need for testing at these sites. Assessing the success of these case-finding strategies will aid in better public health follow-up measures.

Analytical Definition

Numerator: Total number of unique sites identified where testing was carried out in the given time period.
Denominator: Total number of unique sites identified through contact tracing in a given time period.

Data Source: Enhanced HIV Contact Tracing Form

VCH38. Number of individuals tested at all social networking sites

Number of individuals that were tested from all sites identified through contact tracing

Numerator: Total number of individuals that were tested from all sites identified through contact tracing in the given time period.

Data Source: Enhanced HIV Contact Tracing Form

VCH39. Proportion of individuals who tested positive (% positivity) at all social networking sites

Number of individuals that tested positive from all social networking sites identified through contact tracing

Numerator: Total number of individuals that tested positive from all sites identified through contact tracing in the given time period.

Data Source: Enhanced HIV Contact Tracing Form

VCH40. Proportion of individuals who tested positive (% positivity) per social networking sites

Number of individuals that tested positive from all social networking sites identified through contact tracing
Rationale: The process of partner notification and contact tracing often identifies locations where risk behaviours occur and indicate a need for testing at these sites. Assessing the success of these case-finding strategies will aid in better public health follow-up measures.

**Analytical Definition**

**Numerator:** Total number of unique individuals that tested positive at each site identified through contact tracing in a given time period.
Denominator: Total number of unique individuals tested at each site identified through contact tracing.

**Data Source:** Enhanced HIV Contact Tracing Form

**VCH41. Proportion of new diagnoses linked to care within 30 days of diagnosis**

Proportion of individuals with an HIV positive test in this quarter, who have at least one post-HIV diagnosis HIV viral load (vL) or CD4 test result on record within 30 days of diagnosis.

Rationale: It is vital that linkage to HIV-care occur as soon after diagnosis as possible so that a clinical evaluation can be conducted, eligibility for ARV therapy and linkage to other services can be established and to minimize the risk of transmission. Standard care for persons with HIV includes regular clinical and laboratory assessment. As part of enhanced HV guidelines, new HIV diagnoses should receive a vL test or CD4 test within 30 days of diagnosis.

**Analytical Definition**

**Numerator:** A subset of the denominator that has had a CD4 or vL test within 30 days of diagnosis.
Denominator: Total number of new HIV positive cases diagnosed in a given time period.

**Year to Date Definition:** Proportion of anyone who is a new diagnosis from beginning of year to end of the current time period, and who has had a vL or CD4 within 30 days of diagnosis.
Numerator: A subset of the denominator that has had a vL or CD4 within 30 days of diagnosis.
Denominator: Total number of new cases diagnosed from beginning of year to end of current time period.

**Additional Selection Criteria:**
The HIV Surveillance extract includes some information on CD4 and vL testings. For this reason, the testing date used for this indicator (for CD4 tests) was that closest to the diagnosis date, regardless of the data source. However, in the case of vL testing date only use data from the BC CfE was used for this indicator (as known to be more accurate).

CD4 and/or vL testing records that occurred prior to diagnosis date were dropped from this analysis.
Individuals deceased by the end of the quarter were dropped.
Viral load testing records with either missing dates or missing values were dropped from this analysis.
Data Source: PHSU Reportable HIV Surveillance Data linked with the BC CfE Drug Treatment Database.

**VCH44a. Time to linkage to HIV care among those newly diagnosed with HIV who were linked to care within 30 days of diagnosis (median days).**

The interval between first HIV positive test and first HIV CD4 or vL, among all individuals who had such a test within 30 days of diagnosis.

Rationale: It is vital that linkage to HIV-care occur as soon after diagnosis as possible so that a clinical evaluation can be conducted, eligibility for ARV therapy and linkage to other services can be established and to minimize the risk of transmission. Standard care for persons with HIV includes regular clinical and laboratory assessment. As part of enhanced HV guidelines, new HIV diagnoses should receive a vL test or CD4 test within 30 days of diagnosis. This indicator provides a picture of how quickly HIV positive individuals are in fact receiving the appropriate care.

**Analytical Definition**

Year to Date Definition: Median days for interval between first HIV positive test and first CD4 or vL test within 30 days of diagnosis among those new diagnosis since beginning of year in question.

Additional Selection Criteria:
The testing date used for this indicator was that closest to the diagnosis date, and for viral loads only used data from the BC CfE for this analysis (as known to be more accurate). CD4 or viral load testing records that occurred prior to diagnosis date were dropped from this analysis.
Individuals deceased by the end of the quarter were dropped.
CD4 and viral load testing records with either missing dates or missing values were dropped from this analysis.

Data Source: PHSU Reportable HIV Surveillance Data linked with the BC CfE Drug Treatment Database.

**VCH44b. Time to linkage to HIV care among those newly diagnosed with HIV (median days).**

The interval between first HIV positive test and first HIV CD4 or viral load, among all individuals diagnosed in the given time period.

Rationale: It is vital that linkage to HIV-care occur as soon after diagnosis as possible so that a clinical evaluation can be conducted, eligibility for ARV therapy and linkage to other services can be established and to minimize the risk of transmission. Standard care for persons with HIV includes regular clinical and laboratory assessment. As part of enhanced HV guidelines, new HIV diagnoses should receive a vL test or CD4 test within 30 days of diagnosis. This indicator provides a picture of how quickly HIV positive individuals are in fact receiving the appropriate care.
**Analytical Definition**

Year to Date Definition: Median days for interval between first HIV positive test and first CD4 or vL test among those new diagnosis since beginning of year in question.

Additional Selection Criteria:
The testing date used for this indicator was that closest to the diagnosis date, and for viral loads only used data from the BC CfE for this analysis (as known to be more accurate).
CD4 or viral load testing records that occurred prior to diagnosis date were dropped from this analysis.
Individuals deceased by the end of the quarter were dropped.
CD4 or viral load testing records with either missing dates or missing values were dropped from this analysis.

Data Source: PHSU Reportable HIV Surveillance Data linked with the BC CfE Drug Treatment Database.

**VCH45a. Proportion of HIV patients that have a CD4 count > 500 cells/mL at diagnosis**

Proportion of individuals diagnosed HIV positive in a given time period who have a CD4 cell count of >500 cells/mL at the time of diagnosis.

Rationale: Prior to STOP HIV/AIDS 65% of the population was diagnosed with CD4 levels below 500 cells/mL. According to current guidelines treatment guidelines patients with CD4 levels below 500 cells/mL are eligible for treatment. Diagnosing individuals earlier on in the course of disease enables them to get on treatment earlier, and improves patient morbidity and mortality. It is also an indication that we are reducing the number of individuals in the population who are unaware of their HIV infection, as we are no longer finding those individuals with low CD4s/ high viral loads.

**Analytical Definition**

Numerator: A subset of the denominator with a first CD4 cell count at diagnosis is >500 cells/mL
Denominator: All new HIV positive cases diagnosed in a given time period.

STOP Mean Definition: Total numerator during STOP period / total denominator during STOP period.

Year to Date Definition: Proportion of all new diagnoses since beginning of year to current who have a CD4 cell count of >500 cells/mL at the time of diagnosis. Numerator – a subset of the denominator who have a CD4 cell count at diagnosis of >500 cells/mL. Denominator - all new HIV positive diagnoses since beginning the beginning of the year in question.

Additional Selection Criteria:
The HIV Surveillance extract includes some information on CD4 and vL testings. For this reason, the testing date used for this indicator (for CD4 tests) was that closest to the diagnosis date, regardless of the data source.
Includes individuals who may have had started treatment before they are eligible.
CD4 testing records that occurred prior to diagnosis date were dropped from this analysis. CD4 testing records with either missing dates or missing values were dropped from this analysis.

Data Source: PHSU Reportable HIV Surveillance Data linked with the BC CfE Drug Treatment Database.

**VCH45b. Proportion of HIV patients that have a CD4 count \(\geq 200\) cells/mL at diagnosis**

Proportion of individuals diagnosed HIV positive in a given time period who have a CD4 cell count of \(\geq 200\) cells/mL at the time of diagnosis.

Rationale: Finding HIV positive individuals before late stage disease is an important objective of the STOP HIV/AIDS program. Diagnosing individuals earlier on in the course of disease enables them to get on treatment earlier, and improves patient morbidity and mortality. It is also an indication that we are reducing the number of individuals in the population who are unaware of their HIV infection, as we are no longer finding those individuals with low CD4s/ high viral loads.

**Analytical Definition**

**Numerator:** A subset of the denominator with a first CD4 cell count at diagnosis is \(\geq 200\) cells/mL

**Denominator:** All new HIV positive cases diagnosed in a given time period.

**STOP Mean Definition:** Total numerator during STOP period / total denominator during STOP period.

**Year to Date Definition:** Proportion of all new diagnoses since beginning of year to current who have a CD4 cell count of \(\geq 200\) cells/mL at the time of diagnosis. Numerator – a subset of the denominator who have a CD4 cell count at diagnosis of \(\geq 200\) cells/mL. Denominator - all new HIV positive diagnoses since beginning the beginning of the year in question.

**Additional Selection Criteria:**
The HIV Surveillance extract includes some information on CD4 and vL testings. For this reason, the testing date used for this indicator (for CD4 tests) was that closest to the diagnosis date, regardless of the data source.

CD4 testing records that occurred prior to diagnosis date were dropped from this analysis.

CD4 testing records with either missing dates or missing values were dropped from this analysis.

Data Source: PHSU Reportable HIV Surveillance Data linked with the BC CfE Drug Treatment Database.

**VCH46. Proportion of HIV patients that are actively engaged in care**

Proportion of HIV positive individuals in the database who have had the recommended number of vL testings per year.

Rationale: Because HIV disease progression is highly variable and can occur rapidly, and treatment requires constant evaluation for efficacy and safety, HIV patients need to be closely monitored on a regular basis. Standard practice requires a minimum of 3 visits/laboratory assignments annually.
Analytical Definition

Numerator: A subset of the denominator who meet the criteria for "engaged in care" ie. having at least 2 vL per year, or for those diagnosed less than 1 year who had 1 test for every 6 months since diagnosis.

Denominator: Total number of eligible HIV positive individuals in the dataset (eligible refers to selection criteria below).

Time Period of Analysis: A retrospective examination of the number of vL tests done in the whole period from HIV diagnosis date to end of current time period.

STOP Period Definition: The average count is the average of the numerators for each quarter since STOP HIV/AIDS initiated (July 1, 2010), divided by the average of the denominators of each quarter since STOP HIV/AIDS initiated. The minimum count for the STOP Period is the minimum proportion of engaged in care from all quarters in this period, while the maximum is the maximum proportion of people engaged in care from all quarters in this period.

Historical Period Definition: The 2 year historical baseline period will report on the proportion of our HIV positive population who have had the recommended number of vL tests within the 2 year time period. The average count is the average of the numerators for each quarter since Q1 2008 divided by the average of the denominator of each quarter since Q1 2008. The minimum and maximum values are defined in the same manner as described above for the STOP Period Definition.

Year to Date Definition: Numerator - number of HIV positive individuals who have been engaged in care during the period since the beginning of the year to end of current time period. Denominator - total number of eligible HIV positive individuals alive in that year.

Additional Selection Criteria:
The testing date used for this indicator only used data from the BC CfE for viral loads (as is known to be more accurate).

Viral load testing records that occurred prior to diagnosis date were dropped from this analysis. Viral load testing records with either missing dates or missing values were dropped from this analysis. Individuals deceased by the end of the quarter were dropped.

Data Source: PHSU Reportable HIV Surveillance Data linked with the BC CfE Drug Treatment Database.

VCH47a. Proportion of HIV patients not found in care

Proportion of all known HIV positive individuals in the population who have been diagnosed for at least 9 months, and have not had a vL test within the past 9 months.

Rationale: Due to the need for long-term monitoring of both disease progression and the efficacy of any therapy, as well as the status of comorbid conditions or lifestyle factors, long-
term retention in HIV-related care is imperative to minimize the risk of HIV-related morbidity and mortality.

**Analytical Definition**

Numerator: Number of HIV patients in the denominator who have not had a vL for at least 9 months

Denominator: All individuals in the dataset who have been HIV positive for at least 9 months

Year to Date Definition: Numerator – A subset of the denominator and have not had a vL for at least 9 months. Denominator - All HIV positive individuals alive and diagnosed for at least 9 months since the beginning of year in question.

Additional Selection Criteria:

Individuals diagnosed less than 9 months from the end of the time period in question were excluded.

Individuals deceased by the end of the quarter were excluded.

Data Source: PHSU Reportable HIV Surveillance Data linked with the BC CfE Drug Treatment Database.

**VCH47b. Proportion of HIV patients not found in care**

Proportion of all known HIV positive individuals in the population who have been diagnosed for at least 9 months, and have not had a vL test within the past 9 months.

Rationale: Due to the need for long-term monitoring of both disease progression and the efficacy of any therapy, as well as the status of comorbid conditions or lifestyle factors, long-term retention in HIV-related care is imperative to minimize the risk of HIV-related morbidity and mortality.

**Analytical Definition**

Numerator: Number of HIV patients in the denominator who have not had a vL for at least 9 months

Denominator: All individuals in the dataset who have been HIV positive for at least 9 months and who were able to be linked to the BC CfE clinical data set.

Year to Date Definition: Numerator – A subset of the denominator and have not had a vL for at least 9 months. Denominator - All HIV positive individuals alive and diagnosed for at least 9 months since the beginning of year in question and who were able to be linked to the BC CfE clinical data set.

Additional Selection Criteria:

Individuals diagnosed less than 9 months from the end of the time period in question were excluded.

Individuals deceased by the end of the quarter were excluded.
Data Source: PHSU Reportable HIV Surveillance Data linked with the BC CfE Drug Treatment Database.

**VCH48. Proportion of patients who are currently prescribed ARVs**

Total alive HIV positive individuals who have a prescription for ARVs in the current time period.

Rationale: A primary objective of the STOP HIV/AIDS program is to ensure that more HIV positive individuals are actively engaged in care and on antiretroviral therapy.

*Analytical Definition*

Numerator: A subset of the denominator who have a prescription for ARVs within 60 days of the end of the given time period.

Denominator: Total alive HIV positive individuals in a given time period.

Year to Date definition: All HIV positive individuals alive at end of quarter who have taken ARVs within the last 2 months.

Additional Selection Criteria:
Individuals deceased by the end of the quarter were excluded.

Data Source: PHSU Reportable HIV Surveillance Data linked with the BC CfE Drug Treatment Database.

**VCH49. Proportion of patients who have discontinued and not restarted ARVs**

Proportion of alive HIV positive individuals who have not had a prescription for ARVs for at least 2 consecutive months.

Rationale: Not only is it important to ensure that more HIV positive individuals are actively engaged in care on ARV treatment, it is equally critical for STOP HIV/AIDS pilot project success to reduce the barriers to optimal treatment adherence and the number of people who discontinue ARVs.

*Analytical Definition*

Numerator: A subset of the denominator that have not had a prescription for ARVs for at least 2 consecutive months AND have not resumed taking ARVs during the quarter.

Denominator: All HIV positive individuals alive at end of current quarter who have ever been on ARV treatment.

Censor this at the quarter: (1 = on ARVs that month; 0 = not on ARVs that month)
On ARVs = (101, 111, 010, 001)
Not on ARVs = (100, 000)
Year to Date Definition: Numerator - A subset of the denominator that have stopped taking ARVs during the year in question and not restarted. Denominator – All alive HIV positive individuals who were on ARVs at the start of the year in question. (Note: if the case had last 2 months of prescription at end of quarter with this pattern:10 they are considered to be ON ARVs.)

Additional Selection Criteria:
Individuals with ARV prescription start date before HIV diagnosis date were excluded.
Individuals deceased by the end of the quarter were excluded.

Data Source: PHSU Reportable HIV Surveillance Data linked with the BC CfE Drug Treatment Database.

VCH50a. Proportion of HIV positive individuals diagnosed for 6 months, eligible for treatment, who are taking ARVs

Proportion of HIV positive individuals who are eligible for antiretroviral therapy according to CD4 cell count, and are taking ARVs (regardless of other co-morbidities or contraindications to treatment).

Rationale: Patients with CD4 counts below 500 cells/mL should be receiving antiretroviral treatment regardless of co-morbidities or other factors.

Analytical Definition

Numerator: A subset of the denominator who have a prescription for ARVs
Denominator: Total number of HIV patients who have been diagnosed within 6 months of the quarter and have eligible CD4 values for ARV <=500 cells per mL in the current quarter.

Year to Date Definition: Numerator – A subset of the denominator who have a prescription for ARVs. Denominator – All individuals diagnosed HIV positive since the beginning of the year and have an eligible CD4 cells count = 500 cells/mL.

Additional Selection Criteria:
The first CD4 test of <= 500 cells/mL within the current quarter was used for this analysis. Individuals who may have started ARVs before their CD4s were eligible were included in this analysis. Drop cases with a first naïve ARV start date prior to diagnosis. CD4 test records prior to diagnosis date were excluded. CD4 test records with missing dates or missing values were excluded from this analysis. Individuals deceased by the end of the quarter were excluded.

Data Source: PHSU Reportable HIV Surveillance Data linked with the BC CfE Drug Treatment Database.

VCH50b. Proportion of HIV positive individuals diagnosed for 9 months, eligible for treatment, who are taking ARVs
Proportion of HIV positive individuals who are eligible for antiretroviral therapy according to CD4 cell count, and are taking ARVs (regardless of other co-morbidities or contraindications to treatment).

Rationale: Patients with CD4 counts below 500 cells/mL should be receiving antiretroviral treatment regardless of co-morbidities or other factors.

**Analytical Definition**

Numerator: A subset of the denominator who have a prescription for ARVs
Denominator: Total number of HIV patients who have been diagnosed within 9 months of the quarter and have eligible CD4 values for ARV <=500 cells per mL in the current quarter.

Year to Date Definition: Numerator – A subset of the denominator who have a prescription for ARVs. Denominator – All individuals diagnosed HIV positive since the beginning of the year and have an eligible CD4 cells count = 500 cells/mL.

Additional Selection Criteria:
The first CD4 test of <= 500 cells/mL within the current quarter was used for this analysis. Individuals who may have started ARVs before their CD4s were eligible were included in this analysis.
Drop cases with a first naïve ARV start date prior to diagnosis.
CD4 test records prior to diagnosis date were excluded.
CD4 test records with missing dates or missing values were excluded from this analysis.
Individuals deceased by the end of the quarter were excluded.

Data Source: PHSU Reportable HIV Surveillance Data linked with the BC CfE Drug Treatment Database.

**VCH51. Proportion of individuals newly taking ARVs who achieve viral suppression within 9 months**

Proportion of individuals who are taking ARVs for the first time and who achieve viral suppression within 9 months.

Rationale: Adherence to treatment protocols is essential to reducing the morbidity and mortality associated with HIV and AIDS. The majority individuals who adhere to ARV treatment protocols achieve virologic suppression, and thus measuring this status serves as a proxy measurement for treatment adherence.

Numerator: A subset of the denominator with two consecutive pVL record of <200 copies per/mL both taken after therapy start and at least one of which is taken within the first nine months of therapy
Denominator: All HIV positive individuals initiating first ever ARV treatment and who have at least two viral load tests on record.

Year to Date Definition: Numerator – A subset of the denominator who achieve virologica suppression (a least 2 consecutive VL <200 copies/mL). Denominator - Any new diagnoses newly taking ARVs since the beginning of the year in question to the end of quarter.
Additional Selection Criteria:
This is a cohort analysis, with the cohort being redefined every quarter. The cohort will retrospectively select back all new diagnoses within that past 12 months who are newly taking ARVs within that time period. (This applies to quarterly counts AND year to date counts). Individuals deceased by the end of the quarter were excluded.
Viral load testing records that occurred prior to diagnosis date were dropped from this analysis. Individuals with ARV prescription start date before HIV diagnosis date were excluded. Only VL testing data from the CFE database were used.

Data Source: PHSU Reportable HIV Surveillance Data linked with the BC CFE Drug Treatment Database.

**VCH52. Proportion of all individuals on ARVs who have achieved viral suppression**

Proportion of all individuals who are prescribed ARVs and who take achieve viral suppression.

Rationale: Adherence to treatment protocols is essential to reducing the morbidity and mortality associated with HIV and AIDS. The majority individuals who adhere to ARV treatment protocols achieve virologic suppression, and thus measuring this status serves as a proxy measurement for treatment adherence. It is important to know the measure of this indicator in both new ARV starts and all individuals on ARV treatment.

Numerator: A subset of the denominator that have two consecutive pVL record of <200 copies per/mL both taken after therapy start

Denominator: All HIV positive individuals initiating first ever ARV treatment and who have at least 2 viral load tests on record.

Achieve viral suppression (1:<200 cells/mL; 0:=>200 cells/mL) examines the pattern of the last 3 most recent viral loads (achieve if have patterns = 110; 111; 11 (third not available))

Year to Date Definition: Numerator – A subset of the denominator that have at least 2 VL levels <200 cells/mL. Denominator – All HIV positive individuals in the dataset on ARVs, and who have had at least 2 VL tests on record from the beginning of the year in question.

Additional Screening Criteria:
This cohort will retrospectively select back over the past 12 months, and include the last 3 most recent viral loads (or 2 most recent tests, if only 2 available).
Individuals deceased by the end of the quarter were excluded.
Viral load testing records that occurred prior to diagnosis date were dropped from this analysis.
Viral load testing records that occurred prior to the date of first naïve ARV start date were excluded from this analysis.
Individuals with ARV prescription start date before HIV diagnosis date were excluded.
Only VL testing data from the CFE database were used.

Data Source: PHSU Reportable HIV Surveillance Data linked with the BC CFE Drug Treatment Database.

**VCH53. Mean viral load of all known HIV positive individuals**
Mean vL values of all HIV positive individuals in the dataset, within a given time period.
Rationale: Mean community viral load is an indicator of the average viral burden for a particular population of HIV-positive persons, and is related to treatment effectiveness and transmission risk.

Analytical Definition

Year to Date Definition: An average of the most recent vL test levels (since the beginning of the year in question) of all HIV positive individuals in the dataset.

Additional Selection Criteria:
Individuals deceased by the end of the quarter were excluded.
Only vL testing data from the CfE database were used.
Viral load testing records with either missing dates or missing values were dropped from this analysis.

Data Source: PHSU Reportable HIV Surveillance Data linked with the BC CfE Drug Treatment Database.

VCH54. Proportion of HIV positive individuals not fully suppressed

The proportion of HIV positive individuals who have two vL tests > 1000 copies/mL within the given time period.

Rationale: HIV positive individuals with vL levels > 1000 copies/mL on record are considered to be infective, as opposed to suppressed individuals who are less likely to transmit HIV. This indicator also provides a measure of community viral load.

Analytical Definition

Numerator: A subset of the denominator who have levels > 1000 copies/mL within a given time period.

Denominator: All alive HIV positive individuals in the dataset

Data Source: PHSU Reportable HIV Surveillance Data linked with the BC CfE Drug Treatment Database.
Appendix B. Population Monitoring Data Sources
Appendix B – Population Monitoring Data Sources

HIV Point-of-Care (POC) Data

POC testing volumes reported from VCH sites engaged in STOP HIV/AIDS activities through Vancouver Coastal Health Authority Memorandums of Understanding.

Limitations: This data is not representative of all clinics in Vancouver HSDA or VCH, and thus testing volumes of clinics conducting POC tests outside of STOP HIV/AIDS initiatives are not captured. For this reason, the data likely reflect an underestimate of the true counts for POC testing volumes within the Vancouver HSDA population.

Data on POC preliminary positives, false positives and previous positives is received from VCH CD Control Department. All clinics in Vancouver HSDA who do conduct POC testing report any preliminary positive HIV tests to VCH CD Control Department. VCH CD Control Department conducts follow-up on a reported POC positives to determine if confirmation testing has been completed, and notes any previous and false positives.

Limitations: This process is relatively new, and as a result not all sites conducting POC testing within Vancouver HSDA are reporting these data to VCH CD Control Department. For this reason, the data likely reflect an underestimate of the true counts for preliminary positives, false positives and previous positives.

HIV Laboratory Testing Data

Data on HIV laboratory testing volumes is captured from both the PHSA Public Health Microbiology and Reference Laboratory (for all HIV confirmatory western blot analyses in the province of BC) and Providence Health Care (for first-step HIV confirmatory testing for all HIV tests ordered at St. Paul’s Hospital).

Limitations: PHSA Public Health Microbiology Reference Laboratory testing data is raw data on all HIV tests conducted within VCH, and analyses were produced using aggregate counts. This data does not take into account multiple HIV tests conducted for an individual within a 30-day period, and thus does not determine test counts by “testing episodes”. Data capture for all HIV testing done at St Paul’s Hospital was initiated in April 2008, and thus results reported herein for Q1 of 2008 do not include counts done at St. Paul’s Hospital.

HIV Positive Data

Data on all HIV positive tests in VCH is reported to the Public Health Surveillance Unit at Vancouver Coastal Health Authority. This data is captured on a monthly basis, and includes information on sociodemographic characteristics place of HIV testing, address of residence of HIV positive individuals, HIV risk factors and stage of HIV disease at diagnosis. This data does not report on individuals who tested in VCH but are non-residents of VCH.

HIV Clinical Monitoring Data and Drug Treatment Program Data
Clinical monitoring data includes information on viral load (vL) testing information and CD4 testing information that are captured by the BC Centre for Excellence in HIV/AIDS. Viral load data and CD4 data are captured for all HIV positive individuals having such clinical monitoring completed in the province of BC. These data are to be updated in real time, however in some instances there may be small lag times between sample draw date and the time the result ends up in the data base (typically less than 15 days).

Limitations: Real time updates has not always been in place for CD4 values. From 2007 and earlier only annual updates of CD4 measurements were received. Furthermore, all CD4 results are not consistently captured and uploaded into the BC CfE database, as not all sites completing these tests have been linked to source data.

Drug Treatment Program Data
Treatment of nearly all HIV positive individuals in the province of BC is delivered or coordinated through the BC Centre for Excellence Drug Treatment Program. As a result information on treatment regimens, date of treatment starts and restarts is captured for all HIV positive individuals involved in this program.

Limitations: Raw data from the CfE Drug Treatment Program is not provided for these analyses, instead some data have been cleaned and rolled into aggregate counts. As a result, there are some assumptions that have been made in order to work with this data format. These are described in the data definitions.