STOP HIV/AIDS Semi-Annual Monitoring Report

S1 (January 1, 2015 – June 30, 2015)

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Foreword

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

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

Following the successful implementation as a pilot project, the B.C. government announced a provincial roll out of the initiative from April 1, 2013.

The provincial project goals are to:
- Reduce the number of new HIV infections in B.C.
- Improve the quality, effectiveness, and reach of HIV prevention services.
- Increase early diagnosis of HIV.
- Reduce AIDS cases and HIV-related mortality.

Provincial level monitoring and evaluation is being conducted by the BCCfE using provincial testing data from the 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.

During the pilot, the Vancouver STOP HIV/AIDS Project *Quarterly Monitoring Report* was developed to enable VCH and PHC (Vancouver STOP partners) to report on overall changes in the project's targeted activities and display results at a population level within Vancouver Health Service Delivery Area (HSDA) and across VCH. This report provided important information to support timely and informed decision regarding project implementation, resource allocation and post-project sustainability planning.

With the expansion, we will continue to monitor the key indicators across VCH. The *Semi-Annual Monitoring Report* will provide the output to support informed decision making, and inform internal and external stakeholder groups about the VCH STOP project's impacts.

Please note the data sources used for this report are of a dynamic nature, and are subject to change on a frequent basis. Definitions of some indicators are also subject to change in order to meet the evaluation needs of the regional stakeholders. Please refer to Appendix A and consult the most recent report for the most up to date definitions. If you have any comments and queries, please forward them to Tim Chu (tim.chu@vch.ca) or Ellen Demlow (ellen.demlow@vch.ca).

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Acknowledgements

Table of Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ARVs	Antiretroviral therapy (can also be abbreviated as ART)
BC	British Columbia
BCCfE	British Columbia Centre for Excellence in HIV/AIDS
C +/-	An increase or decrease in a particular indicator for current time period compared to previous half-year
CD4	Cluster of differentiation 4, is a marker to identify a type of human T helper cell
DTES	Downtown Eastside, Vancouver
H +/-	An increase or decrease in a particular indicator for current time period compared to the historical time period (January 2008 – June 2010)
HIV	Human Immunodeficiency Virus
HSDA	Health Service Delivery Area
IDU	Injecting Drug Use
LHA	Local Health Area
mL	Milliliter
MSM	Men who have sex with men
POC	Point of Care HIV Test
PHSU	Public Health Surveillance Unit
S +/-	An increase or decrease in a particular indicator for current time period compared to STOP period
STOP	HIV/AIDS Seek and Treat for Optimal Prevention of HIV/AIDS
VCH	Vancouver Coastal Health (Authority)
vL	Viral Load
Y +/-	An increase or decrease, for a particular indicator, in current year-to-date values compared to the previous year-to-date
Q1	Quarter 1 in the calendar year
Q2	Quarter 2 in the calendar year
Q3	Quarter 3 in the calendar year
Q4	Quarter 4 in the calendar year
S1	The first half of the calendar year
S2	The second half of the calendar year

Cautions/Interpretations

- **The data sources used for this report are of a dynamic nature, and subject to change on a frequent basis. The results reported herein are current as of October 8, 2015.**

- **A number of indicators are susceptible to the longitudinal dynamic nature of the data used for this report, and therefore 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.**

- **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.**

- **Since the changes from Quarterly Report to Semi-Annual Report, definitions on several indicators have been changed or modified. Moreover, several indicator numbers also changed to meet the new structure of the Report. Please check the definitions in the Appendix A. The following indicators have definition changes: VCH45a, VCH45b, VCH16, VCH17, VCH17a, VCH19, VCH24, VCH23a, VCH23b, VCH23c, VCH46a, VCH49, VCH52, VCH54.**

- **In this report, the proportion will not be reported if the denominator is less than 5.**

Note: Please always refer to the most recent report.

Section 1. Population Monitoring Report Overview

VCH Semi-Annual 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. 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.

Summary Table

The summary table reports on the approved monitoring indicators, and is organized by testing, public health management and treatment phase of the patient journey. This table presents data from the current half-year for each indicator, and compares them to data from the preceding three half-year periods, the entire STOP HIV/AIDS pilot project period (July 1, 2010 to current), and to a historical baseline period (January 1, 2008 – June 30, 2010). The table also reports on:

- Counts (or proportions) for the current year to date, and
- Counts (or proportions) for the same time period in the previous year.

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

Additional Figures, Maps and Tables

Graphs, maps and tables, are 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 half-year.

Data Sources

The data sources collected and compiled for this report, are described in Appendix B. Individual HIV public health surveillance records were linked using deterministic methods to the BCCfE clinical monitoring and drug treatment program data, creating a unique longitudinal dataset of the HIV continuum within VCH. Of all known HIV diagnoses reported in Vancouver Coastal Health since May 2003, 89% were linked to clinical monitoring and drug treatment records. The remaining 11% are diagnoses who participated in non-nominal testing and are therefore unable to be linked, but may still be engaged in care. Those individuals from the BC CfE database who did not link to HIV surveillance records were primarily (88%) diagnosed before May 2003, the remaining 12% are likely the population of non-nominal testers. Comparative analyses of unlinked individuals to the linked population verify that the linked dataset is representative of the

greater population of all known HIV positive individuals across VCH on a number of sociodemographic, clinical and epidemiological characteristics. For more detailed information please refer to the Q1 2012 report (http://www.vch.ca/media/Q1 20_012-Monitoring-Report_STOP-HIV-AIDS.pdf).

Summary Table Results
S1 (January 1 – June 30, 2015)

Testing Indicators

- The number of POC tests from POC test sites engaged in STOP HIV/AIDS initiatives decreased significantly compared to the preceding periods, the average since STOP, and year to date. The number of new positives from POC tests decreased compared to the average since STOP and year to date [VCH1, VCH4a].

- Overall HIV lab testing volumes from VCH residents, or those who tested in VCH, continued to increase over the course of the STOP HIV/AIDS project. In S1 2015, volumes increased 53% compared to the average since STOP, and were 165% higher than the historical baseline [VCH8a].

- HIV lab test volumes from clinics in VCH and across all VCH HSDAs also continued to increase compared to the average since STOP and in comparison to the historical baseline [VCH8b]. Compared to the historical average, Richmond HSDA had the highest increase (364%), followed by Coastal Urban (190%), Vancouver (155%) and Coastal Rural (151%).

- HIV lab tests among residents of all HSDAs increased in comparison to the preceding periods as well to the average since STOP, the historical baseline and year-to-date [VCH11a]. Compared to the historical average, Richmond HSDA had the highest increase (349%), followed by Coastal Urban (174%), Coastal Rural (164%) and Vancouver (164%).

- HIV lab tests from non-VCH residents who tested in VCH [VCH11d] increased significantly compared to the preceding periods, the average since STOP, the historical baseline, and year-to-date.

- The number of newly reported HIV positives from VCH significantly increased in comparison to the preceding periods, increased compared to the average since STOP, and decreased compared to historical [VCH13a]. Eighty-nine percent of cases were reported among Vancouver residents.

- The percent positivity of HIV testing [VCH14a] significantly decreased in Vancouver HSDA compared to the average since STOP and the historical baseline. The decline in percent positivity since STOP may be attributed to the broader testing strategy that is generating a greater number of HIV tests in lower risk settings as well as the sustained increase in overall testing volumes. Due to a small number of positives in Richmond, Coastal Urban and Coastal Rural, the percent positivity is likely to fluctuate.

- The proportion of new HIV positive cases diagnosed with a CD4 count $>=$ 500 cells/mm^3 or at acute stage disease [VCH45a] is lower than the average since STOP and similar to the historical baseline. However, the changes were not statistically significant.

- The proportion of new HIV positive cases diagnosed with a CD4 count $<$ 200 cell/mm^3 [VCH45b] in Vancouver HSDA is lower than the average since STOP and the historical baseline. The proportion of cases reported in the rest of VCH (except Vancouver), with a CD4 count <200 cell/mm^3 should be interpreted with caution due to small case numbers.

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 available.

- The proportion of new positives with a record of public health follow-up decreased in comparison to the preceding periods [VCH16] and the average since STOP. It is important to note that the public health management indicators are based on the case diagnosis date and therefore are likely to change as follow-up is completed over time.

- The number of contacts elicited increased significantly compared to the preceding period, and decreased significantly compared to the average since STOP and year to date[VCH17].

- The average number of contacts elicited per positive case is similar to the preceding periods, the average since STOP and year-to-date [VCH17a]. An average of 3 contacts per case was elicited in the most recent period.

- The proportion of contacts notified decreased compared to the preceding periods and the average since STOP [VCH19]. In comparison with year to date in 2014, the proportion of contacts notified was significantly less.

- The proportion of notified contacts that were known to be previously HIV positive increased compared to the preceding period, the average since STOP and year to date, although not significantly [VCH24].

- The proportion of notified contacts known to be tested for HIV decreased compared to the preceding periods, is the same as the average since STOP and decreased significantly year to date in 2015 compared to 2014 [VCH23a].

- Six new HIV positive cases were diagnosed through public health follow-up during the most recent period, which is significantly higher than the preceding periods, the average since STOP and year to date [VCH23b].

- The percent positivity in the first half of 2015 was 14%, which is higher than the average since STOP and significantly higher than year to date [VCH23c].

Treatment Indicators

- The proportion of new diagnoses linked to care within 30 days in Vancouver HSDA is the lower than the average since STOP, although is higher than the historical baseline [VCH41]. Among the rest of VCH residents in this period, the proportion linked to care within 30 days was higher than average since STOP and the historical baseline. This should be interpreted with caution due to a small number of new positives in Richmond, Coastal Urban and Coastal Rural.

- The median time to linkage to HIV care in VCH was 7 days and remains below the average since STOP and the historical baseline [VCH44b].

- The proportion of HIV patients currently retained in care remained stable from the preceding periods, the average since STOP and year-to-date [VCH46]. 89% of Richmond residents were currently retained in care, followed by Coastal Rural (81%), Vancouver (80%) and Coastal Urban (80%).

- The proportion of patients not found in care did not change significantly in Vancouver HSDA when compared to the preceding periods, the average since STOP, the historical baseline and year-to-date [VCH47b]. The proportion of patients not found in care in Coastal Urban decreased slightly when compared to the preceding periods. In the most

recent period, 25% of Coastal Urban residents were not found in care, followed by Vancouver (19%), Richmond (14%) and Coastal Rural (5%).

- The proportion of patients currently prescribed ARVs significantly increased compared to the average since STOP and the historical baseline [VCH48]. Conversely, the proportion of patients who discontinued and did not restart ARVs decreased significantly compared to the average since STOP and the historical baseline [VCH49].

- The proportion of individuals newly taking ARVs and achieving viral suppression (viral load < 200 copies/mL) within 9 months of treatment within Vancouver HSDA is similar compared to the preceding periods, and the average since STOP, and year to date. In the rest of VCH (excluding Vancouver), the proportion suppressed within 9 months of initiating treatment increased compared to the average since STOP and historically although not significantly [VCH51]. *It is important to note that this indicator is influenced by a lag in data capture.*

- The proportion of individuals on ARVs achieving viral suppression with viral load <200 copies/mL increased significantly compared to the historical baseline [VCH52]. The greatest proportion of individuals achieving viral suppression was observed in Coastal Urban HSDA with 96% followed by Richmond with 94%.

- The mean monitored viral load of all known HIV positive individuals in VCH was significantly lower than the average since STOP, the historical baseline, and year to date [VCH53].

- The proportion of individuals with a viral load >200 copies/ml (not suppressed) decreased significantly when compared to the average since STOP, the historical baseline and year to date [VCH54].

Indicator Number		Indicator Name	Counts by Half-Year				STOP HIV/AIDS (July 1, 2010 to date)			Historical Baseline (Jan 1, 2008 to Jun 30, 2010)			Year to Date Cases		Significance
			Jan-Jun 2015	Jul-Dec 2014	Jan-Jun 2014	Jul-Dec 2013	Avg	Min	Max	Avg	Min	Max	Year 2015	Year 2014	
	VCH1	Number of POC tests	3252	3724	3728	3697	3947	792	8669	N/A	N/A	N/A	3252	3728	C-S-Y-
	VCH4a	Number of new true positive POC tests	16	14	22	17	20	3	41	N/A	N/A	N/A	16	22	C+S-Y-
	VCH8a	Overall number of HIV lab tests (either from VCH residents or those who tested at a VCH clinic)	101745	94079	85565	72758	66548	39388	101745	38393	37561	39578	101745	85565	S+H+Y+
	VCH8b	Number of HIV lab tests from all clinics in VCH	98678	91391	83534	71156	64445	37468	98678	36406	35560	37576	98678	83534	S+H+Y+
	VCH8b.1	Vancouver	75113	69482	66301	60888	52295	30354	75113	29440	28683	30529	75113	66301	S+H+Y+
	VCH8b.2	Richmond	10800	10592	8601	3749	5103	2349	10800	2329	2227	2420	10800	8601	S+H+Y+
	VCH8b.3	Coastal Urban	8603	7126	5466	3985	4535	3053	8603	2975	2898	3105	8603	5466	C+S+H+Y+
	VCH8b.4	Coastal Rural	4162	4191	3166	2534	2513	1630	4191	1661	1619	1731	4162	3166	S+H+Y+
Testing Indicators	VCH11a*	Number of HIV lab tests from residents of VCH	87383	81221	73397	62144	56062	32014	87383	31017	30243	32007	87383	73397	S+H+Y+
	VCH11a.1*	Vancouver	60821	56422	53312	49243	41730	23666	60821	23052	22356	23837	60821	53312	S+H+Y+
	VCH11a.2*	Richmond	12637	12274	10109	5009	6203	2962	12637	2813	2674	2916	12637	10109	S+H+Y+
	VCH11a.3*	Coastal Urban	9115	7704	6252	4894	5208	3448	9115	3331	3261	3416	9115	6252	C+S+H+Y+
	VCH11a.4*	Coastal Rural	4810	4821	3724	2998	2921	1855	4821	1821	1773	1872	4810	3724	S+H+Y+
	VCH11d	Number of HIV lab tests from known non-residents of VCH, who tested in VCH	14362	12858	12168	10614	10486	7374	14362	7376	7275	7623	14362	12168	C+S+H+Y+
	VCH13a*	Number of positive HIV diagnoses for VCH residents	80	60	86	65	77	60	98	87	77	100	80	86	C+
	VCH13a.1*	Vancouver	71	52	80	59	70	52	87	80	72	94	71	80	C+H-Y-
	VCH13a.2*	Richmond	7	-	-	-	-	-	7	-	-	5	7	-	C+S+H+Y+
	VCH13a.3*	Coastal Urban	-	-	-	-	-	-	-	-	-	-	-	-	C-S-H-Y-
	VCH13a.4*	Coastal Rural	-	-	-	-	-	-	-	-	-	-	-	-	C-S-H+
	VCH14a	Percent positivity (%) of VCH residents	0.09	0.07	0.12	0.10	0.14	0.07	0.27	0.28	0.25	0.33	0.09	0.12	S-H-
	VCH14a.1	Vancouver	0.12	0.09	0.15	0.12	0.17	0.09	0.32	0.35	0.32	0.42	0.12	0.15	S-H-
	VCH14a.2	Richmond	0.06	-	-	-	-	-	0.17	-	-	0.17	0.06	-	
	VCH14a.3	Coastal Urban	-	-	-	-	-	-	-	-	-	-	-	-	
	VCH14a.4	Coastal Rural	-	-	-	-	-	-	-	-	-	-	-	-	
	VCH45a	Proportion of all VCH HIV patients with CD4 count > 500 cells/mm3 or acute stage at diagnosis (%)	42	42	53	55	47	40	55	41	35	53	42	53	
	VCH45a.1	Vancouver	47	48	56	55	49	42	56	42	34	56	47	56	
	VCH45a.2	Rest of VCH	50	17	25	50	30	0	50	25	0	67	50	25	
	VCH45b	Proportion of all VCH HIV patients with CD4 count < 200 cells/mm3 at diagnosis (%)	17	18	13	22	19	12	25	22	16	33	17	13	
	VCH45b.1	Vancouver	15	17	10	20	18	9	26	21	14	30	15	10	
	VCH45b.2	Rest of VCH	0	33	25	50	25	0	50	44	0	100	0	25	

Notes

- *This includes testers or positives who have known residential information within VCH and those who test in VCH but do not have available residential information.
- Data used for this report are longitudinal and of 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.

Public **Health** Surveillance Unit

Interpretation

- C +/- represents an increase or decrease for current time period compared to preceding period
- 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 (January 2008-June 2010)
- Y +/- represents an increase or decrease for current year-to-date compared to previous year-to-date
- "-"represents a suppressed cell where the value is derived from a number of individuals less than 5 in a defined region.
- STOP HIV/AIDS average is the average of all half-years since July 1, 2010, with the minimum and maximum during all half-years since STOP. This also applies to historical baseline average.

Indicator Number		Indicator Name	Counts by Half-Year				STOP HIV/AIDS (July 1, 2010 to date)			Historical Baseline (Jan 1, 2008 to Jun 30, 2010)			Year to Date Cases		Significance
			Jan-Jun 2015	Jul-Dec 2014	Jan-Jun 2014	Jul-Dec 2013	Avg	Min	Max	Avg	Min	Max	Year 2015	Year 2014	
Public Health Management Indicators	VCH 16	Proportion of new positives with record of public health follow-up	86	93	95	95	94	86	100	N/A	N/A	N/A	86	95	
	VCH17	Number of contacts elicited	241	157	312	243	274	157	395	N/A	N/A	N/A	241	312	C+S-Y-
	VCH17a	Average number of contacts elicited per positive case	3	3	4	4	4	3	5	N/A	N/A	N/A	3	4	
	VCH19	Proportion of contacts notified (%)	38	38	48	43	44	34	57	N/A	N/A	N/A	38	48	Y-
	VCH24	Proportion of notified contacts who were known to be previously HIV positive (%)	22	15	19	19	18	11	22	N/A	N/A	N/A	22	19	
	VCH23a	Proportion of notified contacts tested for HIV (%)	58	60	76	67	58	48	76	N/A	N/A	N/A	58	76	Y-
	VCH23b	Number of notified contacts who tested HIV positive	6	4	3	5	5	1	7	N/A	N/A	N/A	6	3	C+S+Y+
	VCH23c	Percent positivity (%) due to Contact Tracing	14	13	3	9	8	2	14	N/A	N/A	N/A	14	3	Y+

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Vancouver CoastalHealth — Promoting wellness. Ensuring care.

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		Jan-Jun 2015	Jul-Dec 2014	Jan-Jun 2014	Jul-Dec 2013	Avg	Min	Max	Avg	Min	Max	Year 2015	Year 2014	
VCH41	Proportion of new diagnoses within VCH linked to care within 30 days of diagnosis (%)	75	70	79	86	76	68	86	64	54	71	75	79	
VCH41.1	Vancouver	73	67	79	86	76	67	87	64	56	71	73	79	
VCH41.2	Rest of VCH	89	88	83	83	83	71	89	60	33	70	89	83	
VCH44b	Time to linkage to HIV care among those newly diagnosed with HIV within VCH (median days)	7	7	7	6	8	6	10	12	10	13	7	7	H-
VCH44b.1	Vancouver	7	6	7	6	7	6	10	11	9	13	7	7	H-
VCH44b.2	Rest of VCH	10	12	7	8	11	7	15	14	8	24	10	7	C-H-Y+
VCH46a	Proportion of HIV patients who are currently retained in care within VCH (%)	80	81	81	82	81	80	82	78	77	79	80	81	
VCH46a.1	Vancouver	80	81	81	81	81	80	82	78	77	79	80	81	
VCH46a.2	Richmond	89	91	92	88	89	86	92	95	90	100	89	92	
VCH46a.3	Coastal Urban	80	78	77	79	79	76	83	84	78	88	80	77	
VCH46a.4	Coastal Rural	81	81	84	93	81	65	93	66	53	78	81	84	
VCH47b	Proportion of matched HIV patients not found in care within VCH (%)	18	18	18	18	17	16	18	19	18	20	18	18	
VCH47b.1	Vancouver	19	18	18	18	18	16	19	19	18	20	19	18	
VCH47b.2	Richmond	14	13	10	12	11	7	14	6	3	9	14	10	
VCH47b.3	Coastal Urban	25	27	28	27	23	13	28	16	9	21	25	28	
VCH47b.4	Coastal Rural	5	6	0	0	6	0	13	20	5	35	5	0	
VCH48	Proportion of patients who are currently prescribed ARVs within VCH (%)	69	69	69	68	66	58	69	48	41	55	69	69	S+H+
VCH48.1	Vancouver	69	69	69	68	66	57	69	47	40	54	69	69	H+
VCH48.2	Richmond	78	82	85	81	79	67	85	66	48	76	78	85	
VCH48.3	Coastal Urban	70	64	63	63	63	59	70	55	53	57	70	63	
VCH48.4	Coastal Rural	87	84	85	87	82	68	88	61	52	68	87	85	H+
VCH49	Proportion of patients who have discontinued and currently not restarted ARVs within VCH (%)	11	12	13	14	16	11	27	39	31	49	11	13	S-H-
VCH49.1	Vancouver	11	12	13	14	16	11	27	40	31	50	11	13	S-H-
VCH49.2	Richmond	10	10	7	12	13	7	28	27	18	46	10	7	
VCH49.3	Coastal Urban	12	19	21	20	19	12	22	25	21	30	12	21	
VCH49.4	Coastal Rural	5	12	6	6	11	5	25	29	23	35	5	6	H-
VCH51	Proportion of individuals within VCH newly taking ARVs who are virally suppressed with viral load less than 200 copies/mL within 9 months since treatment start (%)	92	95	93	91	92	88	95	90	89	91	92	93	
VCH51.1	Vancouver	91	95	93	91	92	88	95	90	87	91	91	93	
VCH51.2	Rest of VCH	100	93	94	94	95	89	100	93	85	100	100	94	
VCH52	Proportion of all individuals on ARVs who are currently virally suppressed with viral load less than 200 copies/mL within VCH (%)	86	87	86	85	84	80	87	78	74	81	86	86	H+
VCH52.1	Vancouver	85	86	86	85	84	79	86	78	74	81	85	86	H+
VCH52.2	Richmond	94	95	89	96	87	69	96	80	71	89	94	89	H+
VCH52.3	Coastal Urban	96	89	93	88	90	84	96	86	72	93	96	93	
VCH52.4	Coastal Rural	91	93	86	78	82	67	93	85	69	100	91	86	
VCH53	Mean monitored viral load (copies/mL) of all known HIV positive individuals within VCH	60	61	69	74	93	60	188	393	225	779	60	69	S-H-Y-
VCH53.1	Vancouver	62	61	70	75	95	61	193	417	235	819	62	70	S-H-Y-
VCH53.2	Richmond	60	36	53	50	69	36	179	266	112	635	60	53	C+S-H-Y+
VCH53.3	Coastal Urban	39	68	72	57	75	39	157	178	102	555	39	72	C-S-H-Y-
VCH53.4	Coastal Rural	41	83	43	144	92	41	213	170	89	437	41	43	C-S-H-
VCH54	Proportion of all individuals with viral load greater than 200 copy/mL within VCH (%)	14	15	18	19	22	14	36	47	39	58	14	18	S-H-Y-
VCH54.1	Vancouver	15	15	18	19	23	15	37	48	40	59	15	18	S-H-Y-
VCH54.2	Richmond	12	5	13	6	17	5	37	42	29	50	12	13	H-
VCH54.3	Coastal Urban	6	16	13	17	18	6	31	32	22	55	6	13	H-
VCH54.4	Coastal Rural	5	18	16	32	24	5	41	40	33	53	5	16	S-H-

(Left margin vertical label: Treatment Indicators)

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Notes
- The analyses for most of treatment indicators are based on the individuals in a linked dataset of PHSU HIV Surveillance data and BCCfE Drug Treatment Program data. Except for indicators VCH41 and VCH44b, which use the full PHSU HIV Surveillance dataset and BCCfE Drug Treatment Program Data.
- 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.
- Treatment indicator denominators are described in appendix A and change overtime as new diagnoses are added and indicator restrictions adjust case population. For an example of case volume; denominators for S2 2013 VCH48 were as follows: Vancouver (n=1,909), Richmond (n=63), Coastal Urban (n=71), Coastal Rural (n=39).

Interpretation
- C +/- represents an increase or decrease for current time period compared to preceding period
- 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)
- Y +/- represents an increase or decrease for current year-to-date compared to previous year-to-date

- STOP HIV/AIDS average is the average of all half-years since July 1, 2010, with the minimum and maximum during all half-years since STOP. This also applies to historical baseline average.

Section 2. Testing Indicators

Figures, Maps and Tables

Figure 1. Number and Percent Positivity of HIV POC Tests

The number of POC tests decreased significantly in the first half of 2015 compared to the preceding periods, the average since STOP and year to date. Additionally, the percent positivity increased compared to the preceding period and is similar to the average since STOP.

Table 1. Number of HIV Lab Tests by HSDA/LHA of Testing Clinic

HIV Lab tests in all HSDAs, expect Coastal Rural, continued to increase. Compared to the most recent previous half year, Vancouver LHAs including City Centre, Westside, South, Northeast and Midtown experienced marginal increases in testing numbers while a small decline in Vancouver DTES was observed. HIV test volumes from clinics in North Vancouver had the greatest increase with 69% year to date in 2015 compared to 2014, followed by Howe Sound (39%).

Maps 1-3. Mean Monthly HIV Lab Tests per 10,000 population among VCH residents

Since the expansion, average monthly HIV testing rates continued to increase across all of the HSDAs/LHAs. Compared to the average rate in the STOP Pilot period, most noticeable increases were observed in Powell River (174%), followed by Richmond (89%) and Howe Sound (79%).

Figure 2. Number and Percent Positivity of HIV Lab Tests among VCH Residents

The number of HIV lab tests among residents of VCH increased steadily from the initiation of STOP HIV/AIDS, with the highest volumes observed in S1 2015. Along with this steady increase in HIV lab tests, there is a declining trend in percent positivity.

Figure 3. Number and Percent Positivity of HIV Lab Tests among VCH Residents by HSDA

The trend in HIV lab testing in Vancouver HSDA was similar to VCH overall as the majority of tests were conducted among Vancouver residents.

Testing volumes increased substantially in Richmond since 2014 while a gradual increase was observed in Coastal Urban since 2014 and a slight increase was observed in Coastal Rural among known residents of each HSDA. Due to the small number of identified positives, the percent positivity fluctuates by year in Richmond, Coastal Urban and Coastal Rural.

Table 2. Monthly Average of HIV Lab Tests, Population Rate of HIV Lab Tests, HIV Positives and Percent Positivity among VCH residents by HSDA/LHA

Significant increases in the monthly average and rate of HIV lab tests were seen across most HSDAs/LHAs since April 2013. HIV tests increased by 221% in Powell River compared to the historical baseline, followed by Howe Sound (154%), and Richmond (126%).

No significant differences were observed in the monthly average of new HIV positives or in the percent positivity across the whole region.

Table 3, 4. Percent Positivity of HIV Lab Tests among VCH Residents by Gender and Age Group

Vancouver HSDA (Table 3)

The percent positivity for HIV testing is highest among males aged 20-29 in S1 2015. The percent positivity in this age group increased from 0.37% in S2 2014 to 0.8% in S1 2015. Furthermore among males aged 30-39, percent positivity decreased compared to the preceding half-year. In comparison with historical baseline, the percent positivity decreased among all males.

While the percent positivity among female age groups are lower overall compared with males, the highest percent positivity was observed among those aged 30-39 and 50-59 in the first half of 2015. Percent positivity among females of all age groups decreased compared to the historical average.

Rest of VCH (Table 4)

The percent positivity across age groups among males continues to fluctuate each period due to low volumes of new diagnoses. The overall percent positivity for this most recent period among men is below the average since STOP HIV/AIDS and the historical baseline.   The age group with the highest percent positivity in this period was among men aged 30-39.

The percent positivity across age groups among females continues to fluctuate each period due to low volumes of new diagnoses. Overall, the percent positivity among females for this most recent period is higher than the yield since STOP HIV/AIDS. However, this should be interpreted with caution due to the small number of identified positives among females.

Figure 4. Proportion of New HIV Positives by Gender and Males/Females Ratio by Year of Diagnosis

Vancouver HSDA:

More males were diagnosed compared to females in the first half year of 2015 (13 males to 1 female). The majority of new diagnoses (93%) in Vancouver continue to be among males.

Rest of VCH:

Due to the very small number of females diagnosed with HIV in rest of VCH residents, no stable trend in proportion is observed, and this should be interpreted with caution.

Table 5, 6. Proportion of HIV positives by Gender, Exposure and Year of Diagnosis

Vancouver HSDA (Table 5):

More new diagnoses were seen among males with MSM exposure in 2014-2015 compared to all other exposure groups. The proportion of new diagnoses among MSM has increased steadily since 2003-2005, while those with IDU exposure and heterosexual exposure has declined.

The proportion of females with IDU exposure decreased in 2014-2015 compared to previous years and females with heterosexual exposure decreased compared to 2010-2013.

Rest of VCH (Table 6):

For males, the proportion of new diagnoses among MSM in 2014-2015 has declined since 2010-2013, while those with heterosexual exposure have increased.

Due to the very small number of females diagnosed with HIV in rest of VCH residents, no stable trend in proportion is observed, and this should be interpreted with caution.

Figure 5, 6. Number and Proportion of Patients' CD4 Cell Count and Disease Stage at Diagnosis by Year of Diagnosis

In the first half of 2015, the number of patients newly diagnosed with HIV increased compared to the preceding half year. However, there is an overall declining trend in number of new positives since 2003(Figure 5).

In the first half of 2015, the proportion of new diagnoses with a CD4 count > 500 or acute stage disease at time of diagnosis remained stable compared to the preceding period at 44% and declined from 57% year to date in 2014. Furthermore, an decrease in the proportion of HIV patients diagnosed with a CD4 count <200 cells/mm^3 in the first half of 2015 was observed compared to the preceding period (Figure 6).

Figure 7. Proportion and Ratio of Patients Diagnosed with CD4 > 500/Acute Stage and CD4 < 200 by Year of Diagnosis

The proportion of patients diagnosed with a CD4 count <200 cells/mm^3 in the first half of 2015 is slightly higher than the proportion in 2014, but is still following a downward trend observed since 2006. The proportion of patients diagnosed with CD4 counts>=500 cells/mm^3 or diagnosed at acute stage decreased compared to 2014 and is the lowest observed since 2010. Therefore, the ratio of those diagnosed with a CD4>500/acute stage vs. a CD4 < 200 has declined to 2.8:1 compared to a peak in 2014 of 3.5:1.

Maps 4, 5. Median CD4 Cell Count (cells/mm^3) at diagnosis for HIV positive individuals

Compared to the historical baseline (Map 4), the median CD4 cell count at diagnosis has declined for residents of Richmond and Coastal Rural HSDAs as well as Vancouver North East and Vancouver South LHAs since the STOP initiative. Meanwhile the median CD4 cell count at diagnosis has increased in Coastal Urban HSDA and Vancouver City Centre, Vancouver DTES, Vancouver Westside, and Vancouver Midtown LHAs. (Map 5).

Figure 1. Number and Percent Positivity of HIV POC Tests
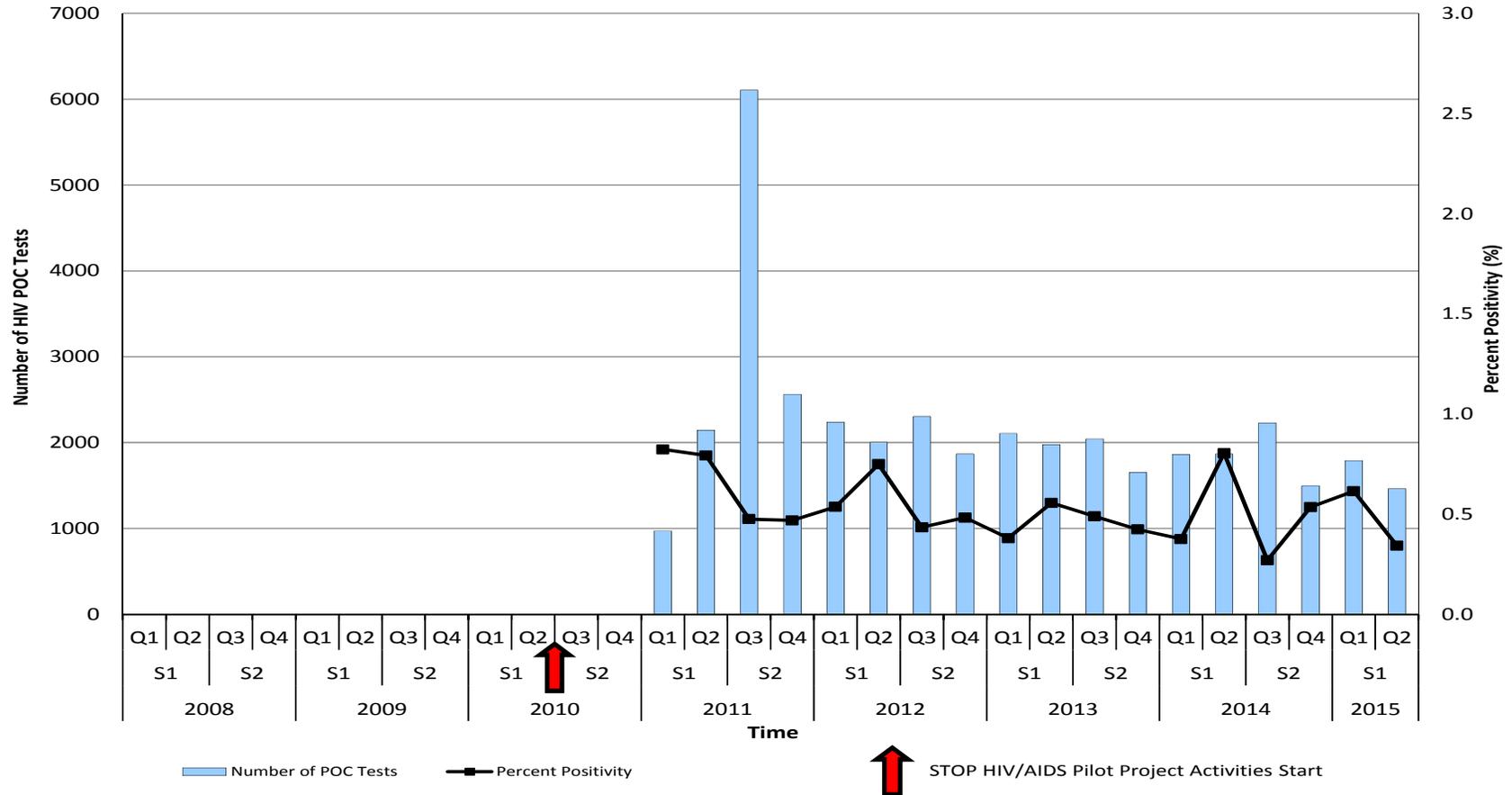
POC test counts include only volumes reported from sites engaged in STOP HIV/AIDS activities.
POC positive test counts include only positive tests reported to VCH CDC Department HIV Nurse.
Source: HIV Point of Care (POC) Data.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 19, 2015.

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Table 1. Number of HIV Lab Tests by HSDA/LHA of Testing Clinic

Region	Counts				STOP HIV/AIDS (July 1, 2010 to date)			Historical Baseline (Jan 1, 2008 to Jun 30, 2010)			Year to Date		Significance
	Jan-Jun 2015	Jul-Dec 2014	Jan-Jun 2014	Jul-Dec 2013	Avg	Min	Max	Avg	Min	Max	Year 2015	Year 2014	
Richmond	10800	10592	8601	3749	5103	2349	10800	2329	2227	2420	10800	8601	S+H+Y+
Coastal Urban	8603	7126	5466	3985	4535	3053	8603	2975	2898	3105	8603	5466	C+S+H+Y+
LHA 44 North Vancouver	7326	5990	4333	3163	3700	2485	7326	2365	2341	2422	7326	4333	C+S+H+Y+
LHA45 West Vancouver-Bowen Island	1277	1136	1133	822	835	568	1277	611	553	683	1277	1133	C+S+H+Y+
Coastal Rural	4162	4191	3166	2534	2513	1630	4191	1661	1619	1731	4162	3166	S+H+Y+
LHA 46 Sunshine Coast	1239	1187	925	775	689	397	1239	400	375	438	1239	925	S+H+Y+
LHA 47 Powell River	1107	1526	892	435	596	309	1526	309	296	333	1107	892	S+H+Y+
LHA 48 Howe Sound	1628	1333	1170	1185	1093	782	1628	853	815	903	1628	1170	C+S+H+Y+
LHA 49 Bella Coola Valley	121	100	113	71	81	60	121	50	37	63	121	113	C+S+H+
LHA 83 Central Coast	67	45	66	68	53	40	68	49	43	58	67	66	C+S+H+
Vancouver	75027	69475	66304	60892	52267	30284	75027	29283	28455	30441	75027	66304	S+H+Y+
LHA 161 City Centre	50507	46211	43254	40093	33636	18193	50507	17151	16332	18205	50507	43254	S+H+Y+
LHA 162 DTES	3796	3817	4048	3779	3665	2812	4274	2729	2519	3028	3796	4048	H+
LHA 163 North East	3412	3367	3675	3146	2844	1630	3675	1685	1600	1724	3412	3675	S+H+
LHA 164 Westside	6553	6530	6082	5723	4945	3255	6553	3138	3069	3210	6553	6082	S+H+
LHA 165 Midtown	6294	5094	4743	3995	3828	2477	6294	2643	2481	2755	6294	4743	C+S+H+Y+
LHA 166 South	4465	4456	4502	4156	3351	1865	4508	1938	1798	2038	4465	4502	S+H+
Total	98678	91391	83539	71163	64446	37468	98678	36406	35560	37576	98678	83539	S+H+Y+

Source: Provincial Public Health Microbiology and Reference Laboratory (Misys Laboratory Database) & Providence Health Care Virology Laboratory.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 19, 2015.

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Mean Monthly HIV Lab Tests per 10,000 Population by LHA

Map 1. Historical Period
(January 2008 – June 2010)
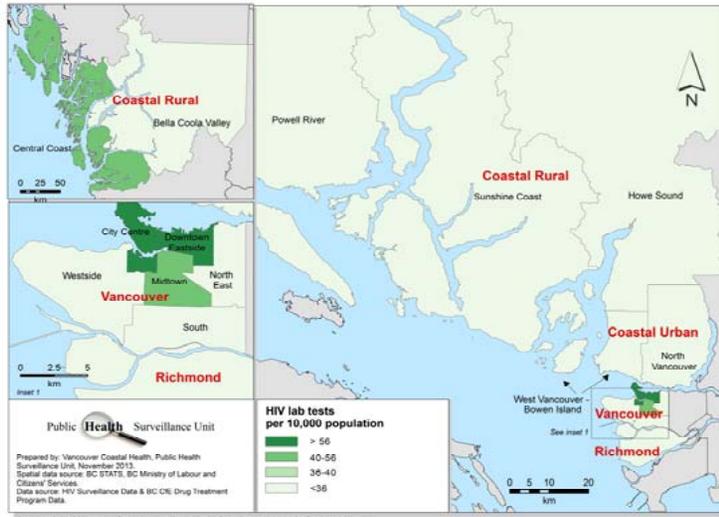
Map 2. Stop Pilot
(July 2010 – March 2013)
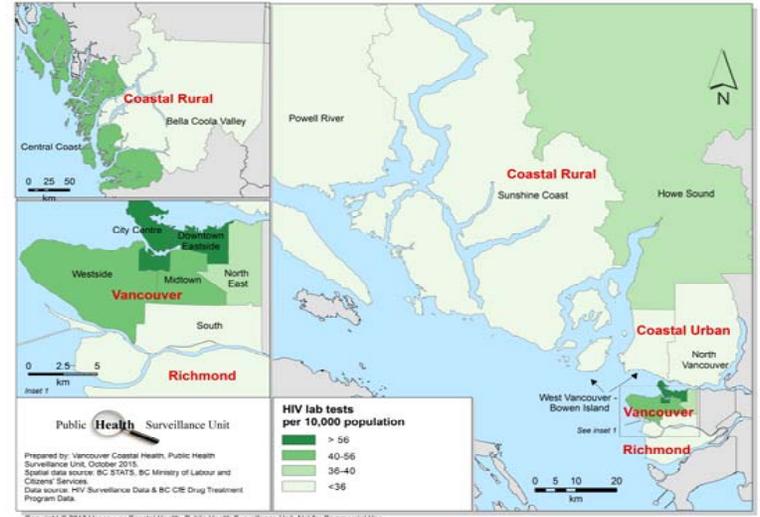
Map 3. Stop Expansion
(Apr 2013 – June 2015)
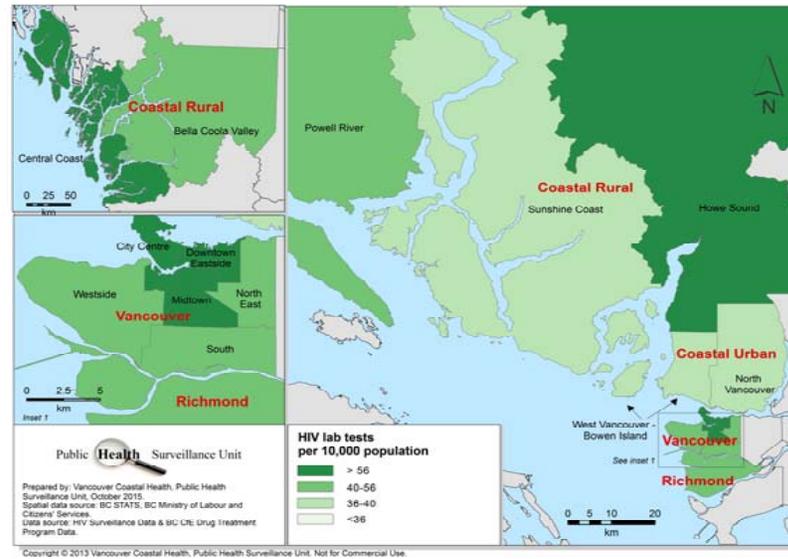
Figure 2. Number and Percent Positivity of HIV Lab Tests among VCH Residents
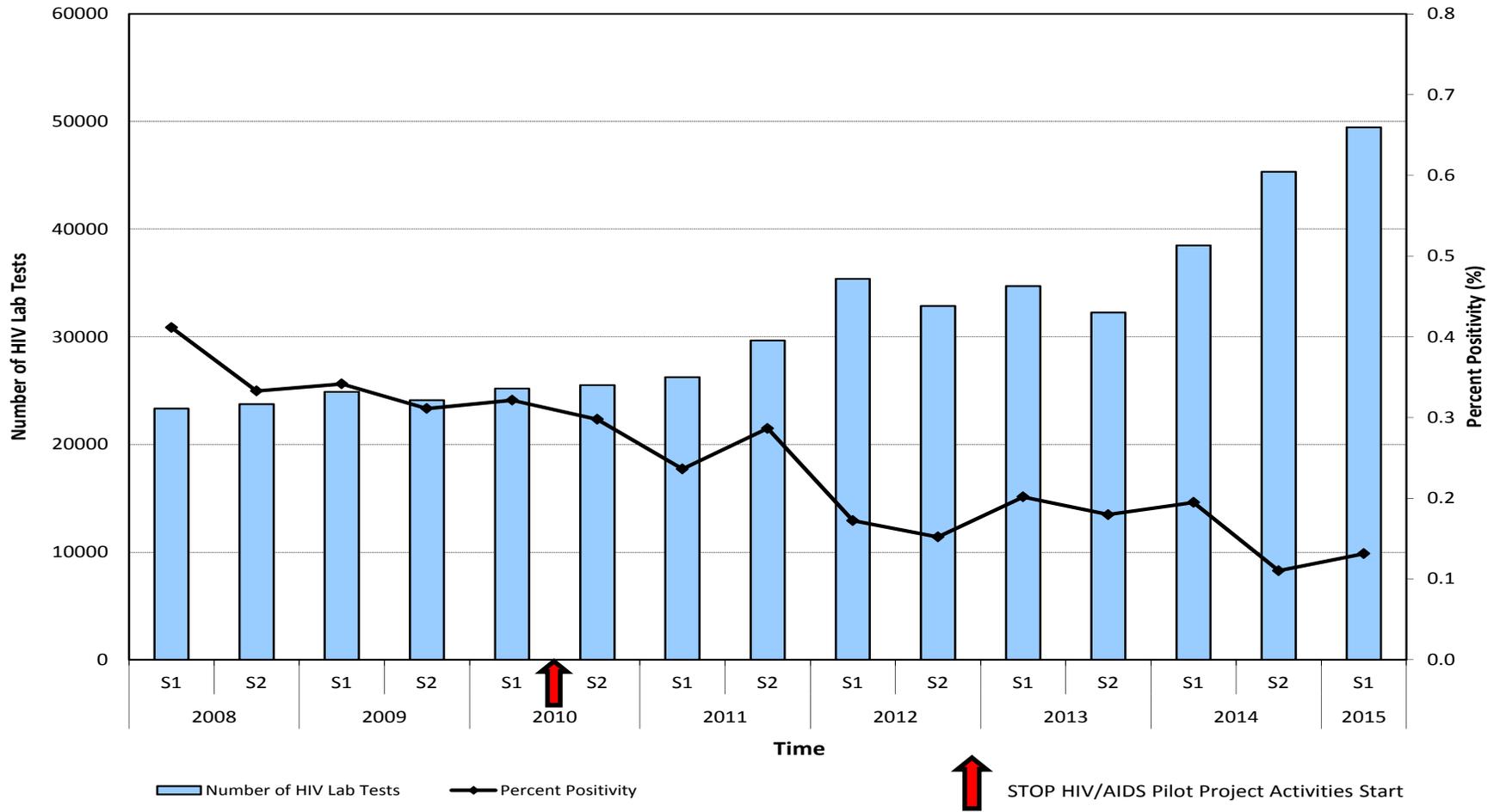
Source: Public Health Surveillance Unit (HIV Surveillance Data, Provincial Public Health Microbiology and Reference Laboratory (Misys Laboratory Database) & Providence Health Care Virology Laboratory Database.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 19, 2015.

Figure 3. Number and Percent Positivity of HIV Lab Tests among VCH Residents by HSDA
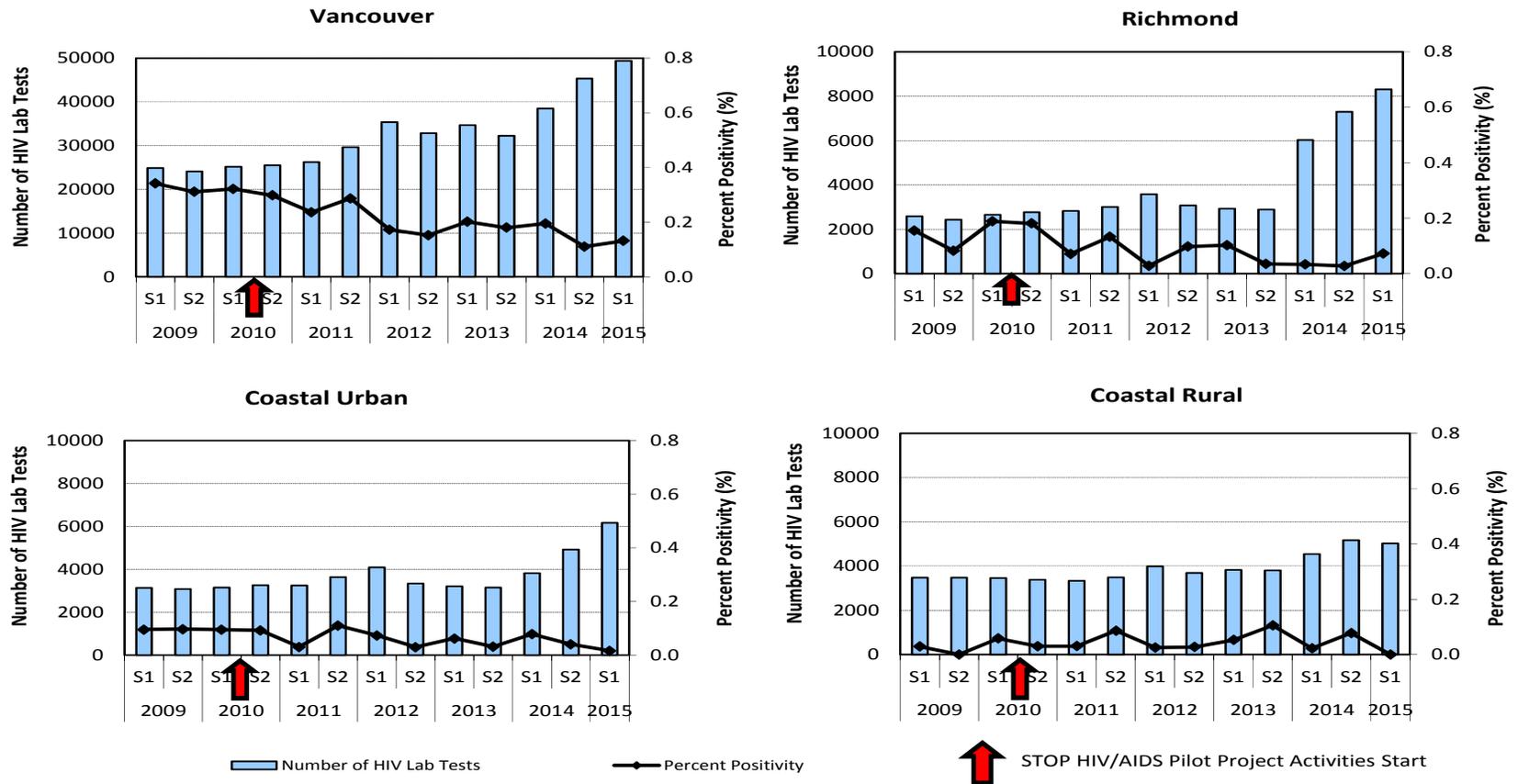
Note: Axis values are not equal across all graphs. Compare test volumes with caution.
Source: Public Health Surveillance Unit (HIV Surveillance Data, Provincial Public Health Microbiology and Reference Laboratory (Misys Laboratory Database) & Providence Health Care Virology Laboratory Database.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 19, 2015

Table 2. Monthly Average of HIV Lab Tests, Population Rate of HIV Lab Tests, HIV Positives and Percent Positivity among VCH Residents by HSDA/LHA

Region	HIV Lab Tests			HIV Lab Tests per 10,000 population			Positive HIV Lab Tests			Percent Positivity		
	Stop Expansion (Apr 2013 to date)	STOP Pilot (July 2010-Mar 2013)	Historical (Jan 2008-Jun 2010)	Stop Expansion (Apr 2013 to date)	STOP Pilot (July 2010-Mar 2013)	Historical (Jan 2008-Jun 2010)	Stop Expansion (Apr 2013 to date)	STOP Pilot (July 2010-Mar 2013)	Historical (Jan 2008-Jun 2010)	Stop Expansion (Apr 2013 to date)	STOP Pilot (July 2010-Mar 2013)	Historical (Jan 2008-Jun 2010)
Richmond	963	506	426	48.2	25.5	22.2	0.4	0.5	0.5	0.0	0.1	0.1
Coastal Urban	499	453	434	25.2	23.1	22.9	0.1	0.2	0.3	0.0	0.0	0.1
LHA 44 North Vancouver	537	438	395	37.2	30.6	28.6	0.1	0.2	0.5	0.0	0.0	0.1
LHA45 West Vancouver- Bowen Island	192	141	118	36.0	26.6	22.9	0.2	0.2	0.0	0.1	0.2	0.0
Coastal Rural	758	599	568	81.5	65.0	64.4	0.4	0.2	0.1	0.0	0.0	0.0
LHA 46 Sunshine Coast	118	82	71	38.7	27.1	24.1	0.0	0.0	0.1	0.0	0.0	0.1
LHA 47 Powell River	103	38	32	51.1	18.7	16.2	0.2	0.0	0.0	0.2	0.1	0.0
LHA 48 Howe Sound	244	134	96	64.5	36.0	27.8	0.1	0.1	0.0	0.0	0.1	0.0
LHA 49 Bella Coola Valley	13	10	6	45.2	32.6	22.2	0.0	0.0	0.0	0.0	0.0	0.0
LHA 83 Central Coast	12	8	7	79.2	52.8	47.6	0.0	0.1	0.0	0.0	0.8	0.0
Vancouver	4335	3368	2534	63.3	49.9	39.5	9.6	9.3	12.3	0.2	0.3	0.5
LHA 161 City Centre	1010	861	666	81.6	70.6	56.4	2.9	3.1	4.2	0.3	0.4	0.6
LHA 162 DTES	707	547	378	97.6	76.4	58.8	2.1	1.5	1.9	0.3	0.3	0.5
LHA 163 North East	514	413	328	47.3	38.5	31.5	0.6	0.8	0.7	0.1	0.2	0.2
LHA 164 Westside	760	571	438	53.9	41.1	32.9	0.5	0.5	0.4	0.1	0.1	0.1
LHA 165 Midtown	633	482	364	63.4	49.7	41.4	0.7	0.7	0.6	0.1	0.1	0.2
LHA 166 South	699	491	358	50.3	35.7	26.8	0.6	0.7	0.7	0.1	0.1	0.2
Total*	6785	5052	4041	57.7	43.5	36.4	10.7	10.5	13.4	0.2	0.2	0.3

*Total may not equal to sum of all LHAs due to missing assignment of LHA coding in original data.
Source: Public Health Surveillance Unit (HIV Surveillance Data), Provincial Public Health Microbiology and Reference Laboratory (Misys Laboratory Database) & Providence Health Care Virology Laboratory.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 19, 2015.

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Table 3. Percent Positivity among _Vancouver_ Residents by Gender and Age Group

Gender	Age	Current Half-Year	Previous Half-Years		STOP HIV-AIDS	Historical Baseline	Year to Date	
		Jan 2015-Jun 2015	Jul 2014-Dec 2014	Jan 2014-Jun 2014	Jul 2010-Jun 2015	Jan 2008-Jun 2010	2015	2014
Male	0-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	10-19	0.00	0.00	0.00	0.25	0.15	0.00	0.00
	20-29	0.80	0.37	1.14	0.64	0.84	0.80	1.14
	30-39	0.36	0.48	0.80	0.67	1.15	0.36	0.80
	40-49	0.64	0.41	0.50	0.75	1.61	0.64	0.50
	50-59	0.41	0.42	0.47	0.48	0.88	0.41	0.47
	60+	0.10	0.02	0.16	0.13	0.44	0.10	0.16
	Subtotal*	0.38	0.28	0.53	0.50	1.05	0.38	0.53
Female	0-9	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	10-19	0.00	0.00	0.00	0.00	0.16	0.00	0.00
	20-29	0.00	0.04	0.00	0.04	0.07	0.00	0.00
	30-39	0.05	0.05	0.03	0.04	0.08	0.05	0.03
	40-49	0.00	0.05	0.11	0.08	0.15	0.00	0.11
	50-59	0.06	0.00	0.08	0.04	0.43	0.06	0.08
	60+	0.02	0.00	0.05	0.03	0.11	0.02	0.05
	Subtotal*	0.03	0.03	0.04	0.04	0.10	0.03	0.04

*Subtotal may not equal to sum of all LHAs due to missing values in the original data.
Source: Public Health Surveillance Unit (HIV Surveillance Data), Provincial Public Health Microbiology and Reference Laboratory (Misys Laboratory Database) & Providence Health Care Virology Laboratory.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 19, 2015.

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Gender	Age	Current Half-Year	Previous Half-Years		STOP HIV-AIDS	Historical Baseline	Year to Date	
		Jan 2015-Jun 2015	Jul 2014-Dec 2014	Jan 2014-Jun 2014	Jul 2010-Jun 2015	Jan 2008-Jun 2010	2015	2014
Male	**0-9**	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	10-19	0.00	0.00	0.00	0.07	0.13	0.00	0.00
	20-29	0.07	0.00	0.00	0.11	0.09	0.07	0.00
	30-39	0.21	0.32	0.09	0.13	0.07	0.21	0.09
	40-49	0.00	0.00	0.10	0.11	0.33	0.00	0.10
	50-59	0.00	0.15	0.09	0.17	0.18	0.00	0.09
	60+	0.03	0.00	0.05	0.06	0.21	0.03	0.05
	Subtotal*	0.06	0.08	0.06	0.11	0.15	0.06	0.06
Female	**0-9**	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	10-19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20-29	0.00	0.00	0.00	0.00	0.01	0.00	0.00
	30-39	0.00	0.09	0.05	0.02	0.02	0.00	0.05
	40-49	0.07	0.00	0.00	0.03	0.09	0.07	0.00
	50-59	0.07	0.00	0.10	0.04	0.07	0.07	0.10
	60+	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Subtotal*	0.02	0.02	0.03	0.01	0.03	0.02	0.03

*Subtotal may not equal to sum of all LHAs due to missing values in the original data.
Source: Public Health Surveillance Unit (HIV Surveillance Data), Provincial Public Health Microbiology and Reference Laboratory (Misys Laboratory Database) & Providence Health Care Virology Laboratory.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 19, 2015.

Public Health Surveillance Unit

Source: Public Health Surveillance Unit (HIV Surveillance Data).
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 19, 2015.

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**Table 5. Proportion of HIV Positives
By Gender, Exposure and Year of Diagnosis
*(Vancouver HSDA)***

Providence
HEALTH CARE
How you want to be treated.

Gender	Exposure	Year of Diagnosis			
		2003-2005	**2006-2009**	**2010-2013**	**2014-2015**
Male	**MSM**	62.6	68.9	73.9	76.9
	MSM/IDU	5.6	4.1	2.7	0.5
	IDU	17.3	12.4	7.0	6.5
	Heterosexual	12.9	11.3	9.9	7.0
	Other*	1.4	1.7	0.6	3.2
	Unknown	0.2	1.7	5.8	5.9
Female	**IDU**	61.6	48.9	30.9	26.7
	Heterosexual	34.9	46.7	65.5	46.7
	Other*	3.5	3.3	1.8	6.7
	Unknown	0.0	1.1	1.8	20.0

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**Table 6. Proportion of HIV Positives
by Gender, Exposure and Year of Diagnosis
*(Rest of VCH)***

Providence
HEALTH CARE
How you want to be treated.

Gender	Exposure	Year of Diagnosis			
		2003-2005	**2006-2009**	**2010-2013**	**2014-2015**
Male	**MSM**	53.2	60.5	64.7	47.1
	IDU	12.8	11.6	3.9	5.9
	Heterosexual	27.7	20.9	19.6	35.3
	Other*	4.3	7.0	2.0	5.9
	Unknown	2.1	0.0	9.8	5.9
Female	**IDU**	22.2	12.5	28.6	0.0
	Heterosexual	66.7	87.5	42.9	83.3
	Other*	11.1	0.0	28.6	0.0

*Other includes blood/blood products, occupational, perinatal and other exposures
Source: Public Health Surveillance Unit (HIV Surveillance Data).
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 19, 2015.

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Figure 5. Number of Patients' CD4 Cell Count and Disease Stage at Diagnosis by Year of Diagnosis
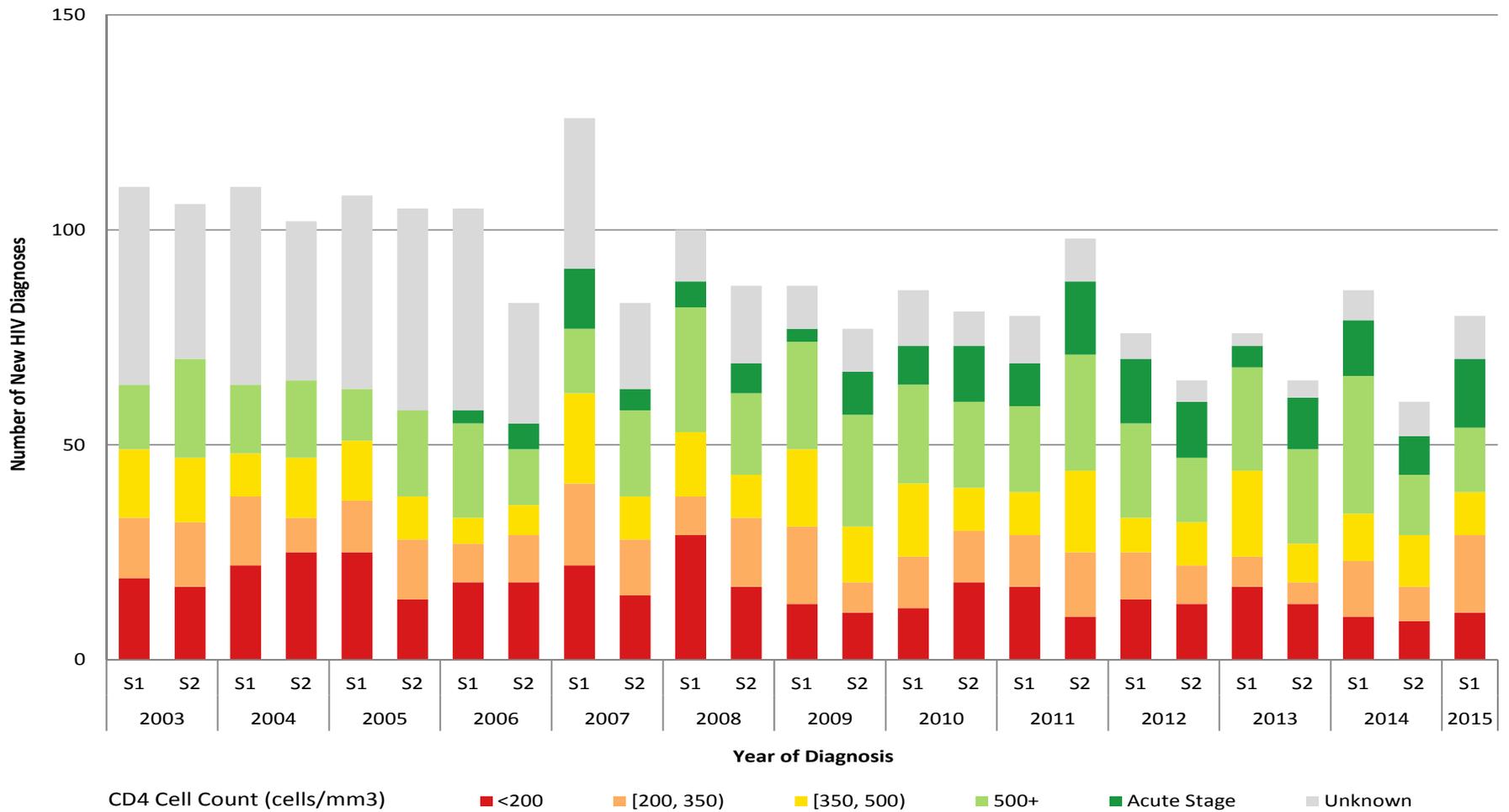
Source: Public Health Surveillance Unit (HIV Surveillance Data) & BC CfE Drug Treatment Program Data.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 21, 2015.

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Figure 6. Proportion of Patients' CD4 Cell Count and Disease Stage at Diagnosis by Year of Diagnosis
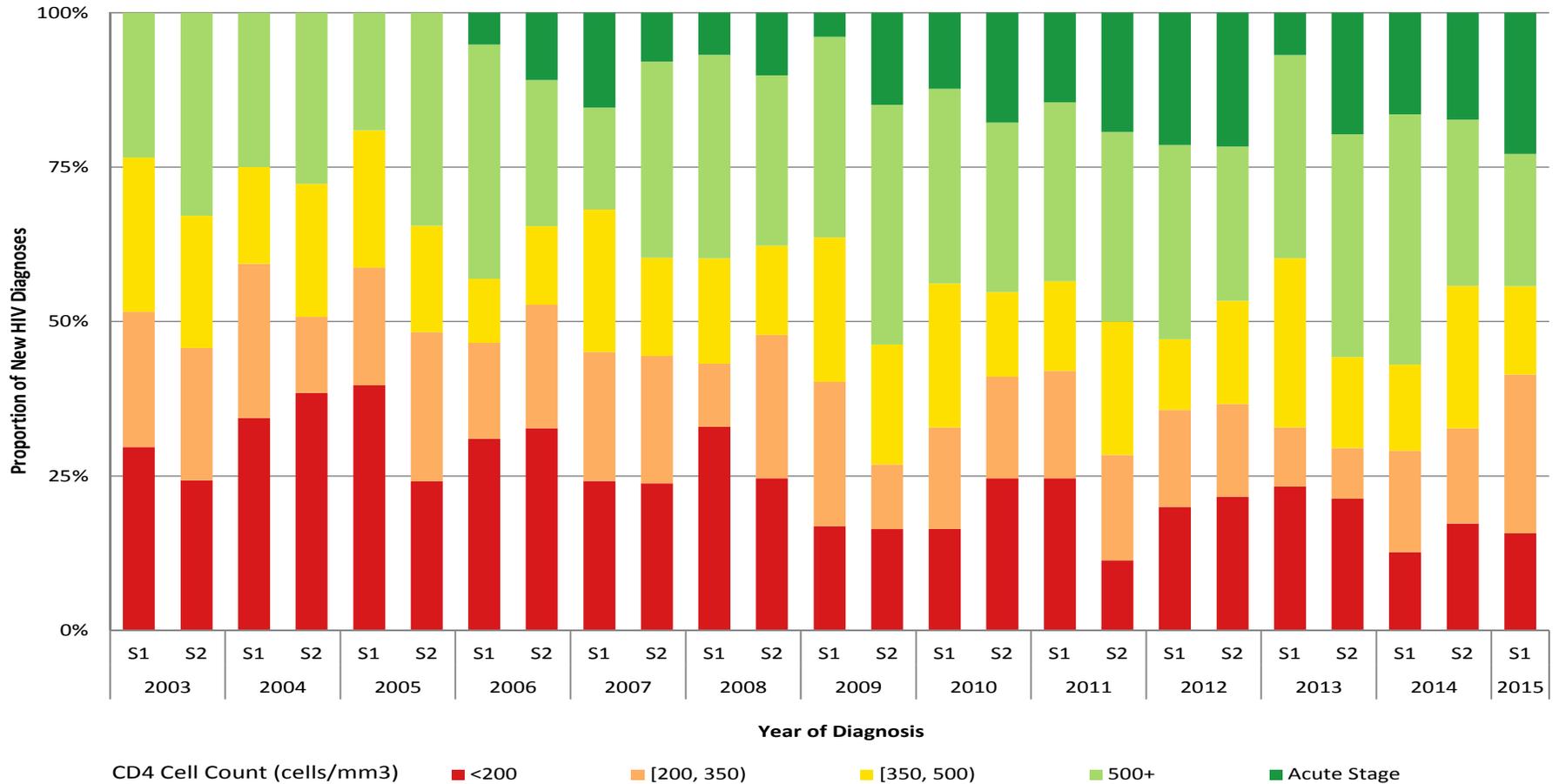
Source: Public Health Surveillance Unit (HIV Surveillance Data) & BC CfE Drug Treatment Program Data.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 21, 2015.

Figure 7. Proportion and Ratio of Patients Diagnosed with CD4 > 500/Acute Stage and CD4 < 200 by Year of Diagnosis

Source: Public Health Surveillance Unit (HIV Surveillance Data) & BC CfE Drug Treatment Program Data.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 21, 2015.

STOP HIV/AIDS Pilot Project Activities Start

Public Health Surveillance Unit

Median CD4 Cell Count (cell/mm^3) at Diagnosis for HIV Positive Individuals
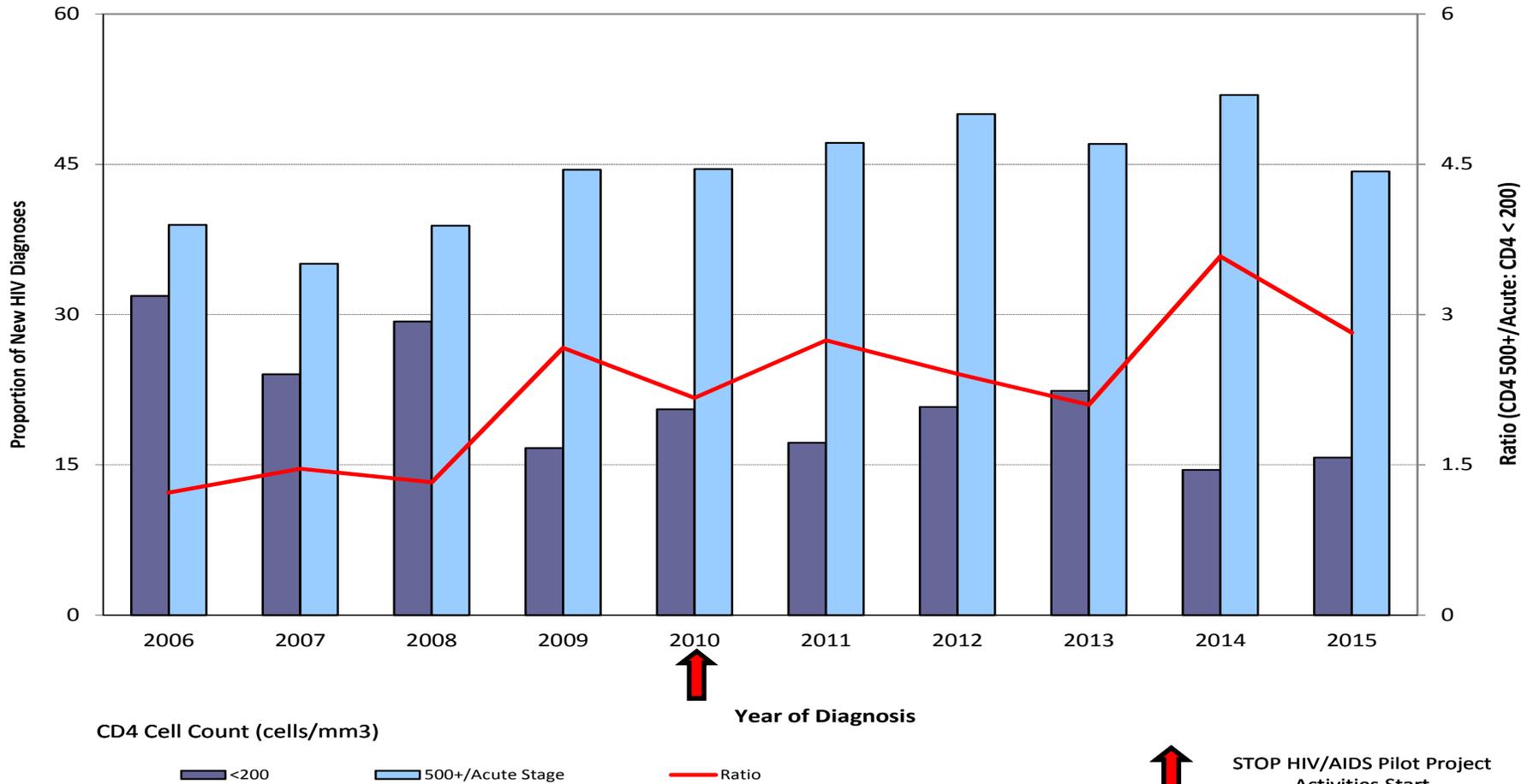
Map 4. Historical half-year average (January 2008 – June 2010)
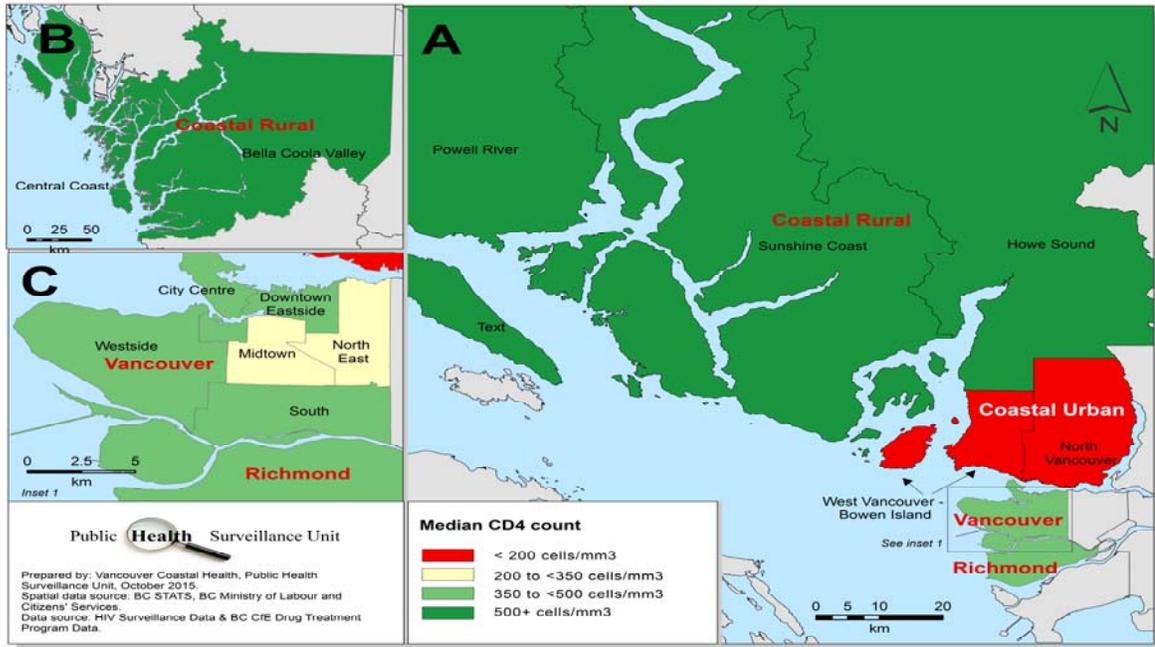
Map 5. Average since Stop initiative (July 2010 – June 2015)
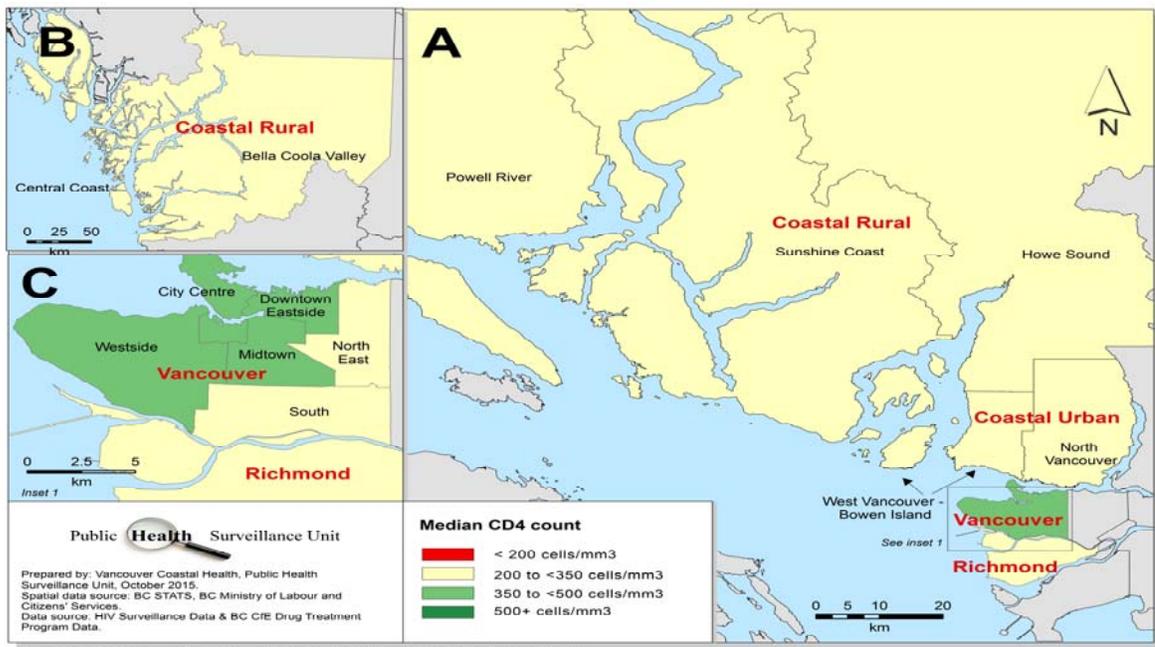
Notes:
- Maps A and B report on median CD4 count at diagnosis by HSDA
- Map C reports on median CD4 count at diagnosis by LHA

Section 3. Public Health Management Indicators

Figures, Maps and Tables

Figure 8. Proportion of New Diagnoses with Records of Public Health Follow-up

Compared to the preceding half year, the proportion of new positives with a record of public health follow-up declined from 93% (S2 2014) to 86% (S1 2015). It is important to note that most cases who are residents of VCH that do not have a record of public health follow up were tested in a different health authority and therefore follow up will not be on record in VCH.

Figure 9. Total Number of Contacts Elicited, Contacts per HIV Case and Contacts Notified

Compared to the preceding period, there was a significant increase in the total number of contacts elicited from HIV index cases in the first half of 2015 compared to the preceding periods. However, a significant decrease in the number of contacts elicited was observed in the first half of 2015 compared to the average since STOP and year to date.

The proportion of all contacts that were known to be notified of their exposure to HIV year to date in 2015 was significantly less than year to date in 2014.

Figure 10. Proportion of Known Contact and Average Number of Anonymous Contacts per Index Case

In the first half of 2015, the proportion of known contacts was higher compared to the previous period and an increase was observed in the average number of anonymous contacts per index case.

Figure 11. Number of Contacts Notified and Tested for HIV and Percent Positivity due to Contact Tracing

The total number of contacts that were tested for HIV as a result of public health follow-up increased in the first half of 2015, compared to the preceding period. Six new positives were identified in the first half of 2015, yielding a percent positivity of 14% due to contact tracing among notified contacts tested for HIV.

* Reliable data not available pre-STOP HIV/AIDS

STOP HIV/AIDS Pilot Project Activities Start

Date of Diagnosis

Source: Enhanced HIV Contact Tracing Form.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 21, 2015.
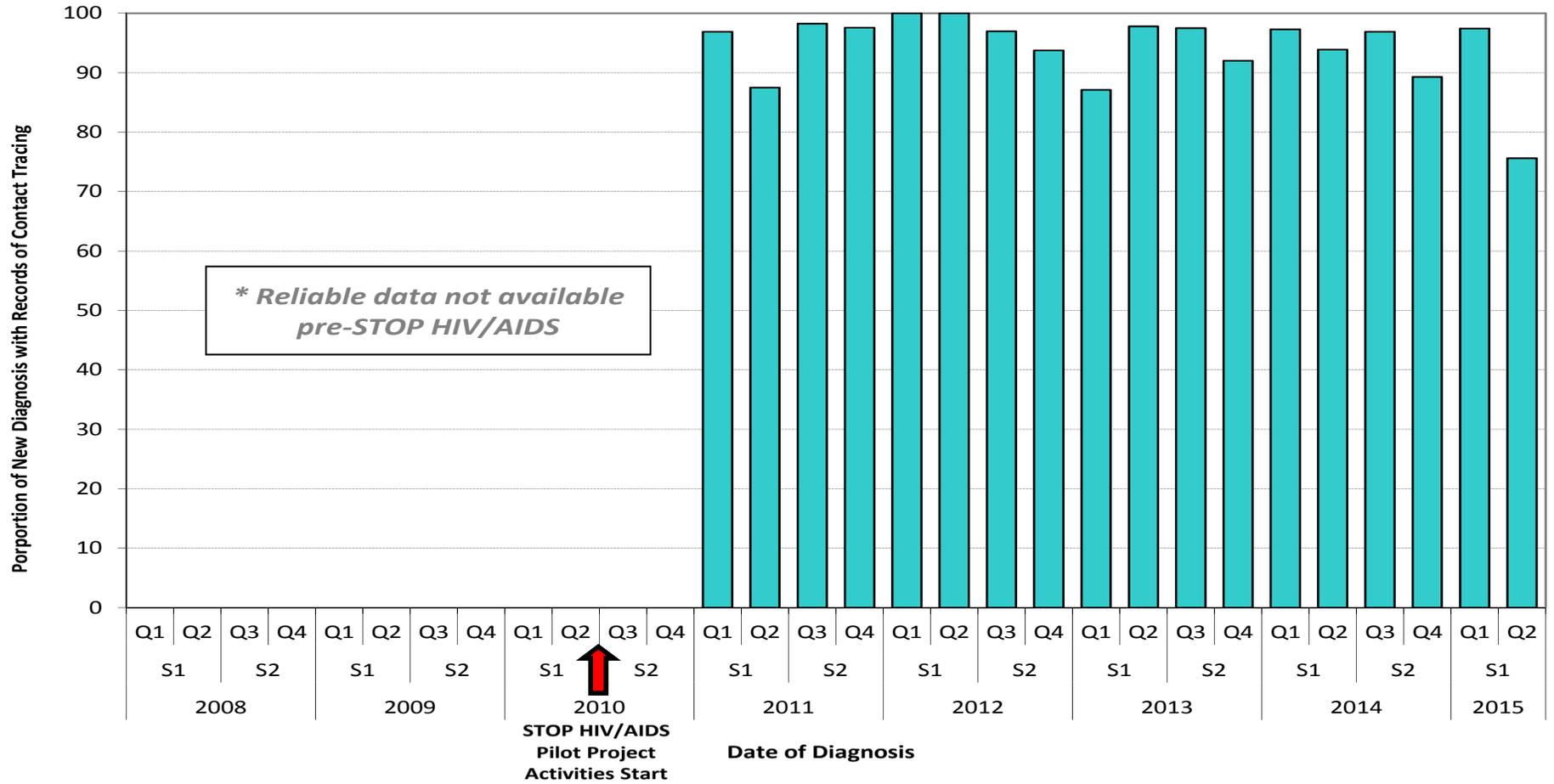
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Figure 9. Total Number of Contacts Elicited Number of Contacts Elicited per Case and Number of Contacts Notified
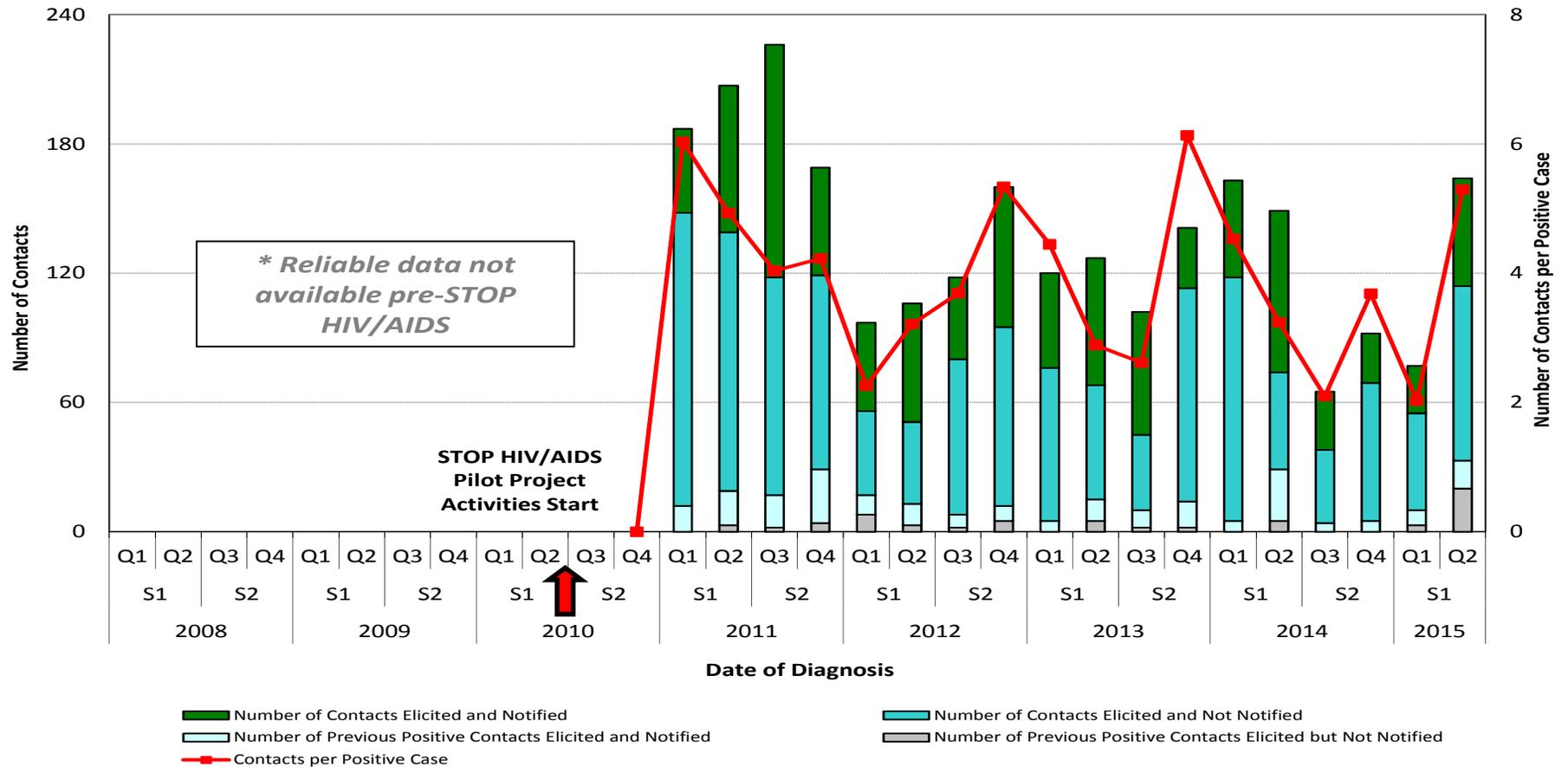
* Reliable data not available pre-STOP HIV/AIDS

STOP HIV/AIDS Pilot Project Activities Start

Number of Contacts

Number of Contacts per Positive Case

Date of Diagnosis

Legend:
- Number of Contacts Elicited and Notified
- Number of Contacts Elicited and Not Notified
- Number of Previous Positive Contacts Elicited and Notified
- Number of Previous Positive Contacts Elicited but Not Notified
- Contacts per Positive Case

Source: Enhanced HIV Contact Tracing Form.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 21, 2015

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Figure 10. Proportion of Known Contacts and Average Number of Anonymous Contacts per Index Case
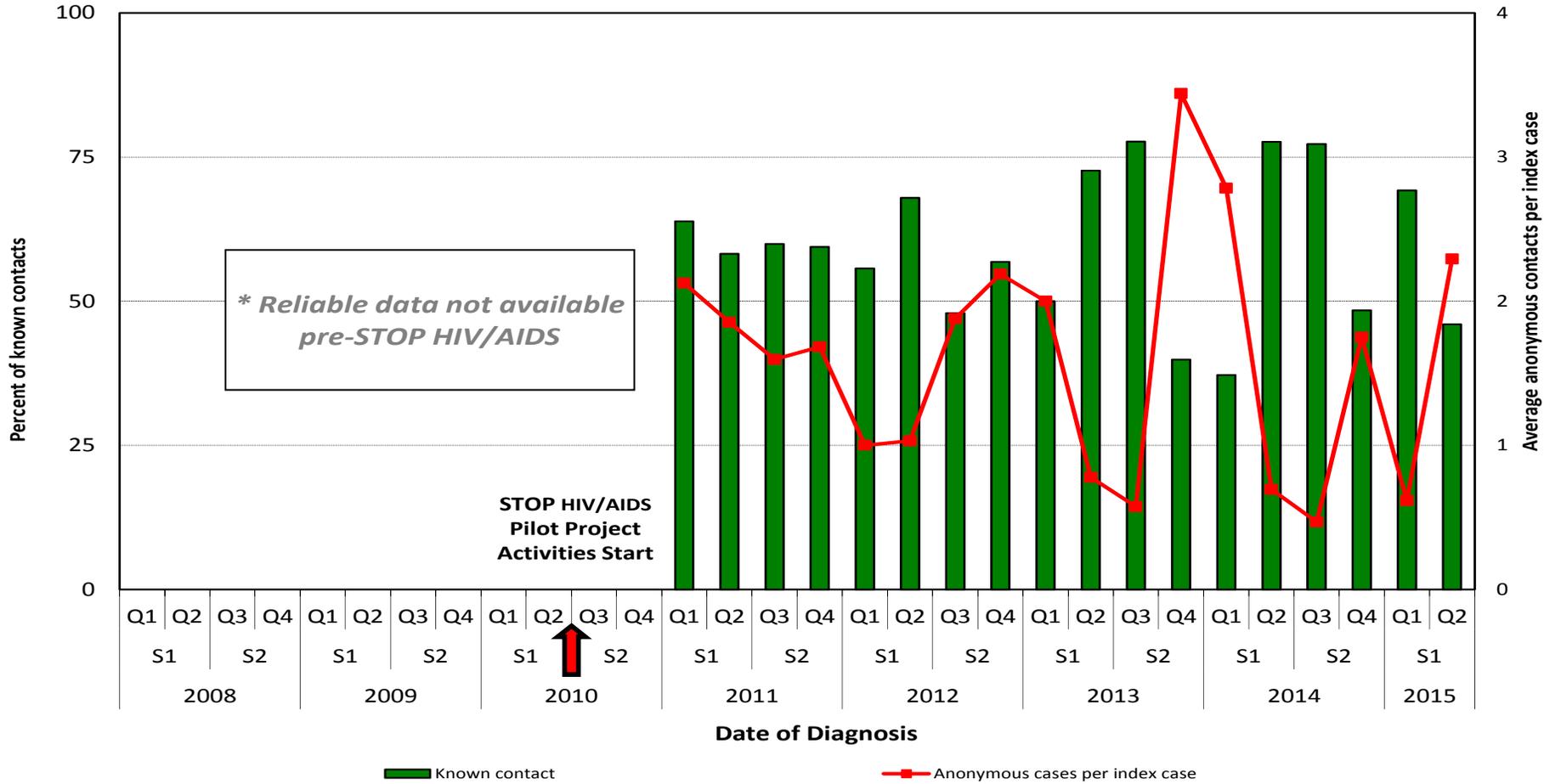
Source: Enhanced HIV Contact Tracing Form.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 21, 2015

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Figure 11. Number of Contacts Notified and Tested for HIV and Percent Positivity due to Contact Tracing

Source: Enhanced HIV Contact Tracing Form.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 21, 2015
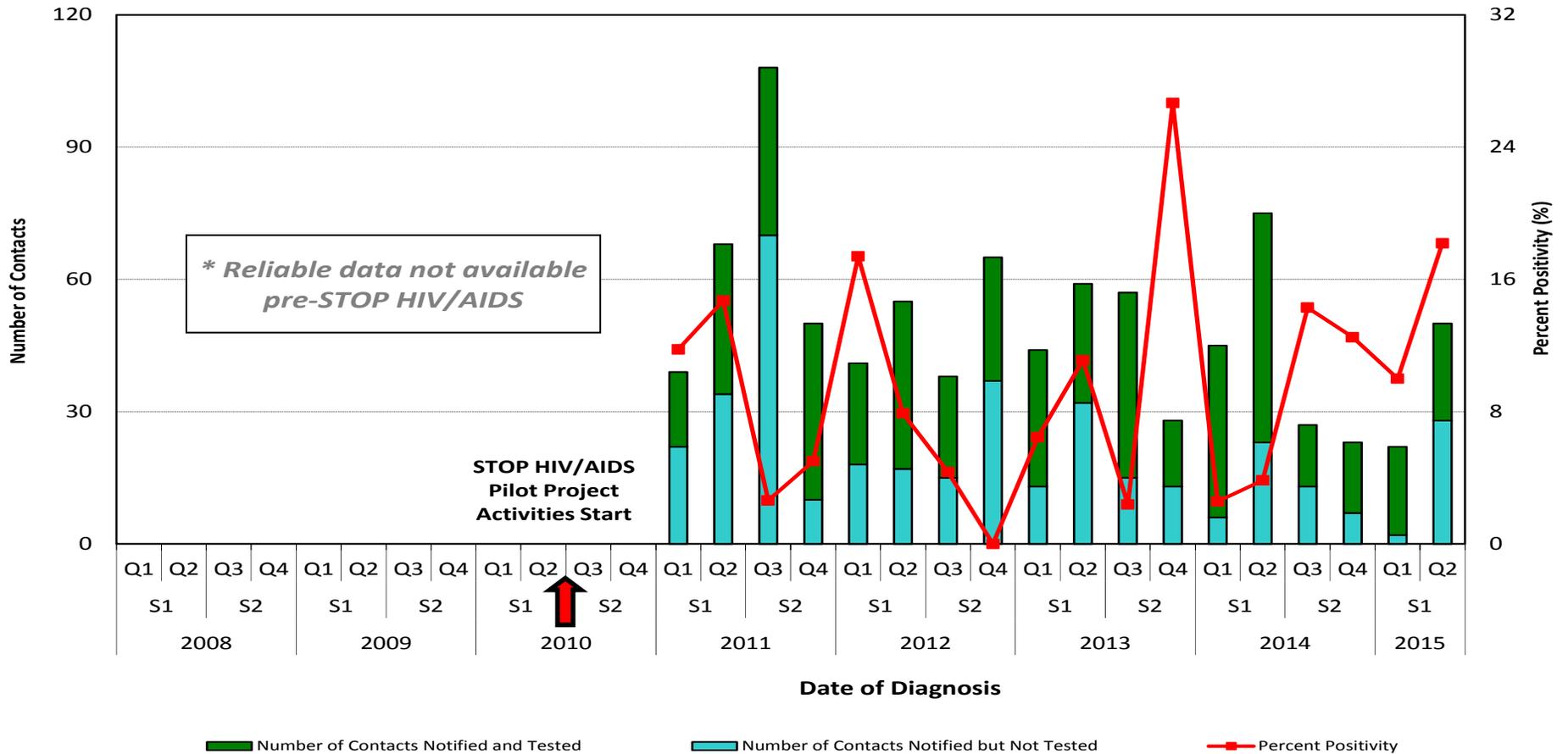
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Section 4. Treatment Indicators

Figures, Maps and Tables

Table 7,8. Proportion of Patients Linked to Care within 30 Days by Gender, Exposure and Year of Diagnosis

Vancouver HSDA (Table 7):

The proportion of males with IDU exposure linked to care within 30 days of diagnosis continued to increase in 2014-2015 compared to previous years, while males with MSM exposure remained stable and males with heterosexual exposure declined. In the period of 2014-2015, time to linkage to care was longest among males with 'other' exposure, although the median days to linkage decreased in this group compared to previous years.

The proportion of females with heterosexual exposure linked to care within 30 days decreased in 2014-2015 compared to previous years. The time to linkage to care overall was substantially shorter among females.

Rest of VCH (Table 8):

The proportion of males with MSM exposure linked to care within 30 days of diagnosis increased in 2014-2015 compared to previous years. While there was a slight increase in time to linkage among those with MSM exposure, a decline was observed in median days to linkage to care among males with heterosexual exposure.

The proportion of females linked to care within 30 days increased in 2014-2015 compared to previous years. However, not enough cases were available to detect a trend.

In general, linkage to care times in the rest of VCH are greater than median times to linkage in Vancouver across all exposure groups.

Table 9,10. Proportion of Patients Linked to Care within 30 Days by Gender, Age Group and Year of Diagnosis

Vancouver HSDA (Table 9):

Males aged 30-39 had the highest proportion linked to care within 30 days of diagnosis compared to all other age groups in 2014-2015, followed by males aged 15-29. Males aged 15-29 years had the fastest median days to linkage with 6 days, while males aged 60 years or older at diagnosis had the slowest median days to linkage with 12 days.

In 2014-2015, too few females were diagnosed to assess trend in proportion linked to care by age category. Overall, there is an increasing trend in the proportion linked to care as well as a reduction in the median days to linkage.

Rest of VCH (Table 10):

In 2014-2015, too few males were diagnosed to assess trend in proportion linked to care by age category. Overall, there is an increasing trend in proportion linked to care as well as a reduction in the median days to linkage.

There are not enough cases to classify by age group for females. But overall, an increase in the proportion of patients linked to care within 30 days was observed.

Table 11,12. Proportion of Patients Currently Retained in Care by Gender, Exposure and Year of Care

Vancouver HSDA (Table 11)

In 2015, among known exposure categories, males with heterosexual exposure had the highest proportion of individuals retained in care followed by MSM. Males with MSM/IDU and IDU exposure were least likely to be retained in care compared to other exposure groups. Since 2003, the total proportion of males retained in care remains steady.

In 2015, females with heterosexual exposure were more likely to be retained in care than those with IDU exposure.

Rest of VCH (Table 12)

In 2015, more males with IDU exposure were currently retained in care compared to other risk groups.

The proportion of female patients in 2015 retained in care with heterosexual exposure decreased compared to 2014 and 2013.

Table 13,14. Proportion of Patients Currently Prescribed ARVs by Gender, Exposure and Year of Care

Vancouver HSDA (Table 13)

In 2015, the exposure category with the greatest proportion of individuals currently prescribed ARVs was among MSM/IDU (81%) followed by heterosexual (73%). Compared to previous years, the proportion of males in all exposure categories, except those with unknown exposure, who were prescribed ARVs, has consistently increased since 2003.

The proportion of females with heterosexual exposure who were prescribed ARVs continued to increase through 2015.

Rest of VCH (Table 14)

Males with IDU exposure had the greatest proportion of individuals who were prescribed ARVs in 2015. Since 2003, the proportion of males who were prescribed ARVs has increased among those with MSM, IDU or heterosexual exposures.

Since 2004, the proportion of females who were prescribed ARVs increased from 29% to 75% in 2015.

Overall, there was an increasing trend in the proportion of males and females currently prescribed ARVs.

Table 15, 16. Mean Monitored Viral Load and Proportion of HIV Positive Individuals Not Fully Suppressed with Viral Load > 200 Copies/mL

Vancouver HSDA (Table 15)

The table shows a steady decline in the mean monitored viral load (copies/ml) since 2008 from 746 copies/ml to 63 copies/ml in the first half of 2015. This corresponds with a steady increase in the proportion of HIV positive individuals with a prescription for antiretroviral therapy. The inverse relationship was observed for decline in both the proportion and absolute number of individuals with a viral load > 200 copies/ml since 2008.

Rest of VCH (Table 16)

Similar to Vancouver HSDA, the same trends were observed in the rest of VCH with increasing individuals on ARVs and decreasing monitored viral load since 2008.

Figure 12. Mean Monitored Viral Load (copies/ml) and Proportion of HIV Positive Individuals not Fully Suppressed with Viral Load > 200 Copies/mL

From 2008 to 2015, the mean monitored viral load (copies/ml) has steadily declined in both Vancouver HSDA and the rest of VCH. This trend was similarly observed in the proportion of those with unsuppressed viral loads. The mean monitored viral load was below detectable levels (<200 copies/ml) since the initiation of STOP HIV/AIDS.

Maps 6, 7. Mean Monitored viral load (copies/ml) by LHAs

From July 1, 2010 to June 30, 2015, the mean monitored viral load across all LHAs decreased to less than 200 copies/mL. There were noticeable changes for Richmond, Howe Sound, Powell River, Vancouver City Centre, Vancouver DTES, Vancouver Midtown, and Vancouver South which all saw average reductions in mean monitored viral load of 71% or more since the STOP HIV/AIDS pilot project.

Table 7. Proportion of Patients Linked to Care within 30 Days of Diagnosis by Gender, Exposure and Year of Diagnosis *(Vancouver HSDA)*

Gender	Exposure	Year of Diagnosis							
		2003-2005		2006-2009		2010-2013		2014-2015	
		Linked to Care	Median Days to Linkage	Linked to Care	Median Days to Linkage	Linked to Care	Median Days to Linkage	Linked to Care	Median Days to Linkage
Male	MSM	57.2	14	63.9	12	73.4	9	74.1	6
	MSM/IDU	60.7	16	60.0	17	64.3	10	–	–
	IDU	43.0	13	61.3	12.5	72.2	6.5	83.3	7.5
	Heterosexual	60.9	13	72.1	9	94.1	7	61.5	7
	Other*	57.1	18.5	40.0	13	–	–	66.7	9.5
	Unknown	–	–	20.0	1	73.3	7	63.6	8
	SubTotal	55.3	14	63.2	12	74.9	8	73.1	7
Female	IDU	30.2	18.5	42.2	13	64.7	2	–	–
	Heterosexual	53.3	13	86.0	12	77.8	9	71.4	13
	Other*	–	–	–	–	–	–	–	–
	Unknown	–	–	–	–	–	–	–	–
	SubTotal	39.5	14	63.0	12.5	74.5	9	80.0	6

Table 8. Proportion of Patients Linked to Care within 30 Days of Diagnosis by Gender, Exposure and Year of Diagnosis *(rest of VCH)*

Exposure	Year of Diagnosis							
	2003-2005		2006-2009		2010-2013		2014-2015	
	Linked to Care	Median Days to Linkage	Linked to Care	Median Days to Linkage	Linked to Care	Median Days to Linkage	Linked to Care	Median Days to Linkage
MSM	64.0	20	46.2	13.5	78.8	11.5	87.5	12
IDU	33.3	9.5	40.0	13	–	–	–	–
Heterosexual	53.8	13	55.6	14	80.0	16	66.7	10.5
Other*	–	–	–	–	–	–	–	–
Unknown	–	–	–	–	60.0	0	–	–
SubTotal	55.3	15	51.2	14	78.4	12.5	82.4	10
IDU	–	–	–	–	–	–	–	–
Heterosexual	66.7	22.5	85.7	12.5	–	–	100.0	13
Other*	–	–	–	–	–	–	–	–
Unknown	–	–	–	–	–	–	–	–
SubTotal	66.7	22.5	75.0	12.5	85.7	16	100.0	10.5

*Other includes blood/blood products, occupational, perinatal and other exposures
Source: Public Health Surveillance Unit (HIV Surveillance Data).
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 21, 2015.

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Table 9. Proportion of Patients Linked to Care within 30 Days of Diagnosis by Gender, Age Group and Year of Diagnosis *(Vancouver HSDA)*

Gender	Age Group	Year of Diagnosis							
		2003-2005		2006-2009		2010-2013		2014-2015	
		Linked to Care	Median Days to Linkage	Linked to Care	Median Days to Linkage	Linked to Care	Median Days to Linkage	Linked to Care	Median Days to Linkage
Male	15-29	43.0	19.0	55.8	13.0	66.9	9.0	72.7	6.0
	30-39	56.3	14.0	60.1	13.0	68.2	9.0	80.9	7.0
	40-49	53.8	13.5	64.4	11.0	83.0	7.0	70.3	7.0
	50-59	64.1	12.0	75.7	12.0	80.6	7.0	67.6	8.0
	60+	74.1	13.0	83.3	8.0	100.0	9.5	69.2	12.0
	SubTotal	55.3	14.0	63.2	12.0	74.9	8.0	73.1	7.0
Female	15-29	38.5	11.0	39.4	11.0	66.7	13.0	—	—
	30-39	56.5	18.0	72.4	14.0	73.3	1.0	50.0	22.0
	40-49	25.9	15.0	78.6	19.0	73.3	7.0	—	—
	50-59	40.0	21.0	77.8	7.0	100.0	12.5	—	—
	60+	—	—	80.0	6.5	—	—	—	—
	SubTotal	38.8	14.0	62.2	12.5	74.5	9.0	80.0	6.0

Table 10. Proportion of Patients Linked to Care within 30 Days of Diagnosis by Gender, Age Group and Year of Diagnosis *(rest of VCH)*

Gender	Age Group	Year of Diagnosis							
		2003-2005		2006-2009		2010-2013		2014-2015	
		Linked to Care	Median Days to Linkage	Linked to Care	Median Days to Linkage	Linked to Care	Median Days to Linkage	Linked to Care	Median Days to Linkage
Male	15-29	57.1	25.0	50.0	14.0	71.4	14.5	—	—
	30-39	40.0	10.5	55.6	16.0	66.7	8.5	87.5	8.0
	40-49	65.0	13.0	41.2	12.0	83.3	13.5	—	—
	50-59	40.0	22.0	42.9	13.0	85.7	12.5	—	—
	60+	60.0	22.0	—	—	80.0	11.0	—	—
	SubTotal	55.3	15.0	51.2	14.0	78.4	12.5	82.4	10.0
Female	15-29	—	—	—	—	—	—	—	—
	30-39	—	—	—	—	—	—	—	—
	40-49	—	—	—	—	—	—	—	—
	50-59	—	—	—	—	—	—	—	—
	60+	—	—	—	—	—	—	—	—
	SubTotal	62.5	22.0	75.0	12.5	85.7	16.0	100.0	10.5

*Other includes blood/blood products, occupational, perinatal and other exposures
*Individual Aged less than 14 was excluded from the table
Source: Public Health Surveillance Unit (HIV Surveillance Data).
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 21, 2015

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Table 11. Proportion of Patients Currently Retained in Care by Gender, Exposure and Year of Care (Vancouver HSDA)

Gender	Exposure	Year of Care												
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Male	MSM	92.3	86.4	83.2	81.0	82.4	81.1	79.7	82.1	81.8	82.4	81.6	80.6	79.8
	MSM/IDU	—	61.5	80.0	76.5	75.0	78.6	81.8	86.7	85.7	83.0	87.5	86.0	75.4
	IDU	69.2	72.1	70.1	62.4	71.8	76.1	77.1	76.1	78.0	78.6	76.4	75.5	76.2
	Heterosexual	100.0	66.7	78.4	71.7	76.3	78.5	78.6	83.8	84.2	84.1	82.7	83.2	83.0
	Other*	—	—	80.0	87.5	66.7	44.4	45.5	61.5	69.2	66.7	73.3	66.7	70.6
	Unknown	—	—	—	—	—	—	—	71.4	71.4	71.4	77.8	91.2	86.1
	Subtotal	90.1	78.6	79.9	76.6	79.3	79.5	78.7	81.3	81.5	81.9	81.2	80.7	79.6
Female	IDU	66.7	66.7	55.3	57.7	56.1	60.8	68.8	73.4	79.3	80.7	79.8	78.2	78.2
	Heterosexual	83.3	64.3	85.0	78.6	80.0	84.3	79.3	78.3	79.0	90.0	84.0	83.7	84.0
	Other*	—	—	—	—	—	—	100.0	83.3	100.0	83.3	100.0	100.0	83.3
	Subtotal	75.0	67.6	66.7	65.1	66.1	71.1	74.3	76.0	79.9	85.5	82.6	81.8	81.5

Table 12. Proportion of Patients Currently Retained in Care by Gender, Exposure and Year of Care (rest of VCH)

Gender	Exposure	Year of Care												
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Male	MSM	—	84.6	72.7	85.2	79.4	82.5	83.3	86.0	81.0	84.3	83.3	85.1	85.5
	IDU	—	—	80.0	50.0	50.0	63.6	80.0	80.0	60.0	75.0	83.3	81.8	90.9
	Heterosexual	—	100.0	77.8	80.0	66.7	91.7	93.8	83.3	85.7	68.2	87.0	81.5	81.5
	Other*	—	—	—	—	—	—	—	—	—	—	—	—	—
	Unknown	—	—	—	—	—	—	—	—	—	—	—	100.0	100.0
	Subtotal	100.0	86.4	75.7	79.5	71.7	81.3	85.5	85.0	80.2	80.2	84.8	84.9	86.2
Female	IDU	—	—	—	—	—	—	—	—	—	—	—	—	—
	Heterosexual	—	—	60.0	66.7	66.7	90.0	84.6	92.9	78.6	78.6	81.3	72.2	70.0
	Other*	—	—	—	—	—	—	—	—	—	—	—	—	—
	Subtotal	—	60.0	62.5	66.7	72.7	91.7	87.5	89.5	84.2	84.2	87.0	76.0	70.4

*Other includes blood/blood products, occupational, perinatal and other exposures.
Source: Public Health Surveillance Unit (HIV Surveillance Data) & BCCfE Drug Treatment Program Data.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 21, 2015.

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Table 13. Proportion of Patients Currently Prescribed ARVs by Gender, Exposure and Year of Care (_Vancouver HSDA_)

Gender	Exposure	Year of Care												
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Male	MSM	17.9	22.7	28.3	30.7	37.0	42.6	50.6	57.9	62.5	66.3	56.7	63.6	68.0
	MSM/IDU	14.3	11.1	17.9	28.2	33.3	45.5	53.1	66.7	70.2	72.9	77.4	71.0	80.6
	IDU	5.6	19.4	22.7	33.0	37.4	43.9	50.3	55.8	62.2	67.1	60.3	69.0	70.1
	Heterosexual	32.3	34.0	38.1	43.8	49.5	58.1	60.0	62.6	69.2	70.7	66.1	69.9	73.2
	Other*	—	—	40.0	45.5	53.8	43.8	50.0	54.5	58.3	56.0	51.5	48.5	57.6
	Unknown	—	40.0	60.0	60.0	57.1	45.9	48.0	58.3	57.1	56.1	39.3	57.9	59.3
	Subtotal	17.9	23.2	28.7	33.4	39.2	44.8	51.6	58.5	63.2	66.4	57.3	64.3	68.3
Female	IDU	0.0	8.6	9.1	10.1	18.8	25.3	33.7	43.9	58.8	62.6	61.2	66.0	64.1
	Heterosexual	20.0	12.5	19.4	25.6	29.3	42.4	46.1	52.3	62.0	66.4	68.6	67.8	78.0
	Other*	—	—	—	—	—	85.7	77.8	80.0	80.0	90.0	90.0	90.0	80.0
	Unknown	—	—	—	—	—	—	—	40.0	42.9	50.0	30.8	46.2	53.8
	Subtotal	11.1	11.3	13.5	17.2	24.8	35.1	41.4	49.2	60.7	65.2	64.3	66.8	70.9

Table 14. Proportion of Patients Currently Prescribed ARVs by Gender, Exposure and Year of Care (_rest of VCH_)

Gender	Exposure	Year of Care												
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Male	MSM	50.0	27.8	34.6	37.5	46.5	52.1	62.3	61.5	68.0	75.6	66.7	72.0	79.6
	MSM/IDU	—	—	—	—	—	—	—	—	—	—	—	—	—
	IDU	—	—	33.3	28.6	27.3	63.6	90.9	81.8	91.7	92.3	84.6	76.9	84.6
	Heterosexual	—	12.5	18.2	45.5	41.7	62.5	73.7	69.6	68.0	72.0	61.3	67.7	74.2
	Other*	—	—	—	—	—	—	—	—	—	—	—	—	—
	Unknown	—	—	—	—	—	33.3	57.1	50.0	57.1	66.7	46.7	66.7	73.3
	Subtotal	35.3	27.3	29.2	38.2	41.4	53.7	67.0	64.2	68.6	74.8	64.1	69.9	77.6
Female	IDU	—	—	—	—	—	—	—	—	60.0	60.0	100.0	100.0	100.0
	Heterosexual	—	20.0	50.0	50.0	50.0	63.6	46.2	64.3	75.0	70.6	54.2	58.3	75.0
	Other*	—	—	—	—	—	—	—	—	—	—	—	—	—
	Unknown	—	—	—	—	—	—	—	—	—	—	20.0	20.0	40.0
	Subtotal	—	28.6	44.4	45.5	46.2	66.7	50.0	61.9	70.8	65.4	55.6	58.3	75.0

*Other includes blood/blood products, occupational, perinatal and other exposures
Source: Public Health Surveillance Unit (HIV Surveillance Data) & BCCfE Drug Treatment Program Data.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 21, 2015.

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Table 15. Mean Monitored Viral Load and Proportion of HIV Positive Individuals Not Fully Suppressed with Viral Load > 200 Copies/mL _(Vancouver HSDA)_

Year	Half years	VCH53		VCH54		
		Mean Monitored vL (copies/mL)	Proportion on ARVs (%)	Proportion of all HIV positive individuals with viral load (>200 copies/mL)	Numerator/Denominator of VCH54	Proportion on ARVs (%)
2008	Jan-Jun	746	56	59	(375/640)	29
	July-Dec	581	61	53	(361/684)	30
2009	Jan-Jun	370	66	49	(362/733)	34
	July-Dec	312	70	44	(338/774)	35
2010	Jan-Jun	248	76	40	(326/816)	43
	July-Dec	213	77	37	(329/883)	43
2011	Jan-Jun	148	84	31	(286/911)	51
	July-Dec	126	86	30	(297/985)	58
2012	Jan-Jun	107	89	25	(256/1028)	62
	July-Dec	97	91	23	(246/1069)	64
2013	Jan-Jun	89	92	22	(244/1119)	66
	July-Dec	76	94	20	(224/1137)	72
2014	Jan-Jun	73	94	18	(217/1192)	71
	July-Dec	63	95	15	(187/1217)	74
2015	Jan-Jun	63	97	15	(189/1249)	82

Source: Public Health Surveillance Unit (HIV Surveillance Data) & BCCfE Drug Treatment Program Data.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 21, 2015.

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Year	Half years	VCH53		VCH54		
		Mean Monitored vL (copies/mL)	Proportion on ARVs (%)	Proportion of all HIV positive individuals with viral load (>200 copies/mL)	Numerator/Denominator of VCH54	Proportion on ARVs (%)
2008	**Jan-Jun**	956	58	62	(32/52)	31
	July-Dec	408	67	49	(28/57)	39
2009	**Jan-Jun**	303	76	47	(31/66)	52
	July-Dec	184	79	39	(28/71)	54
2010	**Jan-Jun**	148	78	34	(26/77)	42
	July-Dec	154	78	32	(27/85)	41
2011	**Jan-Jun**	114	83	32	(27/84)	56
	July-Dec	132	80	35	(35/100)	49
2012	**Jan-Jun**	124	86	32	(35/108)	63
	July-Dec	76	93	21	(24/115)	75
2013	**Jan-Jun**	76	92	20	(24/120)	67
	July-Dec	81	93	20	(25/124)	72
2014	**Jan-Jun**	56	95	16	(21/131)	86
	July-Dec	58	95	17	(23/137)	83
2015	**Jan-Jun**	**56**	95	14	(21/148)	76

Source: Public Health Surveillance Unit (HIV Surveillance Data) & BCCfE Drug Treatment Program Data.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 21, 2015.

Figure 12. Mean Monitored Viral Load (vL) and Proportion of HIV Positive Individuals Not Fully Suppressed with Viral Load > 200 Copies/mL

Source: Public Health Surveillance Unit (HIV Surveillance Data) & BCCfE Drug Treatment Program Data.
Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit. October 21, 2015.

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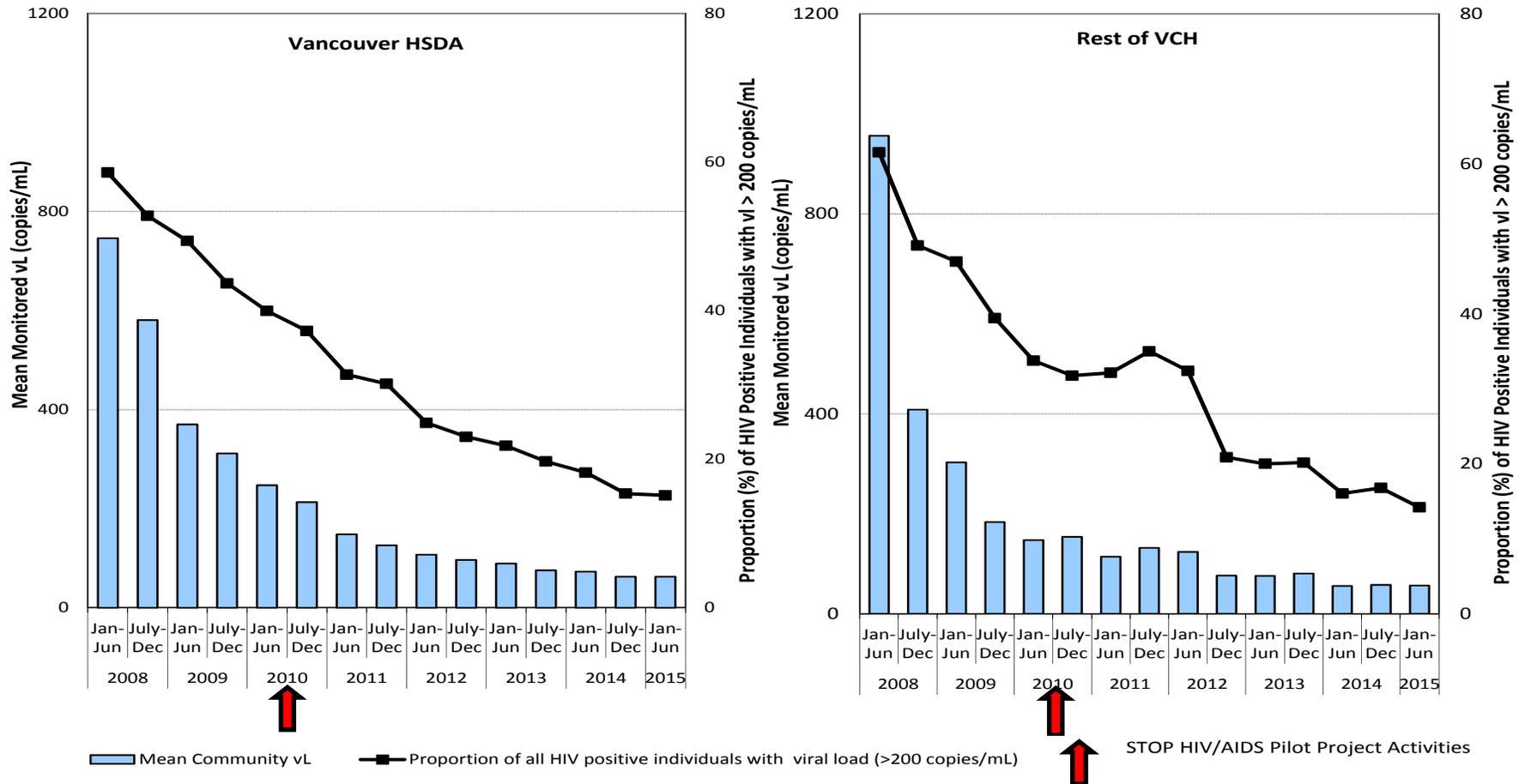
Map 6. Historical Average (January 2008 – June 2010)

Mean viral load
- 35 to < 200 copies/ml
- 200 to <500 copies/ml
- 500 to <1000 copies/ml
- 1000 to <6500 copies/ml
- No observations

Public Health Surveillance Unit

Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit, October 2015.
Spatial data source: BC STATS, BC Ministry of Labour and Citizens' Services.
Data source: HIV Surveillance Data & BC CfE Drug Treatment Program Data.

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Map 7. Average since Stop Initiative (July 2010 – June 2015)

Mean viral load
- 35 to < 200 copies/ml
- 200 to <500 copies/ml
- 500 to <1000 copies/ml
- 1000 to <6500 copies/ml
- No observations

Public Health Surveillance Unit

Prepared by: Vancouver Coastal Health, Public Health Surveillance Unit, October 2015.
Spatial data source: BC STATS, BC Ministry of Labour and Citizens' Services.
Data source: HIV Surveillance Data & BC CfE Drug Treatment Program Data.

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Appendix A. Indicator Definitions and Rationale

Testing Indicators

VCH 1. Number of Point of Care 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 who are 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.

Additional Selection Criteria:
- Previous positives are excluded.

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

VCH8a. Overall number of HIV lab tests (either from VCH residents or those who tested at a VCH clinic)

Total number of HIV lab tests, either from VCH residents or 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 VCH Region. Assessing this indicator over time will provide a picture of how STOP HIV/AIDS is influencing HIV testing among clinical practices.

Data Source: HIV Laboratory Testing Data

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

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

Rationale: A primary objective of the STOP HIV/AIDS project is to increase testing across VCH Region. Assessing this indicator over time will provide a picture of how STOP HIV/AIDS is influencing HIV testing among clinical practices.

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

Data Source: HIV Laboratory Testing Data

VCH11a: Number of HIV lab tests from residents of VCH and HSDAs

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 available residency information are included.

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 available residency information are excluded.

Data Source: HIV Laboratory Testing Data

VCH13a. Number of positive HIV diagnoses for residents of VCH and HSDAs

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

Rationale: Increased case finding to reduce the number of individuals who are 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 the project.

Additional Selection Criteria:
- Individuals who may have been previously HIV positive are excluded.
- Individuals who tested in VCH without residency information are included.

Data Source: PHSU Reportable HIV Surveillance Data

VCH14a. Percent positivity of residents of VCH and HSDAs

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

Rationale: Increased case finding to reduce the number of individuals who are 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.

Additional Selection Criteria:
- Individuals who may have been previously HIV positive are excluded.
- Individuals who tested in VCH without residency information are included.

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

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VCH45a. Proportion of HIV patients with CD4 count > 500 cells/mL or acute stage at time of diagnosis

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

Rationale: Diagnosing individuals earlier on in the course of disease enables them to get on treatment earlier, improves patient quality of life and reduce the transmission in the community.

Analytical Definition
- Numerator: A subset of the denominator with a first CD4 cell count at diagnosis is >500 cells/mL or in acute stage.
- Denominator: All new HIV positive cases diagnosed in a given time period with a CD4 test on record.

Additional Selection Criteria:
- The CD4 count at time of diagnosis is selected from the testing which was closest to the diagnosis date. And testing should be within 1 year after diagnosis.
- CD4 testing records with either missing dates or missing values are excluded from this analysis.

Data Source: PHSU Reportable HIV Surveillance Data and BCCfE Drug Treatment Data.

VCH45b. Proportion of HIV patients with CD4 count < 200 cells/mL at diagnosis

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

Rationale: Finding HIV positive individuals before late stage 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 quality of life. It is also an indication that we are reducing the number of individuals in the population who are unaware of their HIV infection.

Analytical Definition
- Numerator: A subset of the denominator with a first CD4 cell count < 200 cell/mL at diagnosis and not at acute stage at time of diagnosis.
- Denominator: All new HIV positive cases diagnosed in a given time period with a CD4 test on record.

Additional Selection Criteria:
- The CD4 count at time of diagnosis is selected from the value on the testing date which was closest to the diagnosis. The test should also be within 1 year after diagnosis.
- CD4 testing records with either missing dates or missing values are excluded from this analysis.

Data Source: PHSU Reportable HIV Surveillance Data and BCCfE Drug Treatment Data.

Public Health Management Indicators

VCH16. Proportion of new positives with record of public health follow-up

The proportion of unique new positives who have documentation of public health follow-up

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. Initiating contact tracing is to elicit partner information from an index case is a critical first step and will be important to track STOP HIV/AIDS success.

Data Source: PHSU Reportable HIV Surveillance Data and 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: see VCH16.

Data Source: PHSU Reportable HIV Surveillance Data and Enhanced HIV Contact Tracing Form

VCH17a. Average number of contacts elicited per HIV positive case

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

Rationale: see VCH16

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.

Data Source: PHSU Reportable HIV Surveillance Data and 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 the method of partner notification is associated with the rate of partners presenting for medical evaluation.

Analytical Definition
- Numerator: Total number of unique contacts notified in a given time period.
- Denominator: Total number of unique contacts elicited from HIV positive clients in a given time period.

Data Source: PHSU Reportable HIV Surveillance Data and Enhanced HIV Contact Tracing Form

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VCH23a. Proportion of notified 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 enhanced public health efforts under STOP HIV/AIDS pilot project.

Analytical Definition
- Numerator: Number of contacts tested for HIV in a given time period.
- Denominator: Number of contacts notified of their potential exposure to HIV.

Additional Selection Criteria:
- Contacts known to be previously positive are excluded.

Data Source: PHSU Reportable HIV Surveillance Data and Enhanced HIV Contact Tracing Form

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VCH23b. Number of notified 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.

Additional Selection Criteria:
- Contacts known to be previously positive are excluded.

Data Source: PHSU Reportable HIV Surveillance Data and Enhanced HIV Contact Tracing Form

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
- Denominator: Proportion of contacts tested for HIV in a given time period

Additional Selection Criteria:
- Exclude contacts known to be previously positive.

Data Source: PHSU Reportable HIV Surveillance Data and Enhanced HIV Contact Tracing Form

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

Proportion of contacts who were previously positive 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 in a given time period.
- Denominator: Proportion of unique contacts notified of their potential exposure to HIV in a given time period.

Data Source: PHSU Reportable HIV Surveillance Data and Enhanced HIV Contact Tracing Form

Treatment Indicators

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

Proportion of individuals with an HIV positive test in a given time period, who have at least a HIV viral load (vL) or a CD4 test 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 to minimize the risk of transmission. Standard care for persons with HIV includes regular clinical and laboratory assessment. As part of enhanced HIV guidelines, new HIV diagnoses should receive a vL test or a CD4 test within 30 days of diagnosis.

Analytical Definition
- Numerator: A subset of the denominator having a CD4 or a vL test within 30 days of diagnosis.
- Denominator: Total number of new HIV positive cases diagnosed in a given time period.

Additional Selection Criteria:
- CD4 and/or vL testing records that occurred prior to diagnosis date are excluded from this analysis.
- Individuals deceased by the end of the half year are excluded.
- CD4 or viral load testing records with either missing dates or missing values are excluded from this analysis.

Data Source: PHSU Reportable HIV Surveillance Data and BCCfE Drug Treatment Data.

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 to minimize the risk of transmission. Standard care for persons with HIV includes regular clinical and laboratory assessment. As part of enhanced HIV guidelines, new HIV diagnoses should receive a vL test or a 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.

Additional Selection Criteria:
- CD4 or viral load testing records that occurred prior to diagnosis date are excluded from this analysis.
- Individuals deceased by the end of the half year are excluded.
- CD4 or viral load testing records with either missing dates or missing values are excluded from this analysis.

Data Source: PHSU Reportable HIV Surveillance Data and BCCfE Drug Treatment Data.

VCH46a. Proportion of HIV patients currently retained in care

Proportion of HIV positive individuals in the database who have had the recommended number of vL tests in a given time period.

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: Total number of newly diagnosis cases who having at least 2 vL or CD4 test and with at least 3 month apart in a year, or at least 1 vL or CD4 test for those diagnosed less than 1 year.
- Denominator: Total number of newly diagnosis in the dataset.
- Year to Date: take the value from the current half-year and previous half-year.

Additional Selection Criteria:
- This cohort will retrospectively select back over the past 12 months.
- Only individuals linked with BCCfE Drug Treatment Data are included.
- Individuals without any CD4 or vL test since diagnosis are excluded.
- Individuals diagnosed less than half year for a given time period are excluded.
- Individuals deceased before the end of a given time period are excluded.
- CD4 and Viral load testing records that occurred prior to diagnosis date are excluded from this analysis.
- CD4 and Viral load testing records with either missing dates or missing values are excluded from this analysis.

Data Source: PHSU Reportable HIV Surveillance Data and BCCfE Drug Treatment Data.

VCH47b. Proportion of matched 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: take the value from the current half-year and previous half-year.

Additional Selection Criteria:
- Only individual linked with BCCfE Drug Treatment Data are included.
- Individuals diagnosed less than 9 months from the end of a given time period are excluded.
- Individuals deceased before by the end of a given time period are excluded.

Data Source: PHSU Reportable HIV Surveillance Data and BCCfE Drug Treatment Data.

VCH48. Proportion of patients who are currently prescribed ARVs

Total alive HIV positive individuals who have a prescription for ARVs in a given 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: Total number of individuals who have a prescription for ARVs in the last two months of the given time period.
- Denominator: Total alive HIV positive individuals in a given time period.

- Year to Date: take the value from the current half-year and previous half-year.

Additional Selection Criteria:
- Individuals deceased by the end of a given time period are excluded.

Data Source: PHSU Reportable HIV Surveillance Data and BCCfE Drug Treatment Data.

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

Proportion of alive HIV positive individuals who have not had a prescription for ARVs for at least 2 consecutive months, and not resumed it in the coming month.

Rationale: Not only is it important to ensure that more HIV positive individuals are actively engaged and retained 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: Number of individuals who have not had a prescription for ARVs for at least 2 consecutive months AND have not resumed taking ARVs during the given time period.
- Denominator: All alive HIV positive individuals who have ever been on ARV treatment.
- Year to Date: take the value from the current half-year and previous half-year.

Additional Selection Criteria:
- The last four month ARV value will be considered in a given time period.
- Records with ARV prescription prior to HIV diagnosis are excluded.
- Individuals deceased by the end of the given time period are excluded.

Data Source: PHSU Reportable HIV Surveillance Data and BCCfE Drug Treatment Data.

VCH51. Proportion of individuals newly taking ARVs who achieve viral suppression within 9 months since treatment starts

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 of individuals who adhere to ARV treatment protocols achieve virologic suppression, and thus measuring this status serves as a proxy measurement for treatment adherence.

Analytical Definition
- Numerator: A subset of the denominator with having two consecutive viral load 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 in a given time period and who have at least two viral load tests on record.
- Year to Date: take the value from the current half-year and previous half-year.

Additional Selection Criteria:
- This cohort will retrospectively select back over the past 12 months.

- Individuals deceased by the end of the given time period are excluded.
- Individuals with first initiative ARV prescription prior to HIV diagnosis are excluded.
- Viral load testing records that occurred prior to diagnosis date are excluded from this analysis.

Data Source: PHSU Reportable HIV Surveillance Data and BCCfE Drug Treatment Data.

VCH52. Proportion of all individuals on ARVs who currently virally suppressed with viral load less than 200 copies/mL

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

Rationale: Adherence to treatment protocols is essential to reducing the morbidity and mortality associated with HIV and AIDS. The majority of 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.

Analytical Definition
- Numerator: A subset of the denominator who have two consecutive viral load records of <200 copies per/mL and with at least 3 month apart in the given time period after therapy start.
- Denominator: All HIV positive individuals who were on ARV treatment in a given time period and who have at least 2 viral load tests on record.
- Year to Date: take the value from the current half-year and previous half-year.

Additional Screening Criteria:
- This cohort will retrospectively select back over the past 12 months.
- Individuals deceased by the end of the given time period are excluded.
- Individuals with first initiative ARV prescription prior to HIV diagnosis are excluded.
- Viral load testing records that occurred prior to diagnosis are excluded from this analysis.

Data Source: PHSU Reportable HIV Surveillance Data and BCCfE Drug Treatment Data.

VCH53. Mean monitored viral load of all known HIV positive individuals within VCH

Mean vL values of all HIV positive individuals in the dataset within a given time period.

Rationale: Mean monitored 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.

Additional Selection Criteria:
- Individuals deceased by the end of the given time period are excluded.
- Viral load testing records with either missing dates or missing values are excluded from this analysis.

Data Source: PHSU Reportable HIV Surveillance Data and BCCfE Drug Treatment Data.

VCH54. Proportion of all individuals with viral load greater than 200 copies/mL

The proportion of HIV positive individuals who have at least a vL tests >200 copies/mL within the given time period.

Rationale: HIV positive individuals with vL levels >200 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 monitored viral load.

Analytical Definition
- Numerator: A subset of the denominator who have at least a viral load >200 copies/mL within a given time period.
- Denominator: All alive HIV positive individuals in the dataset

Additional Selection Criteria:
- Individuals deceased by the end of the given time period are excluded.
- Viral load testing records with either missing dates or missing values are excluded from this analysis.

Data Source: PHSU Reportable HIV Surveillance Data and BCCfE Drug Treatment Data.

Further Graphs, Maps and Tables

Mean Monitored Viral Load

Rationale: Community viral load is a population-based measure of HIV-infected individual's concentration of plasma HIV-1 RNA (viral load). It is an attractive indicator to monitor the progress of HIV care and treatment when assessed over time. However there is some confusion over the definition and measurement of this indicator. In August of 2011, the US CDC issued a guideline on measurement of community viral load. The document proposed a family of viral load measurements, including population viral load, community viral load, in-care viral load and monitored viral load. **In this report, we will use the monitored viral load to track the progress of HIV care and treatment.** Monitored Viral Load is limited to the readily observable HIV viral loads of persons who have been diagnosed with HIV infection, who are receiving HIV medical care and disease monitoring through viral load testing, and whose test results are available for surveillance. The guideline also suggests using the most recent viral load result per person for the analysis in the given time period.

Additional Selection Criteria:
- The most recent viral load is used to the analysis in a given time period.
- Individuals deceased by the end of the given time period are excluded.
- Viral load testing records with either missing dates or missing values are excluded from this analysis.

Data Source: PHSU Reportable HIV Surveillance Data and BC CfE Drug Treatment Data.

Appendix B. Population Monitoring
Data Sources

<div align="center">**Appendix B – Population Monitoring Data Sources**</div>

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 VCH population.

Data on POC preliminary positives, false positives and previous positives is received from VCH CD Control Department. All clinics in VCH 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 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 take into account multiple HIV tests for same sample, but do 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.

PHSU Reportable HIV Surveillance 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 at time of diagnosis, 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

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.