

Shifting the *paradigm*

The history of the Vancouver  STOP HIV/AIDS Project

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About CATIE

CATIE is Canada's source for up-to-date, unbiased information about HIV and hepatitis C. We connect people living with HIV or hepatitis C, at-risk communities, healthcare providers and community organizations with knowledge, resources and expertise to reduce transmission and improve quality of life.

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Executive Summary

The Seek and Treat for Optimal Prevention of HIV/AIDS (STOP) Project was a three-year pilot to March 31, 2013, funded by the Ministry of Health. The aim of the STOP Project was to expand HIV testing, treatment, care and support to reduce HIV transmission and improve the quality of life of people living with HIV in British Columbia (BC). Funding was provided to Vancouver Coastal Health (VCH), Northern Health, Provincial Health Services Authority, Providence Health Care (PHC) and the BC Centre for Excellence in HIV/AIDS.

To accomplish the goals of the STOP Project within the city of Vancouver, Vancouver Coastal Health and Providence Health Care came together to form the Vancouver STOP HIV/AIDS Project (Vancouver STOP Project). Through this partnership, the Vancouver STOP Project approached the theoretical underpinning of STOP, the theory of treatment as prevention, as a *framework* through which to address all aspects of the HIV continuum of care. In doing so, they successfully facilitated transformation across the entire system of care in the city—across HIV testing, diagnosis and case finding, linkage to care for new and existing clients, HIV treatment and retention, and HIV support.

The Vancouver STOP Project had the following aims, which were guided by the STOP Project goals: 1) reduce HIV incidence; 2) improve early detection of HIV; 3) ensure timely access to high-quality and safe HIV/AIDS care and treatment; 4) improve the client experience in every step of their HIV/AIDS journey; and 5) demonstrate system and cost optimization.

The Vancouver STOP Project met these aims and ultimately transformed the HIV system of care in the city through a variety of initiatives and activities, including community engagement with people living with HIV, evidence review, consultations with service and healthcare providers, the development of population-specific reports, constant assessment of the current state of the HIV system of care, policy change, and the funding, monitoring and evaluation of over 40 pilot activities.

Vancouver STOP Project activities: quick wins, pilot projects and changes to existing practice and policy

Using community stakeholder consultation, internal dialogue and visioning, and evidence review, the Vancouver STOP Project identified, implemented and tested activities that would achieve STOP goals from early 2010 to March 31, 2013.

The central strategy of the Vancouver STOP Project as they implemented activities to meet the goals of STOP was to build on the existing infrastructure of services in Vancouver rather than develop entirely new organizations. To achieve their goals, the Vancouver STOP Project set three priorities: first, to expand the reach and capacity of effective programs in the city; second, to implement new ways of offering services in each step of the client journey; and third, to enhance

linkage across the system of care. Some activities were relatively easy to implement and others required significant long-term planning and practice change.

Although all of the Vancouver STOP Project's activities are often referred to as "pilots," in practice the project implemented three different types of activities across the client journey: quick wins, pilot projects and changes to existing practice and policy.

The two partner organizations in the Vancouver STOP Project funded activities within their own programs and clinics and collaborated with other community organizations to implement projects on behalf of the Vancouver STOP Project.

Activities related to HIV testing and diagnosis

In 2010, during the time when the Vancouver STOP Project was investigating possible activities and pilots, evidence suggested that Vancouver's risk-based testing model was not reaching everyone who needed an HIV test—approximately 25% of people who were living with HIV still did not know their status, despite extensive risk-based testing opportunities. Among those who were diagnosed, 60% were diagnosed after they should have already been on treatment. Nearly a fifth of patients were diagnosed very late in the course of their illness.

The Vancouver STOP Project's leadership believed that, to expand HIV testing options and increase diagnoses, the model for testing needed to be fundamentally shifted. The healthcare system, through its clinical services, could be used to ensure that most people who were infected with HIV had the opportunity for a diagnosis. The Vancouver STOP Project hypothesized that the way to mobilize this system and encourage people to be tested for HIV was to normalize HIV testing. This normalization could be accomplished by offering HIV testing at every opportunity to all patients engaging with the healthcare system who had ever had sex and who had not been

tested in the last year—something that would represent a fundamental shift in the HIV testing paradigm in the city.

This shift was represented by a refocusing of HIV testing from a singular strategy of risk-based HIV testing to one that combined a routine offer of HIV testing approach with risk-based testing. Specifically, a three-pronged, integrated strategy was taken to expand HIV testing across Vancouver: the routine offer of HIV testing in family practice, the routine offer of HIV testing in acute care, and targeted HIV testing in high-prevalence populations (including enhanced testing in settings already offering HIV testing and expansion of testing to new venues).

To implement the routine offer of HIV testing, the Vancouver STOP Project sought buy-in from clinical and operational leadership in multiple settings, as well as from the College of Physicians and Surgeons of British Columbia, through ongoing and intensive engagement activities; supported changes to pre- and post-test counselling policy; and offered extensive support to physicians offering the test.

To expand HIV testing in targeted (high prevalence) settings, a small team of nurse educators came together to support several services and settings that were identified as locations where increased access to HIV testing would benefit clients.

Activities related to linkage, engagement and retention in treatment, care and support

The Vancouver STOP Project sought to improve the client journey across the full continuum of HIV services. One of the most significant aspects of this work was the effort to, and ultimately the success in, enhancing linkage, engagement and retention in all components of this continuum.

Accessing and remaining in care can be a challenge for people who are newly diagnosed and for people living with HIV or AIDS who have known their status for some time. Providing support to people living with HIV or AIDS to ensure their engagement and retention was a significant component of the Vancouver STOP Project's goal to improve the client journey.

To reduce the number of people lost to care after their diagnosis and to increase the number of people engaged in care, the Vancouver STOP Project developed a strong and reliable system for follow-up and engagement in care, which was made up of multiple discrete but interconnected pilots. Part of the success of the Vancouver STOP Project is directly attributable to these new or expanded services in Vancouver and the fact that these services, which serve a diversity of clients, were implemented almost simultaneously.

These activities included the enhancement of linkage mechanisms from HIV testing sites; the creation of new navigation and linkage services, such as the Peer Navigation Services Program and the STOP Outreach Team, which specialize in engagement, linkage and retention in care; and the enhancement of existing services that aim to support some of the most vulnerable people living with HIV in Vancouver, such as the Towards Aboriginal Health and Healing Program, the Maximally Assisted Therapy Program and supportive housing services.

Enhanced public health follow-up services

During the Vancouver STOP Project pilot, public health-follow up was established as a critical component of any HIV diagnosis and significant shifts took place in how this follow-up is carried out.

In Vancouver, public health follow-up is the primary responsibility of VCH Communicable Disease Control (VCH CDC). This service includes support to clinicians and clients for diagnosis, partner notification, disclosure and linkage to care. It is staffed by a team of public health nurses and directed by the medical health officer for communicable diseases.

Before the initiation of the Vancouver STOP Project, public health follow-up for people diagnosed with HIV included a relatively passive process for partner notification and some case management of clients in need. The role of public health in the care of people diagnosed with HIV was not very well known to healthcare providers in the city, and the services that VCH CDC offered were not fully integrated with the HIV primary care of those recently diagnosed, nor were these services maximized to benefit clients and their partners.

The Vancouver STOP Project provided an opportunity to expand and improve public health partner notification and integrate it more effectively into HIV treatment, care and support services. Working with the medical health officer for communicable diseases, the Vancouver STOP Project focused on improving the measurement of outcomes of partner notification to determine where notification was occurring optimally and where it needed to improve; engaging and supporting healthcare providers; and engaging people living with HIV to actively link them to care.

Perhaps the single most important change to public health follow-up was the shift from a passive to an active approach. Today, as a result of the Vancouver STOP Project, nurses from VCH CDC actively follow up with partners who have been notified to ensure they get tested, receive their results and, if found to be positive, receive the care and support that VCH CDC can provide.

Developing and implementing a monitoring and evaluation framework

The Vancouver STOP Project activities were monitored and evaluated at the provincial level, the local health service delivery area level and at the pilot project level.

Provincial-level monitoring and evaluation, using 29 indicators, were conducted by the BC Centre for Excellence in HIV/AIDS using provincial testing data from the BC Centre for Disease Control and provincial treatment data from the provincial drug treatment program at the BC Centre for Excellence in HIV/AIDS.

Monitoring and evaluation at the level of the local health service delivery area and pilot project took place using a two-pronged approach. The first prong focused on health service delivery area level. Through a partnership with the Public Health Surveillance Unit (PHSU), which is a part of VCH, the Vancouver STOP Project Team developed and formalized a population monitoring and program evaluation framework. This framework informed the overall monitoring outputs and outcomes of STOP at a population level within Vancouver and included over 50 indicators. These activities were led by PHSU, in close consultation with the Vancouver STOP Project. Although some of the data required to assess the population-level success of the Vancouver STOP Project were accessible within VCH, most of the data were obtained by establishing data linkages with a variety of groups, including the BC Centre for Disease Control and the BC Centre for Excellence in HIV/AIDS.

The second prong comprised analyses at the level of individual pilot projects funded by VCH and or PHC; these analyses were conducted by staff of the Vancouver STOP Project. This prong included developing pilot project logic models and assessing short- and long-term pilot outcomes, using qualitative and quantitative data collected in partnership with pilot project partners.

The monitoring and evaluation of the Vancouver STOP Project was designed to allow the project leaders, other leaders and relevant committees to make informed decisions regarding project steering, implementation and resource allocation.

Planning for the future state of HIV services

In addition to implementing system change across the continuum of care, the Vancouver STOP Project also carried out intensive “future state” planning activities. The purpose of these activities was to support a redesign of the current system of care and services to create an ideal state for people living with and at risk for HIV.

Knowledge transfer and exchange

The Vancouver STOP Project prioritized the documentation of key pilot activities and outcomes and the overall implementation of the project through PHC and VCH. Their goal in documenting the project was to ensure that the lessons learned from this groundbreaking project are not lost and successes can be sustained.

In April 2012, CATIE, as Canada’s HIV and hepatitis C knowledge exchange broker, was engaged to support the Vancouver STOP Project’s knowledge exchange activities. This included the development of a knowledge exchange plan, the publication of 13 case studies in CATIE’s online Programming Connection, the publication of a report on the overall implementation of the Vancouver STOP Project, and the recording of the Ministry of Health’s STOP Project Provincial Expansion Knowledge Exchange Kickoff Event in January 2013. For more detailed information on specific pilot activities, please see CATIE’s Programming Connection case studies (www.catie.ca/pc)

Conclusions drawn from the experience of the Vancouver STOP Project

In implementing treatment as prevention in the real world, the Vancouver STOP Project was not only successful in meeting the overall aims of the STOP Project pilot but it also generated much information about the ideal landscape of HIV services in Vancouver. Lessons were learned about how to take the first steps toward changing a system of care and about what

must be in place to ensure success. The activities of the Vancouver STOP Project also had unintended consequences, which should be considered by others attempting to change their own system of care to better address the needs of people living with and at risk for HIV. All of the lessons learned and key conclusions drawn from the experience of the Vancouver STOP Project can be found in the full report: *Shifting the Paradigm: the History of the Vancouver STOP Project*.

Introduction

The Seek and Treat for Optimal Prevention of HIV/AIDS (STOP) Project was a three-year pilot (from February 4, 2010, to March 31, 2013) funded by the Ministry of Health to expand HIV testing, treatment and support with the goal of reducing HIV transmission in British Columbia (BC). Funding was provided to Vancouver Coastal Health, Northern Health, Provincial Health Services Authority, Providence Health Care and the BC Centre for Excellence in HIV/AIDS.

The Vancouver STOP HIV/AIDS Project (Vancouver STOP Project), a partnership between Vancouver Coastal Health and Providence Health Care, sought to accomplish the goals of the STOP Project within the city of Vancouver. This partnership was developed in February 2011.

By approaching treatment as prevention, the theoretical basis for the provincial initiative, as a *framework* through which to address all aspects of the HIV continuum of care, the Vancouver STOP Project successfully facilitated transformation across the entire system of care—across HIV testing, diagnosis and case finding, linkage to care for new and existing clients, HIV treatment and retention, and HIV support.

Through community engagement with people living with HIV, evidence review, consultations with service and healthcare providers, the development of population-specific reports, constant assessment of the current state of the HIV system of care, policy change, and the funding, monitoring and evaluation of over 40 pilot activities, the Vancouver STOP Project changed the landscape of HIV care in Vancouver.

The Vancouver STOP Project had the following aims, which were guided by the MOHS STOP Project goals:

- reduce HIV/AIDS incidence in Prince George and in Vancouver’s “inner city”
- improve early detection of HIV
- ensure timely access to high-quality and safe HIV/AIDS care and treatment
- improve the client experience in every step of HIV/AIDS journey
- demonstrate system and cost optimization

In addition to implementing system change across the continuum of care, the Vancouver STOP Project also carried out intensive “future state” planning activities. The purpose of these activities was to support a redesign of the current system of care and services to create an ideal state for people living with and at risk for HIV.

The Vancouver STOP Project also prioritized documenting key pilot activities and outcomes and the overall implementation of the project through Providence Health Care and Vancouver Coastal Health. Their goal in documenting the project was to ensure that the lessons learned from this ground breaking project are not lost and successes can be sustained.

This document describes the overall implementation of the STOP initiative through the Vancouver STOP Project. For more detailed information on specific pilot activities, please see CATIE’s Programming Connection case studies (www.catie.ca/pc)

Conclusions drawn from *the experience of the Vancouver STOP Project*

Efforts to address the social determinants of health cannot be siloed from efforts to address medical needs. The Vancouver STOP Project, while labelled as a “seek and treat” project, built care and support programs around both the medical needs of clients and their needs related to the social determinants of health. To achieve the goals set out by the Ministry of Health, it was critical that programs to address health more broadly than “seeking” and “treating” be developed.

The boundary between hospital care and community care is artificial. When an HIV-related initiative is being developed, consideration must be given to the ways in which people engage in and are linked across the range of HIV testing, care, treatment and support programs in the real world: if the initiative is to be successful, the boundary between hospital care and community programs needs to be removed. This common boundary disrupts the continuity of care (the client journey) and therefore is harmful rather than helpful to the patient.

A strong existing infrastructure of HIV prevention services is important. The MOHS goals for the STOP Project, which informed the activities of the Vancouver STOP Project, did not explicitly include HIV prevention. However, robust HIV education, condom distribution and harm reduction services were already in place in Vancouver. These services are a part of the client journey and contributed to the overall success of STOP in Vancouver. If this project had been rolled out in a region without robust primary

prevention services and a strong culture of harm reduction, it may have been more of a challenge to achieve success.

Stigma still has a profound impact. Stigma has an impact on people’s willingness and ability to access testing, acknowledge their HIV status or engage with healthcare providers. Stigma must be addressed at multiple levels for HIV prevention and treatment efforts to reach the widest possible audience and remove barriers to sexual health, HIV testing, access to care and receipt of treatment.

The implementation of a “treatment as prevention” project created a new category of people: the unsuppressed. To optimize individual health outcomes and to reduce community-level viral load, achieving a suppressed viral load among people living with HIV is critical. Therefore, one indicator of success used by the STOP Project was viral load. However, the unintended consequence of the monitoring of this indicator was that a new category of people was created: the unsuppressed. Typically, these individuals are already the most marginalized people living with HIV, and the creation of this new category may contribute to their further marginalization.

STOP resulted in new service priorities. The Vancouver STOP Project’s goals contributed to a broader dialogue among HIV service providers regarding priority activities and resulted in a sharpening of focus on specific components of prevention, testing, treatment and engagement in care. Some programs that were

previously supported by health authority funding did not align with the specific goals of STOP and thus did not receive STOP pilot project funding, even though they were effective in other ways. This sometimes placed a strain on the relationships of some service providers with the health authority.

Implementing the diversity of pilots necessary to achieve success requires three interconnected strategies. To successfully transform the system of care in Vancouver, it was important to (a) expand the capacity of existing effective services, (b) implement and test new, innovative pilots and (c) increase capacity for clients' linkage and engagement to and retention in these services.

Service providers have to work together but must maintain distinct practices. The Vancouver STOP Project developed linked strategies that represented goals for each step of the client journey, through which pilot projects were developed and tested. This approach called for service providers to work closely together, more closely than they had done previously, while maintaining a clear focus on their respective roles and accountabilities.

A diversity of partners must be involved to make systemic changes, but this also creates challenges. The Vancouver STOP Project formally and informally required the involvement of a considerable number of partners to achieve program success. Managing the multiple priorities of diverse organizations to achieve a common goal was a major challenge. This was overcome through a commitment to communication between partners, facilitated by the development of project teams and multiple, ongoing, in-person meetings and forums.

Engagement of services across the entire system is required for success. Important improvements can be made to the client journey through changes to small, discrete services. However, to have a major impact on the HIV epidemic, clinical practice settings across the entire system must be engaged. To enhance HIV testing, for example, the Vancouver STOP Project couldn't

simply do more of the same thing. Rather, they needed to change HIV testing policy and incorporate HIV testing into a wide variety of practice settings.

Increasing the capacity of multiple, discrete services at the same time can have a major impact at the population level and at the individual level. The Vancouver STOP Project enhanced services across the HIV continuum of care almost simultaneously. This was a critical component of the success of the overall project: by enhancing the capacity of HIV/AIDS services, the Vancouver STOP Project improved the ability of the health infrastructure to provide appropriate and timely services. On a population level, this was fundamental to reducing community viral load, one of the markers of success for the project. At the level of the individual, it also had an impact. When clinics' capacity to address the medical needs of patients is enhanced at the same time as the capacity to address patients' housing and other psychosocial needs is improved *and* the system is more equipped to engage and retain them in care, improvements are seen in the lives of individual patients.

To significantly change the epidemic, the testing paradigm must shift from risk-based assessment alone to routine and risk-based assessment. Given that approximately 25% of people with HIV do not know their HIV status, risk-based testing does not reach everyone who needs an HIV test. To expand HIV testing options and increase the number of diagnoses in Vancouver, the model for testing needed to be fundamentally shifted: it needed to be refocused from a singular strategy of risk-based HIV testing to one that combined routine offers of HIV testing (diagnostic testing independent of risk) and risk-based testing.

Shifting the testing paradigm requires a three-pronged approach. To expand HIV testing, three approaches were taken: routine offer of HIV testing in family practice and acute care; routine offer of HIV testing in high-prevalence populations, such as the populations reached by mental health and addiction services; and enhanced access to testing for the populations at greatest risk.

Partnerships between peers and healthcare providers work. The Vancouver STOP Project piloted two peer-based initiatives, both of which proved successful in improving the client journey. The Peer Navigator Services Program demonstrated that peers and clinicians can work closely together effectively. It also demonstrated that peers provide a shared experience of diagnosis and engagement in care and their challenges, which can have a significant impact on the level of patient engagement and the effectiveness of education and support activities. The peer testing pilot demonstrated that peers can effectively offer HIV testing and that peer testing is acceptable to community members. For more information on these pilots, please see www.catie.ca/pc.

Housing is a key factor in the stabilization of people living with HIV, but tailored housing solutions are required. For people living with HIV in Vancouver who are homeless, under-housed or street involved, finding safe and suitable accommodations can be difficult. The Vancouver STOP Project partnered with two established housing providers that offer services to a broad range of people in the city, including but not limited to people living with HIV. This collaboration allowed clients to be offered flexible housing options through three strategies: a housing stabilization support, supported independent living subsidies and access to units in a supported housing building.

A city-wide linkage and engagement-in-care system can be created through multiple, interconnected services. The Vancouver STOP Project enhanced linkage to care across the entire continuum through the development of new linkage services. New teams were developed and processes were established for follow-up after HIV diagnosis in targeted HIV testing sites, in family practices and in acute care. New services that specialize in engagement and linkage were established, such as the STOP Outreach Team and peer navigators. Programs that aim to support some of the most marginalized people living with HIV/AIDS in Vancouver, such as the Maximally Assisted Therapy Program, were enhanced. Together, these interconnected services created a city-wide system of linkage and engagement.

The STOP Outreach Team, through outreach and embedded team members, created an interconnected system of linkage and engagement in the city. The STOP Outreach Team, an interdisciplinary clinical team developed to deliver intensive case management, included a core outreach team and team members embedded in local agencies. The major benefit of this model was the “threading together” of the STOP Outreach Team’s services with services that already exist in the community. This allowed for more integrated service delivery across the client journey. Community services with embedded STOP Outreach Team members had an enhanced capacity to provide the needed care and support to clients referred to them by other STOP Outreach Team members.

Non-nominal HIV testing can be a barrier to effective linkage. Access to non-nominal HIV testing is very important for some communities. However, non-nominal testing has had an unintended effect on the accuracy of epidemiological data and on the pursuit of public health follow-up activities that assist newly diagnosed clients to connect to appropriate HIV care. Given this, the Vancouver STOP Project recommended changes to testing policy to include nominal testing and specific strategies for anonymous testing. When non-nominal testing is in place, by providing the appropriate health information and support to authorized care providers, they can ensure that clients are supported to remain connected to care. This approach also allows for system performance to be measured and enhances epidemiological monitoring. Vigilance regarding privacy issues can allay clients’ concerns regarding the appropriate use of individual health data.

The requirement of traditional pre-test counselling is a barrier to expanded HIV testing. Standard Canadian pre-test counselling practices for HIV testing were developed at a time when HIV was an untreatable condition that led to immune system decline and death. Given that HIV is now considered a chronic, manageable condition, with the best prognosis when diagnosed early, traditional pre-test counselling practices no longer accurately reflect the risks and benefits associated with the test. The requirement

of pre-test counselling was seen as an important barrier to increasing HIV testing. It also makes HIV testing different from any other diagnostic testing, thereby stigmatizing HIV testing. Instead of mandatory pre-test counselling, the Vancouver STOP Project concluded that the information a healthcare provider discusses with a patient before an HIV test should be dictated by the patient's needs and wishes and be appropriate to the clinical setting.

Involve stakeholders meaningfully in the process at all stages. The Vancouver STOP Project implemented a robust stakeholder engagement process, including activities to push information out to stakeholders and solicit input from them. The process included community consultations on existing services in Vancouver, solicitation of feedback on new STOP-funded activities from consumers and health and social service providers, and requests for validation of evaluation results from individual pilot sites, among other things. In addition to improving the services implemented by the Vancouver STOP Project, these activities encouraged buy-in among stakeholders.

Building trust with community and clinical stakeholders is critical but takes time. Relationships must be built with community and clinical stakeholders, which can be a challenge. Community and clinical agencies need to be engaged from the very start, so that the objectives of the project are well understood and so that the agencies can help shape the implementation of activities. Engaging these stakeholders early is important in building trust; it will also support efforts to facilitate and manage expectations related to required practice changes. The project team can also build trust by offering evaluation results in a timely manner—both for individual pilot sites and for the community as a whole at in-person fora.

Engaging operational and clinical leadership when implementing new practice, such as routine testing in hospital, is critical. When the Vancouver STOP Project implemented routine offer of HIV testing in hospitals, a small core team from the Vancouver STOP Project engaged the operational and clinical leadership at each hospital, department and unit in the

implementation process. The active involvement of the hospital's leadership was critical to the success of the initiative, as hospital physicians were galvanized to offer testing to their patients when their leaders championed routine offer.

Engaging family practitioners and hospital clinicians to routinely offer testing requires tailored support.

Offering tailored support to units and physicians was important because it ensured that the routine offer of HIV testing could be streamlined into already existing structures, increasing the ability of physicians to offer the test as part of other clinical care. Each unit helped the project team understand its workflow, and thus the type of support it would need, through a series of meetings.

Engaging clients in HIV support and treatment is possibly the most time-consuming phase. This can take anywhere from months to years depending on the client; some clients will always require these services and supports for retention in treatment, something that must be respected.

Healthcare providers need to be supported throughout the client journey too. The Vancouver STOP Project developed a culture in which *providers* were engaged and supported throughout the client journey, which helped improve services across the care continuum. Healthcare providers were engaged and supported through a variety of mechanisms, including education via preceptorship and the education team (STOP Outreach Team), social marketing and activities of the Communicable Disease Control division of VCH. This extensive support and follow-up with care providers demonstrated that the Vancouver STOP Project was committed to providing strong linkage and engagement throughout the client journey; it implicitly valued and encouraged the contribution of everyone who plays a role in supporting a person from their HIV diagnosis through their linkage to care, in ways that made sense to that provider.

Have the right leadership team and have them in place as early as possible. The Vancouver STOP Project was challenged by the timeline of this project (three

years). In the early stages of the project, there was little time to properly plan implementation. Having engaged, dedicated and accountable organizational leadership at senior levels in place early is critical for success.

Hire an experienced project manager early. Even if a project lacks an overall plan in its early stages, the risk of problems such as schedule delays, scope creep and duplication of efforts can be reduced if valid operational processes and effective communication processes are put in place at the outset. An experienced project manager can provide a solid starting point for the project, increasing the likelihood that the project will be successful. It is worth the time and effort to provide an effective infrastructural foundation for the project as this will provide the jumping-off point for the entire team's efforts.

Put a monitoring and evaluation framework and team in place from the start. Epidemiological data and initial analyses became the road map for the complex Vancouver STOP initiative. A population-level monitoring framework, implemented early, helped the project by providing population-level data, which allowed the team to understand the effect of what was going on, where to focus efforts, and ultimately the impact of these efforts. Evaluation played a similarly critical role in supporting the project overall. Evaluation findings enabled stakeholders to understand the impact of specific actions and interventions, motivated change and provided an objective basis for decision-making. A dedicated team of epidemiologists and evaluators was critical to the successes experienced in the Vancouver STOP pilot, and a similar team should be put in place at the beginning of any initiative of this scope.

A brief history of the *Vancouver STOP Project*

The announcement and initial activities (2009–10)

On February 4, 2010, the Hon. Kevin Falcon, Minister of Health Services, announced a \$48-million funding commitment by the Government of British Columbia to Vancouver Coastal Health (VCH), Northern Health, the Provincial Health Services Authority, Providence Health Care (PHC) and the BC Centre for Excellence in HIV/AIDS to implement the STOP HIV/AIDS Pilot Project, a pilot initiative to expand HIV testing, treatment and support services to clinically eligible individuals in Vancouver and Prince George. The BC Ministry of Health Services committed the funds over four fiscal years (2009–13). VCH and PHC received their first-year funds (2009–10) at the end of that fiscal year, in February 2010. Therefore, while the STOP HIV/AIDS Project is often described as a four-year project (2010–13), the Vancouver STOP Project conceives of itself as a *three*-year project, reflecting that funds were only available for three fiscal years plus one month (February 2010 to March 2013.)

Challenged by the funding announcement

Although the new money from the Ministry of Health represented an opportunity of fundamental importance for PHC and VCH, the way in which the funding was announced and the timing of the initial release of funds to the health authorities created the first major project challenge for the partners.

Neither VCH nor PHC knew very much about this funding before the announcement from the ministry, and thus they had not carried out any planning or partnership building before the release of the funds. As a result, it proved to be impossible for either VCH or PHC to spend all of the funds allocated for the 2009–10 fiscal year.

Further, the initial announcement from the MOHS specified that this project would target people in the Downtown Eastside of Vancouver. This detail of the funding created a second challenge for the leaders of VCH and PHC. It is true that a disproportionate number of people who use injection drugs and people living with HIV/AIDS live in Vancouver's Downtown Eastside. However, Vancouver's progressive and comprehensive harm reduction programs and other initiatives had already been working to address HIV in this region. Vancouver's HIV epidemic was primarily among gay men (most of whom lived outside the targeted area), and in specifying the Downtown Eastside the announcement had almost entirely discounted this group. Although project leaders were able to adjust the description of the target community to the "inner city," it was a challenge to determine how to effectively support programs that serve gay men and all others at risk for or living with HIV while abiding by the parameters of the funding.

However, over time, it became clear that the partners who received funding had flexibility in how they addressed the epidemic in their region. Hence, while the lack of a concrete plan was seen as a challenge initially, it ultimately enabled the team to approach the pilot with a spirit of innovation and a commitment to evaluation and learning.

Understanding "treatment as prevention": a method or a framework?

The funding did not come with a detailed plan beyond the direction to implement treatment as prevention. To determine how to spend their funding in 2009–10 and in future years, VCH and PHC first reflected on the implications of the task at hand. At this stage, the discourse on the STOP Project had focused almost exclusively on treatment as prevention as a theory backed by strong evidence of effectiveness from observational studies, a randomized controlled trial and modelling studies. The expectation seemed to be for the STOP Project to turn this theory into a method.

Therefore, initial communication and dialogue about STOP presented treatment as prevention as the primary method that should be used to address HIV. Other methods, such as harm reduction or addressing the social determinants of health, were not highlighted in these conversations. In the first month of STOP, the leadership at VCH and PHC understood the project through a "seek and treat" lens: they were responsible for ensuring that many more people had access to HIV testing and took the test, diagnosing far more people and supporting as many people as they could to start and stay on HIV treatment. The very first activities carried out, therefore, were presentations on the basic concepts of treatment as prevention to senior leaders in VCH to offer direction on how to proceed.

As VCH and PHC moved forward, they shifted from seeing treatment as prevention as a method to seeing it as a framework by which to organize their HIV response. Eventually, the Vancouver STOP Project defined treatment as prevention as a framework by which to address the HIV continuum of care. By using this framework, the Vancouver STOP Project was able to create a more effective response in the real world, which included behavioural, sociocultural, political, legal and other biomedical approaches.

Planning and initial activities

Even in the early days of the first year of the project, VCH and PHC understood that the STOP Project was a unique opportunity to reflect on and improve the quality of the full continuum of HIV care: testing, diagnosis, linkage to care, treatment and support. Their challenge, however, was to move the theory of a treatment-as-prevention method into practice. From April 1, 2010, to March 31, 2011, VCH and PHC conducted extensive planning and implemented the first funded activities. They also learned important lessons that would improve their ability to meet STOP's goals in later years.

To gain a common understanding of the current state of HIV testing services and treatment and adherence services, gaps in knowledge and possible solutions to these gaps, VCH carried out the first of many "current state" analyses in early 2010. This analysis included investigation of the existing system of HIV care in Vancouver to identify successes, challenges and gaps. They also conducted consultations and reviewed the evidence to identify innovative approaches to HIV testing, linkage to care, treatment and support, some of which the Vancouver STOP Project would test on the ground.

Through this exploration of gaps and solutions, the project team began to identify "quick wins" (activities that could be implemented quickly and easily and that would have a significant impact) and areas where it was expected that it would be easy to ramp up services. In the early stages of the project, it was deemed to be fundamentally important to implement activities that would be relatively easy to establish and likely to succeed, on the basis of evidence of previous program effectiveness. There was intense pressure on VCH and PHC to achieve targets related to HIV testing rates, numbers of positive results and numbers of patients started on antiretroviral therapy, and the first year of the project was not seen as the time to take major risks in terms of pilot implementation.

The quick-win activities were the partners' first attempt to increase capacity for HIV testing and linkages to care, intensive case management and re-engagement in care, treatment and retention in care. Some of the first projects funded were expanded HIV testing among gay men at the Health Initiative for Men Davie Street Clinic and expanded funding for a self-management program at the Vancouver Native Health Society.

Shifting the approach early on

By the middle of Year 1 (2010–11), one of the biggest lessons of the project had already been learned: the partners' plan to use STOP funds almost exclusively to expand the reach and capacity of effective pre-existing programs was the *wrong* approach. By fall of 2010, the project was not meeting its targets. While it was logical for the program leaders to use STOP funds to fill cost gaps in the system, this approach simply further supported the system of HIV care that existed in Vancouver before STOP, which was a system that was not performing optimally. Instead, in addition to expanding the capacity of existing effective programs, the Vancouver STOP Project had to create massive change in how public health providers engaged in the processes of HIV testing, linkage, treatment and care. Ultimately, this is where the majority of the partners' efforts were directed in future years.

One of the earliest examples of this new approach, which proved to be one of the most fundamental aspects of the Vancouver STOP Project, was implemented at the end of Year 1: the project established the STOP Outreach Team, an integrated clinical outreach team that worked across the city of Vancouver, linking people newly diagnosed with HIV or not engaged in care to services. VCH and PHC also designed and funded other pilot innovative projects with existing Vancouver-based agencies, such as the Peer Navigators Program.

Perhaps two of the most important activities of the first year, however, did not involve pilot implementation. First, in mid-2010, VCH and PHC hired a senior project manager for the project, who built a small

team in this fiscal year. This person, and ultimately the project team, was instrumental in supporting project leaders and project tasks—large and small—to ensure that the project achieved its goals. It was with the project manager's guidance that effective project plans for 2011–12 were developed and the framework for the memorandum of understanding initiatives was designed, along with initial monitoring and evaluation plans to ensure that the necessary data were collected in a realistic time frame (7-month funding cycles). Second, in February 2011, VCH and PHC merged their budgets, leadership and strategies to become the Vancouver STOP Project.

In January 2011, an evaluation lead and epidemiologist were hired (before this, a monitoring and evaluation framework for VCH/PHC did not exist, nor did a project logic model.) During this month, the first activities, mostly the quick wins, were funded. Some initial indicators and targets were established as part of the deliverables in the memoranda of understanding, and the project's monitoring and evaluation framework was starting to take shape.

In the third and fourth quarter of 2010–11, extensive planning took place to develop pilots for 2011–12. Data from Year 1 activities showed that although the project to date had seen some successes, the impact on overall HIV testing, linkage, care and support services was marginal. There was some quality improvement at the level of the individual accessing programs, but very little change was taking place at a population level.

Even with the important improvements in care implemented in this year, the scope of the project had been far too modest. The newly formed Vancouver STOP Project had to implement programs that would have a major impact on the HIV epidemic in a way that had never been seen before. They needed to engage clinical practice settings across the *entire system*.

To enhance HIV testing, for example, they needed to develop a compelling rationale for expanding HIV testing and incorporating it into all clinical practice settings, and the project needed to provide supports

for clinicians to offer the test. This meant changing HIV testing from being the sole domain of a few programs providing sexual health services to targeted populations to making it the daily business of every program—youth clinics, primary care clinics, family practices, mental health and addiction programs, housing services, residential care services, student health services, abortion clinics, acute care programs and others. In fact, the project needed to change existing HIV testing policy.

The emergence of clear planning priorities

Clear priorities for programming had emerged. The Vancouver STOP Project needed to work to expand HIV testing, including point-of-care testing and laboratory HIV testing, in a broad range settings. They needed to initiate peer-based testing, develop public health messages to encourage testing among the public *and* health care providers, and enhance support for newly diagnosed people. After months of consultations and evidence review, the Vancouver STOP Project Core Team (described below in the section on the governance model) met to determine which activities should be funded in future years. By the end of this year, the team had selected 27 pilot projects to implement and evaluate in the next year.

Pilots implemented in the first year included the following projects.

HIV testing

- initiation of peer HIV testing project in partnership with the PHS Community Services Society
- initiation of HIV testing in dental clinics
- initiation of point-of-care testing via the John Ruedy Immunodeficiency Clinic (IDC) at St. Paul's Hospital
- expansion of sexual health clinics with Health Initiative for Men
- initiation of outreach testing for high-prevalence populations via the STOP Outreach Team
- initiation of routine testing in acute care and family practice settings

HIV treatment and support

- expansion of programs at Vancouver Native Health, including Towards Aboriginal Health and Healing (TAHAH) and the Positive Outlook Program (POP)
- enhancement of testing and treatment supports at the PHS clinic
- creation of the Peer Navigators Program with Positive Living BC and the IDC at St. Paul's Hospital
- expansion of the Maximally Assisted Therapy (MAT) program
- expansion of the IDC clinical team at St. Paul's Hospital, with a focus on clinical case management, mental health support and specialist services

Support:

- partnership with RainCity Housing, Coast Mental Health and McLaren Housing to provide housing stabilization support and access to supported independent living housing
- enhancement of intensive case management at AIDS Vancouver

Intensive case management, care, treatment and support:

- development of the STOP Outreach Team
- expansion of specialist services at the IDC (case management, mental health team, psychology, addiction services)

Pilot rollout, monitoring and evaluation

In Year 2 alone, the Vancouver STOP Project rolled out 27 pilot projects and developed a standard monitoring and evaluation framework. The framework's evaluation component provided the pilots with an overall project logic model and individual pilot logic models, which included indicators and targets to assess progress toward the achievement of STOP's goals. The monitoring component of the framework consisted of 33 population-level indicators relating to HIV testing, diagnosis, linkage to care and treatment.

Produced quarterly by the VCH Public Health Surveillance Unit, the report and analyses were critical in understanding the project's overall progress toward its goals and identifying new priority strategies.

Many of the pilots launched in Year 2 were expansions of existing programs rather than entirely new programs and infrastructure. These pilots represented a balance of evidence-based strategies that fell across the continuum of HIV care by focusing on enhancing broad-based *and* targeted HIV testing, enhancing linkage to care, building treatment capacity and enhancing treatment supports.

The Vancouver STOP Project put considerable resources into HIV testing in Year 2, across a range of clinical settings. In that year, STOP provided funding in the following areas:

- initiation of routine offer of HIV testing for patients admitted to acute care and for patients in general practitioner (clinics and dental offices (the positivity rate in acute care was higher than expected and surpassed published cost-effectiveness thresholds)
- initiation of routine offer of HIV testing for targeted populations in VCH primary care clinics, student health clinics, youth clinics, abortion clinics, addiction services and mental health clinics
- expansion of targeted HIV testing through the STOP Outreach Team in bathhouses, via peer testing at community fairs in the Downtown Eastside, in public health dental clinics and through an enhanced social networking approach for public health follow-up and contact tracing of the partners of people who were newly diagnosed

Testing and diagnosis activities were seen as a success. Not only was routine testing in acute care and community settings deemed to be feasible *and* cost effective, the initiatives outlined above had successfully increased the rate of HIV testing in Vancouver overall. Further, the project was identifying people with HIV at an earlier stage of infection than before (there were slightly fewer cases being diagnosed with

advanced HIV and slightly more detected at the acute stage). Finally, the project was also having increased success in identifying cases of HIV, counselling newly diagnosed people and testing their contacts.

Linkage to care activities were also significantly ramped up in the second and third years of the project. People who were being newly diagnosed through the expanded testing initiatives were being effectively linked to HIV care and support through public health, the STOP Outreach Team and peer navigators, both pilot projects developed in Year 1. By the end of this year, 91% of the STOP Outreach Team's new HIV-positive client referrals had been linked to care, while 100% of the peer navigators' HIV-positive client referrals were linked to care. By the end of Year 2, the majority of the people who were received a positive HIV test were linked to care within 30 days (i.e., they had a viral load test), an indicator of success. However, the linkage status of a small proportion of newly diagnosed people was still unknown.

Over the last two years of the project, treatment and support initiatives expanded as well. These pilot activities aimed to increase access to treatment, support people to stay on treatment and increase the number of people on successful treatment (determined by an undetectable viral load.) Evaluation data indicate that these pilots were successful overall in supporting clients to move toward stability that would put them in a position to consider HIV treatment, supporting clients to make informed treatment choices and supporting others to adhere to treatment.

The MAT program at the Downtown Community Health Centre and the Dr. Peter Centre continued to be supported with STOP funds, as did Vancouver Native Health's POP and TAHAAH programs. The Vancouver STOP Project also expanded its partnerships with Coast Mental Health, RainCity and McLaren Housing, which provide various forms of supportive housing. Vancouver STOP developed housing support positions in these organizations and actual housing units. Self-management programming was also expanded to provide education support to increase

client self-management of HIV. These programs included Season4Change and Ni Wakati (African Women's Group.)

The Vancouver STOP Project also continued to support the Peer Navigators Program, a partnership between Positive Living BC and the IDC at St. Paul's Hospital, the Vancouver STOP Project's tertiary HIV clinic.

The combination of the activities outlined above supported improved re-engagement and retention in care of people living with HIV. The outreach conducted by the STOP Outreach Team and peer navigators, among others, and the increased resources for psychosocial supports contributed to this increased

retention. By the end of Year 2, the Vancouver STOP Project's activities had already led to an increase in new antiretroviral therapy starts as well as modest increases in "re-starts." Given these and other activities, the Vancouver STOP Project was seeing an overall decrease in the community HIV plasma viral load by the end of its second year.

In addition to the continuation and refinement of successful pilots started in 2011–12, the final year of funding, 2012–13, saw the rollout of a small number of new, innovative pilot projects, such as HIV testing in family practice clinics in Vancouver, along with significant sustainability, or "future state," planning, including efforts to build the case for new provincial HIV testing guidelines.

Governance model

The Vancouver STOP Project, a partnership between Vancouver Coastal Health and Providence Healthcare, was responsible for the implementation of the STOP Project in Vancouver. Through this partnership, these two organizations shared governance, funding and reporting responsibilities for the planning and decision-making related to pilot projects and all other aspects of the project.

The Vancouver STOP Project Core Team included Scott Harrison, Providence Health Care (PHC); Julie Kille, PHC; Chris Buchner, Vancouver Coastal Health (VCH); Val Munroe, VCH; Réka Gustafson, VCH; and other key decision-makers from each organization and the BC Centre for Excellence in HIV/AIDS. This team took direction from the senior executive teams of VCH and PHC (led by Dr. Patty Daly and Diane Doyle, respectively) and gave direction to the project team and multiple working groups.

The core team felt that the successful outcomes of STOP would not have been possible without the integration of VCH and PHC into the Vancouver STOP Project.

Vancouver STOP Project Partnership

In the early days of STOP (2009–10,) the provincial Ministry of Health Services (MOHS) funded VCH and PHC separately. However, in February 2011, at the end of the first full year of funding, VCH and PHC chose to collapse their separate budgets, infrastructure and decision-making functions into one large project.

They made this decision for a few reasons. First, VCH and PHC operate within largely the same catchment area: VCH is responsible for service in Vancouver, as well as Richmond, the North Shore and Coast Garibaldi area, the Sea-to-Sky corridor, the Sunshine Coast, Powell River, Bella Bella and Bella Coola. PHC, one of the largest faith-based healthcare organizations in Canada, has the provincial mandate for HIV/AIDS through the BC Centre for Excellence in HIV/AIDS, the John Ruedy Immunodeficiency Clinic (IDC) and the in-patient HIV/AIDS ward (known as 10-C) at St. Paul's Hospital and the HIV/AIDS Acute Care Unit, all of which are accessed by patients from across BC.

Second, VCH and PHC were tasked with the same "job," namely to fulfill the same MOHS goals, largely within the same area. However, based on their different organizations, an artificial boundary had been placed between hospital care and community care. When considering how people living with HIV engage with HIV testing, care, treatment and support programs, it was determined that this boundary was harmful, rather than helpful, as it disrupted continuity of care and the full integration of services, things that were important to develop and maintain if STOP's goals were to be reached. Hence, the partnership was an explicit commitment to the principle that the funding would be used to benefit the population of Vancouver at risk for or living with HIV.

Third, VCH had a significant existing infrastructure for administration. Further, within its first year of STOP funding, VCH started to build a STOP-specific infrastructure. PHC did not have this same infrastructure built by early 2011, nor did they have the capacity to do so in a way that would allow them to meet STOP's goals within the project's time frame.

Therefore, to ensure that individuals in Vancouver were provided with the most comprehensive care possible, VCH and PHC joined forces to become the Vancouver STOP HIV/AIDS Project (the Vancouver STOP Project). This meant that they committed to work collaboratively and co-lead the implementation of STOP in this city. According to the project sponsors from VCH and PHC, the partners joined forces simply because they agreed, “Wouldn’t it make more sense to come to the table together?” and “Wouldn’t it make sense to do our planning together?” This partnership was not mandated by the ministry.

The Vancouver STOP Project partnership itself was one of the key facilitators in the achievement of MOHS goals. The partnership between VCH and PHC was such a success primarily because of the individuals who made up the Core Team. This team included the right mix of leaders: operational leaders from VCH and PHC, a public health physician and senior nurses, many of whom had a history of community-based work in addition to extensive clinical and public health experience. The team members also brought an extensive amount of passion and commitment to the deliverables, and their personalities worked well together. Without this partnership, the implementation of STOP in Vancouver would not have been as successful as it was.

Relationship with the Structured Learning Collaborative

The Vancouver STOP Project had formal partnerships with the BC Centre for Excellence STOP HIV/AIDS Structured Learning Collaborative, a multidisciplinary provincial network of healthcare providers and service users, learning from each other to make effective system-level changes in HIV/AIDS care across the province. The collaborative was established in the first year of the STOP Project (2010–11).

The IDC in St. Paul’s Hospital, a part of PHC, was central to the development of the collaborative; it was one of the first teams to join the collaborative and was asked to bring its considerable expertise in providing holistic care to people living with HIV to the network. IDC also benefited from working with the collaborative, specifically in examining practice change through the more formal lens provided by the network.

VCH also supported 12 clinical teams to participate in the collaborative.

The collaborative evolved into a new initiative called the Provincial Quality Improvement Committee, which continues to collect system-level data and provides webinars to clinical teams.

Administration of the *Vancouver STOP Project*

Project sponsors

The Vancouver STOP Project was administered by the project sponsors (Scott Harrison, Providence Health Care [PHC]; Chris Buchner, Vancouver Coastal Health [VCH]; Réka Gustafson, VCH; and Val Munroe, VCH). The project sponsors played active roles in the implementation of the project, including the planning and design of the project overall, the development of individual pilot project activities, the development of long-term outcomes and at times the implementation of individual pilots. This group gave direction to VCH and PHC staff who also took on leadership roles in the visioning and implementation of the Vancouver STOP Project (Miranda Compton, manager, HIV/AIDS; Julie Kille, operations leader, HIV/AIDS; and Meaghan Thumath, clinical practice leader, HIV/AIDS). Each project sponsor, and the other VCH leads, designed, implemented, monitored and evaluated the Vancouver STOP Project as only one part of their overall responsibilities. This of course was a considerable challenge. The resources required to plan a project as complex as the Vancouver STOP Project were extensive and therefore it was imperative that a project team, which supported the project sponsors and Vancouver STOP Project Core Team, be established.

Project team

The project team was responsible for the management of the Vancouver STOP Project. While the project sponsors and those whom they assigned from their teams (i.e., Miranda Compton, Julie Kille and Meaghan Thumath) led and participated in the planning, design and implementation of the project, the project team was responsible for developing materials, structures

and processes to ensure that planning took place, timelines were adhered to, and the budget was on track.

The project team was also responsible for the evaluation of the Vancouver STOP Project at the pilot project level (population-level monitoring was led by the VCH Public Health Surveillance Unit). This included the design and development of the overall evaluation framework for Vancouver STOP pilot project memoranda of understanding; the development of pilot project logic models, indicators and targets; and the development of collection methods and support for individual pilots to assess their progress toward achieving the goals of the STOP Project. This group worked in close collaboration with VCH's Public Health Surveillance Unit, which was responsible for providing regular, population-level monitoring reports for the city of Vancouver, which demonstrated the overall impact of the pilots. The Public Health Surveillance Unit also led the evaluation of the pilot project on routine offer of HIV testing in acute care, at the hospital population level. For more information on this, please see the section on "Developing and implementing a monitoring and evaluation framework" below.

This team was also responsible for reporting on Vancouver STOP Project initiatives to external stakeholders as requested (e.g., Ministry of Health, HIV/AIDS service providers and community groups, and senior leaders of VCH and PHC Senior Leadership & Executives.)

The project team was led by a senior project manager. The importance of this role, and ultimately of each member of this team, cannot be underestimated. A

very experienced project manager was required to appropriately plan, organize and manage a project of the size and complexity of STOP. Through the work of the project team, extensive project plans were developed, a framework for the memorandum of understanding process was created and initial monitoring and evaluation plans were put in place

to ensure that the necessary data were collected in a realistic timeframe (seven-month funding cycles). The team also led the development of the ideal future state for HIV/AIDS services and the planning for the transition from project mode to sustainment, incorporating the full continuum of care.

Activities to improve *the client journey*

The Vancouver STOP Project made use of the concept of the client journey as an overall organizing framework. The client journey is a conceptual model for how a person proceeds through the system of HIV testing, care, treatment and support. The Vancouver STOP Project was an effort to improve this journey overall while achieving the goals defined for the STOP Project by the Ministry of Health.

To improve the journey overall, each step had to be improved, as well as the linkage and engagement across steps. In other words, the entire landscape of HIV/AIDS services—at the program level and at the system level—needed to be transformed.

To develop an operational plan to accomplish this goal, the Vancouver STOP Project went through a three-year iterative process of consultation, implementation, evaluation and adjustment of approach. Through this, they developed a framework for the ideal state of HIV/AIDS services across the city of Vancouver.

This three-year planning, implementation and evaluation cycle was initiated by Vancouver Coastal Health (VCH) and Providence Health Care (PHC) each trying to obtain a comprehensive picture of the *current* state of HIV services in their respective catchment areas, through the activities outlined below. They identified the successes, efficiencies, system constraints, places where gaps in services existed and unnecessary process steps (duplication, waste and error). As their current state became clear, they were able to develop strategies and actions to achieve their goals in the

form of pilot projects. Some projects were expansions of things that were currently “working” and considered efficient, while others were new initiatives aimed at addressing gaps.

Developing a picture of the current state

From the early days of planning, the Vancouver STOP Project understood that no *one* organization could fully understand the entire system of care in Vancouver or obtain a complete picture of the current state of HIV services. Therefore, VCH and PHC conducted extensive community consultations, internal brainstorming sessions and evidence review throughout the project. Through these activities, an image of the client journey was developed. The client journey changed over time to reflect the constant learning and assessment of activities and achievements. For an example of a client journey from May 2012, please see Appendix 1.

The following sections outline the strategies undertaken by the Vancouver STOP project to determine how to achieve the MOHS STOP goals, including how they engaged stakeholders in consultation, how they reviewed evidence, how they developed high-level strategies to better address each step of the client journey and, ultimately, how they identified, implemented and evaluated actual services to people living with HIV.

Stakeholder engagement

To develop a comprehensive operational plan that reflected the needs of the community and implement accountable, responsive and effective pilots, the Vancouver STOP Project carried out a robust community and clinical engagement process. This process sought the input of people living with and at risk for HIV and of health authority, government, clinical and community-based stakeholders, using methods appropriate for the group.

The Vancouver STOP Project was particularly interested in soliciting input from clinical and community-based care providers who worked with (and were from) the following communities: Aboriginal peoples, youth, people with mental illness, people with addictions, immigrants and refugees, gay men and other men who have sex with men, and homeless persons. Eventually, they also needed to learn from healthcare providers who served the general public, in the context of routine testing in hospitals and clinics.

Formal consultations took place from the first month of project funding until the end of the project at approximately six-month intervals. Communication, feedback and informal consultations also took place between these six-month intervals at specific stages of the project with various stakeholders.

This process supported the development and assessment of priorities at the level of the client journey, by helping to identify elements of service that help or hinder access to HIV testing, follow-up and treatment. This process also informed decisions about the types of activities that would be rolled out, as it helped define strategies to improve the current system of care in Vancouver.

Many of the consultations were seen by the Vancouver STOP Project as mutually beneficial in that they offered an opportunity not only for clinical and community stakeholders to contribute to ongoing planning but also for the project to communicate its response to their ideas.

Vancouver's key community and clinical engagement STOP activities are summarized below.

Meetings with internal and external stakeholders

Formal stakeholder meetings were held from the first month of project funding to the very end of the project.

Within the first month of funding, in April 2010, VCH hosted a community stakeholder information session. This was an important first step in the engagement process, as it offered STOP an opportunity to introduce the recently announced STOP funds to relevant community stakeholders and solicit early feedback.

VCH invited almost every relevant community and clinical organization (those that offered HIV/AIDS programming) to attend this meeting. The meeting was well attended, probably because of community controversy around the STOP Project, because of concerns about the STOP Project, and because organizations understood that funding might be available for new projects. The majority of the participants were clinical stakeholders. During this meeting, VCH presented the organization's vision of the project. Although the project evolved over the duration of the funding period, the vision remained true to the goals of STOP.

This meeting also represented one of the first attempts to describe the Vancouver client journey as it existed at the time, or in other words to create a picture of how an individual proceeds through the system of HIV testing, care, treatment and support in Vancouver. This was developed by obtaining feedback on what was working in current practice, what was not, and what could improve the client journey or current state of HIV/AIDS services in Vancouver. Case examples were used to illustrate to participants how some clients move through the system of care in Vancouver, and these proved to be helpful in the discussion.

Following the initial meeting with community stakeholders in early 2010, VCH developed a steering committee that consisted of key community and clinical players and representatives from VCH, PHC and the BC Centre for Excellence for HIV/AIDS. The purpose of this committee was to discuss what resources could be purchased and which programs could be funded immediately. For more information on this process, please see the section on “Identification of quick wins and other activities that received early funding” below.

The meetings of this steering committee evolved into a series of meetings that VCH, and then the Vancouver STOP Project, hosted with internal and external stakeholders at approximately six-month intervals. These meetings were attended by VCH and PHC program leads and by organizations that held memoranda of understanding with the Vancouver STOP Project (i.e., organizations funded by the project); they provided an opportunity for the organizations to report back on their project activities and for service providers to learn about each other’s work. HIV/AIDS service providers who did not receive STOP funding were also invited to attend to hear about the project’s progress and learn from their colleagues’ experiences. The project also consulted with these same groups on the 2011–12 and 2012–13 project planning and on future state planning.

Working with the Community Engagement Department at Vancouver Coastal Health

In-depth consultations with community organizations and service users over three years were a key strategy to develop an accurate picture of the current state and to implement programs to improve the system of care in Vancouver. VCH engaged its internal Community Engagement Department early in 2010 to conduct these consultations. The goal of the consultations was to generate knowledge about gaps and successes in the current system of care and to capture the “voice” of service users, a perspective that played a prominent role during implementation of the entire Vancouver STOP Project. A STOP leadership committee community representative, Kath Webster, provided advice and acted as a community facilitator.

Between June 2010 and the end of 2012, four community consultations took place, each carried out by the partnership of the VCH Community Engagement Department and the Vancouver STOP Project. Although these were conducted by a department of VCH, they were done on behalf of the entire Vancouver STOP Project.

These consultations were large and diverse. They were accomplished with the guidance and involvement of numerous individuals and agencies; some community partners assisted in recruitment efforts while others assisted in generating questions. Without this involvement, the consultation may not have been as successful.

Each consultation had a different focus, depending on the phase of the Vancouver STOP Project: the first consultation focused on identifying gaps in the current system of care, whereas later consultations focused on soliciting feedback about STOP initiatives. However, the main questions posed to participants were very similar in each session.

These questions included:

- What is working or not working in current services (STOP-funded or not)?
- How can we improve access to these services?
- What services do you think have improved since Vancouver STOP implementation started?
- What services do you think have really made a difference for people and in what ways?
- Which services still need improvement and how could these services be improved?

Through these questions, the Vancouver STOP Project was able to not only disseminate information about STOP in Vancouver but also offer stakeholders an opportunity to engage in the planning process and ask questions about the project. These consultations helped to identify key facilitators and barriers to accessing testing, linkage, treatment and care services. They also identified themes that arose across multiple groups that revealed underlying concerns about successful uptake of HIV testing and treatment.

Consideration of these concerns was a key to the successful achievement of the Vancouver STOP Project's goals.

To access reports from these consultations, please see http://www.vch.ca/get_involved/community-engagement/community-engagement-reports/public-health/stop-hiv-aids/stop-hiv-aids-project.

General lessons learned from the consultation process

It was helpful to use a wide range of methods to gather information and ideas from people. This process may have been even more successful had broader methods been used. Methods should go beyond only group discussions, taking into account diverse needs and providing increased opportunity for participation. In some consultations, for example, it was not possible for everyone to participate in the formal group process; in these cases, facilitators conducted interviews with one, two or three people at a time. This flexibility of approach greatly enhanced some people's comfort and they participated with enthusiasm when methods were adapted to their specific needs. Some people were not able to participate, largely because of stigma and individuals' consequent fear of being identified as someone living with (or suspected of living with) HIV.

Community Consultation 1 (2010)

In June and July 2010, VCH conducted its first community consultations. In collaboration with community partners and other VCH staff, the VCH Community Engagement Department identified key priority populations for consultation, including Aboriginal peoples, youth, people with mental illness, people with addictions, immigrants and refugees, gay men and other men who have sex with men, people who experience homelessness and people who use injection drugs. Discussion groups were chosen as the methodology for this consultation so that people would share ideas and build on each other's perspectives. VCH also sought to capture the experiences of people living with and at risk for HIV. Although this consultation took place before the development of

the Vancouver STOP Project, it was done on behalf of PHC as well, as PHC and VCH had already developed an informal learning agreement.

Thirteen discussion groups took place, which included 113 participants who reflected a wide diversity of age groups and neighbourhoods in Vancouver. A meeting was also held with community-based organization service providers and their feedback is included in this summary.

These consultations revealed two primary concerns among participants, which reflected the landscape of HIV services in Vancouver in 2010. First, a major concern related to the profound effect of HIV stigma in the community on people's willingness to be tested for HIV, acknowledge their HIV status or engage with healthcare providers to discuss their risk. The Vancouver STOP Project was told that it must address HIV stigma if it hoped to be successful. This same point emerged from consultations with family physicians engaged in developing learning activities in preparation for the integration of routine offers of HIV testing in their practices.

Although reducing HIV stigma was not an explicit MOHS STOP goal, the Vancouver STOP Project was able to begin to address HIV stigma among the general public and healthcare providers through the *It's Different Now* campaign and *Change HIVStory* and the normalization of HIV testing. For more information on these projects, please see *It's Different Now* and *Change HIVStory* below.

Second, concern was raised about how funders prioritize financial resources, particularly in the context of a treatment-as-prevention project. Community-based organizations were seen as essential in facilitating the client/patient uptake of health services, including treatment services. However, there was concern that the Vancouver STOP Project would not prioritize funding for community-based agencies.

Indeed, the perception of community-based organizations in the first year of the project was that they were not a priority of the project, partially because the

biomedical “seek and treat” approach was perceived to exclude these organizations, partially because of the number of community-based programs funded in the first year and partially because of misconceptions about what the Vancouver STOP Project was actually doing.

However, the Vancouver STOP Project was committed to involving community-based agencies from the very start of the project. The project has demonstrated this commitment through its funding track record. However, it was a challenge to ensure inclusion of community-based agencies/models in a project that was very focused on clinical/medical outcomes. In fact, the notion that community-based organizations would play an essential role in achieving clinical/medical outcomes was new.

Community Consultation 2: 2011–12

The second community consultations were conducted in January and February 2011 to inform planning of health services in Year 2 (April 1, 2011, to March 31, 2012). Twelve discussion groups—including two in Spanish—were attended by 130 participants reflecting a wide diversity of age groups and neighbourhoods in Vancouver. The objectives of these consultations were to give service providers a summary of what people had said during the last round of consultations and report on how the Vancouver STOP Project had addressed the suggestions from service users. The project also wanted to solicit feedback on the possible topics to focus on in the coming year.

As with the other community consultations, several themes emerged, including a few key concerns about successful uptake of HIV testing and treatment. First, it was felt that stereotypes and misinformation about transmission and risk behaviour were still prevalent among Aboriginal communities and in the Downtown Eastside. It was clear that HIV education workshops were needed in many communities. While primary prevention was not a part of the mandate of the Vancouver STOP Project, this project was able to

encourage some HIV education through *support*-focused pilot projects, such as the Peer Navigators Program. However, these education programs were focused exclusively on people living with HIV/AIDS.

Other education took place informally with people who tested negative for HIV through STOP testing projects, including mass education during the peer testing events in the Downtown Eastside in 2011, but there was no consistency in the offer of education, given the changes in HIV pre- and post-test counselling guidelines. For more information about the Vancouver STOP Project’s changes to pre-test counselling, please see the section on “HIV testing: shifting the paradigm” below.

Community Consultation 3: 2011–12

Between November and December 2011, the community engagement team (STOP HIV/AIDS community representative and VCH CE) responded to a request from some community partners to receive a report on STOP activities, along with some education on a variety of topics. The community engagement team offered a presentation on updates, with or without an additional education session, to the interested groups.

Community Consultation 4: 2012–13

Consultations were conducted in January and February 2012 to gather feedback about people’s experience of Vancouver STOP Project services and identify their priorities for the next year (April 1, 2012, to March 31, 2013.)

The respondents believed that the Vancouver STOP Project had effectively used public awareness campaigns to lessen the stigma associated with HIV testing (see the section on “*It’s Different Now and Change HIVStory*” for more information, below), but they recommended that future campaigns should consider the stigma of *being* HIV positive, including a continued focus on the new reality of living a long and healthy life with HIV/AIDS.

Two key concerns were raised about testing. Testing in doctors' offices was concerning to the participants, particularly the consistency in follow-up with test results and continued stigma. Routine offer of HIV testing in acute care was debated and no consensus among participants was reached. Some felt that it is a vital responsibility of public health; others were concerned about the patient's experience of being asked to take a test. For more information on how the Vancouver STOP Project addressed routine HIV testing, please see below.

Regarding linkage to care, participants agreed that services seemed better organized by this point in the project. Further, linkages seemed more visible and seamless from one service to the next. Many of these services have existed for many years, but it was the Vancouver STOP Project that linked them together, improving the client experience. It was also agreed that peer navigation was a key factor in the success of efforts to increase testing rates and improve linkage to care.

Participants applauded the care received from HIV/AIDS specialists in hospitals and clinics but voiced concerns that physician education should continue with regard to how to deliver medication information in ways that are positive and empowering to patients.

Population-specific activities

The Vancouver STOP Project attempted to engage specific communities (women, gay men and other men who have sex with men, and Aboriginal peoples) through more intensive activities as well. Between January and March 2011, the project team solicited input via community consultations and produced population-specific reports.

Aboriginal communities

Engaging and building trusting relationships with local Aboriginal communities and organizations was critical to the success of the Vancouver STOP Project, given that 14 First Nation communities reside within the VCH catchment area. In addition, the First Nations Health Council did not receive any funding for STOP

from the Ministry of Health. These relationships were challenging to build, but the efforts resulted in important successes and lessons. Some of the activities undertaken by the Vancouver STOP Project with Aboriginal communities are outlined below, along with a list of recommendations for how greater success can be achieved moving forward.

Stakeholder meetings: Aboriginal organizations involved in HIV-related issues were invited to attend the meetings that the Vancouver STOP Project held with local stakeholders every six months so that they could learn about and inform STOP activities. In addition, in 2010–11, VCH hosted four focus groups with service users from First Nations and Métis communities.

Developing population-specific recommendations for action: The Vancouver STOP Project developed an Aboriginal strategic plan for action at the start of the 2011–12 fiscal year, to appropriately target STOP funding to Aboriginal communities/organizations. This plan was developed with the support of participants at the stakeholder meetings (mentioned above) and a 2011 report on recommendations commissioned by the Provincial Health Services Authority. These recommendations focused on how to increase access to HIV testing, treatment and care for Aboriginal people living in Vancouver and Prince George. They were reviewed by the Vancouver STOP Project as it considered how to increase access to essential services among First Nations people in their catchment area.

Building a relationship with the First Nations Health Council/Authority (FNHC/A): The Vancouver STOP Project endeavored to build a strong working relationship with the First Nations Health Council/Authority (FNHC/A) in BC, which is responsible for the planning, design, management, delivery and funding of First Nations health programs in the province. A part of FNHC/A's mandate is to collaborate with BC health authorities to ensure coordination and integration of their respective health programs and services to achieve better health outcomes for First Nations in BC.

In early 2011, the Vancouver STOP Project's core team invited a representative from the FNHC/A, Dr. Evan Adams, to meet with the team to provide important education on (a) the new First Nations Health Authority and (b) the principles of engagement outlined in the FNHC/A-defined *Principles of Engagement with First Nations*, which was developed specifically for the STOP Project.

These principles of engagement indicated that the STOP Project needed to (a) gain knowledge of the Tripartite environment and obligations; (b) abide by specific reporting requirements on Aboriginal-specific activities; (c) share data and respect the principles of ownership, control, access, and possession (OCAP); (d) ensure meaningful engagement of First Nations communities, organizations and leadership; and (e) ensure that the FNHC/A will have input into all policies affecting First Nations people. The Vancouver STOP Project committed to these principles and abided by them throughout the project.

An Aboriginal HIV review committee for the FNHC/A was set up to vet all STOP reports, proposed contracts for services for Aboriginal people, proposed policies (such as routine testing in acute care) and data collection processes to ensure regional support and First Nations relevance.

Further, a representative of the Vancouver STOP Project sits on the FNHC/A committee and a FNHC/A representative was invited to join the team of the Vancouver STOP Project. This ensured ongoing sharing of knowledge across the organizations.

One of the major challenges in establishing this relationship was the issue of Aboriginal people living in urban areas, particularly those who had moved from First Nation communities outside of BC. The FNHC/A initially was focused on providing services on First Nation reserves. The relationship between the FNHC/A and the Vancouver STOP Project represented an opportunity for the FNHC/A to consult with VCH and PHC on service delivery to urban Aboriginal populations and for the Vancouver STOP Project to consult with FNHC about opportunities for service

provision in other areas of the VCH region. The Vancouver STOP Project represented one of the first opportunities for VCH and PHC to build a relationship with the FNHC/A. To be successful, it was critical that the Vancouver STOP Project proceed slowly, respectfully and with a desire for learning.

Aboriginal representation on STOP teams: In addition to the representation of Aboriginal leaders on the Vancouver STOP Project's core team (see above), First Nations leaders were also represented on the Vancouver STOP Project's operations team, including the pilot evaluation sub-group, the social marketing task group and the future state task group.

Further, the provincial STOP core team, which was ultimately responsible for the implementation of the program, included representatives from First Nations communities as well as other HIV-affected communities in Vancouver and Prince George.

Indigenous cultural competency training: As a part of their commitment to the principles of engagement with First Nations communities and to quality HIV care, both PHC and VCH committed to Indigenous cultural competency training. All STOP-funded staff, including Vancouver STOP Project staff (VCH and PHC) and external staff were responsible for receiving this training.

Pilot activities developed in partnership with or to serve Aboriginal communities: The approach to developing pilots focused on Aboriginal communities was to determine, through the activities outlined above, which services were already in place and being well accessed by Aboriginal communities and where trust in services already flourished. The priority was to bolster and support these services to expand their access and to developing new and innovative ways of meeting the goals of the Vancouver STOP Project in Aboriginal communities.

Approximately 30% of total Vancouver STOP Project funding each full fiscal year went to initiatives with an Aboriginal component: 37% in 2010–11, 30% in 2011–12 and 33% in 2012–13.

The Vancouver STOP Project carried out the following in relation to off-reserve Aboriginal communities in Vancouver:

- provided funding to expand existing HIV testing, treatment, outreach and support services to Aboriginal people by Aboriginal-specific organizations (e.g., the Vancouver Native Health Society's Positive Outlook Program and Toward Aboriginal Health and Healing [TAHAH]; Urban Native Youth Association)
- provided funding to expand existing HIV testing, treatment, outreach and support services to Aboriginal people by Aboriginal-allied organizations that have demonstrated competency in serving Aboriginal communities (e.g., PHS Community Services Society; Downtown Eastside Women's Centre)
- provided funding to expand existing programs that provide access to quality case and support services to Aboriginal people in Vancouver (e.g., the Maximally Assisted Therapy [MAT] Program at the Downtown Community Health Centre)
- provided funding to develop a new program, the Peer Navigators Program (although this program is not specific to Aboriginal people, approximately 25% of their clients are Aboriginal)
- funded stabilization beds, supportive housing subsidies and supportive housing that were designated for Aboriginal people (approximately 30% of the total funded housing stock was designated for Aboriginal communities)
- hired an Aboriginal nurse practice leader at the John Ruedy Immunodeficiency Clinic (IDC)
- funded the implementation of ongoing Elders' feasts at IDC

The Vancouver STOP Project also endeavoured to bring rapid, point-of-care testing to a small number of First Nation reserves within the VCH catchment area. The goal of this small, but significant, pilot was to work in partnership with two or three First Nations communities to improve access to HIV testing, improve early detection of HIV among First Nations people, improve linkage to care and treatment for

anyone newly diagnosed and document learnings to support other First Nations communities to implement initiatives to increase testing.

The Vancouver STOP Project proceeded with the pilot initiative for rapid, point-of-care testing very slowly, keeping concepts of Aboriginal self-determination and cultural safety at the forefront of all activities. The pilot followed the change management approach used by the STOP Outreach Education Team in the community testing sites in Vancouver but adapted the approach on the basis of feedback from First Nations stakeholders. Some key ways in which this approach differed from the standard change management approach were that they engaged multiple levels of First Nations governing bodies and partners, including the FNHC/A, First Nations community leadership in the pilot sites, the First Nations and Inuit Health Branch (Health Canada), Chee Mamuk, VCH Aboriginal partners, STOP AHRC and the Vancouver STOP Aboriginal patient nurse educator, among others. Further, only communities that expressed an interest in HIV testing and requested VCH support were approached.

Finally, although other policy changes at PHC related to serving Aboriginal communities better were not funded by STOP, it is believed that they were largely the result of the efforts by the Vancouver STOP Project to engage with and better serve Aboriginal communities. These include the establishment of the PHC Aboriginal Health Improvement Council, in partnership with VCH Aboriginal Strategic Health Initiatives, the PHC policy change concerning the holding of traditional ceremonies in PHC facilities and the creation of a sacred space at St. Paul's Hospital.

Gay men and other men who have sex with men

When the STOP funds were announced by the BC Ministry of Health in 2009, gay men and other men who have sex with men (OMSM) were not named as a priority population. However, PHC and VCH had a deep understanding of the health-related needs of gay men and how they were affected by HIV. Since

gay men currently are the group most affected by the HIV epidemic in Vancouver, they were a priority for the Vancouver STOP Project.

Although one of the first activities undertaken by the Vancouver STOP Project was to increase access to HIV testing for gay men through the expansion of the sexual health clinic on Davie Street operated in partnership with Health Initiative for Men, it was recognized in the fall of 2010 that a strategy specific to gay men should be developed. Given that this population is significantly overrepresented in the HIV incidence and prevalence data in Vancouver and is an explicit priority of the Vancouver STOP Project, the Vancouver STOP Project launched a planning process in partnership with Health Initiative for Men and other key players involved in gay men's health in Vancouver to identify population-specific priorities and activities for the Vancouver STOP Project.

As a first step in this process, the Vancouver STOP Project developed a working document that outlined specific priorities for gay men. They then convened a working group (called the GM/OMSM Leadership Group and the GM/OMSM Stakeholder Group) to respond to and further shape the architecture of this living document, which outlined population-specific objectives for each of the overall goals of the STOP Project.

The GM/OMSM leadership group included representatives from the Vancouver STOP Project (Chris Buchner, Lynn Tran, Meaghan Thumath, Réka Gustafson and Scott Harrison, PHC), the Health Initiative for Men (Wayne Robert) and the BC Centre for Disease Control (Mark Gilbert) and a VCH representative not on the Vancouver STOP Project team (Lorraine Grieves).

This leadership group reviewed and validated the document, further populated it to the next level of detail and collaboratively developed 14 population-specific objectives for gay men and OMSM that they felt would best meet the goals of the STOP Project and address the needs of this community in a holistic manner.

Following the development of the 14 population-specific objectives, a full-day facilitated session was held with a larger stakeholder group composed of key individuals with a relevant mandate, knowledge and expertise, including participants from the GM/OMSM leadership group, Spectrum Health Care, the BC Centre for Excellence in HIV/AIDS, Positive Living BC and Boys R Us. This group collaboratively identified and prioritized potential activities that could be implemented over the next two years to most effectively reach the 14 population-specific objectives.

These activities and objectives were then further refined by the GM/OMSM leadership group into 10 strategic recommendations, which then considered by the entire Vancouver STOP HIV/AIDS leadership committee. For detailed information on these 10 recommendations, please refer to *STOP HIV/AIDS: Recommendations to Address Current Issues for Gay Men and Other Men who have Sex with Men*, prepared by Chris Buchner (VCH), Wayne Robert (Health Initiative for Men), Lynn Tran (VCH) and Ali Grant (AMG Consulting) for the STOP HIV/AIDS pilot project (February 2011).

The first recommendation was acted on almost immediately: the Vancouver STOP Project developed the Gay Men's Health Reference Group, a multi-disciplinary, multisectorial and multigenerational expert reference group to provide ongoing input, advice, accountability, support and guidance to the strategy for gay men and OMSM of the Vancouver STOP Project. The Gay Men's Health Reference Group continued to meet beyond the end of the Vancouver STOP Project, raising important issues relevant to the health and well-being of gay men.

The Vancouver STOP Project took these recommendations under advisement as they developed the client journey and identified potential pilot projects, and they tested a variety projects that specifically targeted gay men and OMSM. Some of these pilots were funded for one cycle (six months), and others were funded for more than one cycle. It is important to keep in mind that the majority of the pilot projects

developed through STOP did not address a specific population beyond the at-risk population or were designed for the general population, so other pilots that engaged gay men, but did not explicitly name gay men in their mandate, will not be listed below.

The pilots targeted to this community, which represent each step in the client journey, include the following:

- expanding access to community-based HIV testing by extending hours at the Health Initiative for Men's Davie Clinic
- expanding access to community-based HIV testing by opening a Health Initiative for Men satellite clinic on Commercial Drive
- increasing awareness and demand for HIV testing through a social marketing campaign called "What's Your Number?"
- re-engaging men lost to care and expanding testing and engagement in care through a partnership with the Spectrum Health clinic (systematically identifying and re-engaging patients lost to care) and expanding routine HIV testing for clients attending the Spectrum Health clinic
- commissioning a report from Health Initiative for Men on how to engage underserved men who have sex with men to develop and implement an appropriate testing strategy to reach, high-risk, non-testing groups of men who have sex with me
- implementing HIV testing in bathhouses
- implementing a mobile HIV testing initiative in partnership with YouthCO, specifically focused on engaging gay men and OMSM in HIV testing
- fostering clinical leadership and capacity specific to gay men through the development of a nurse leader position on the STOP Outreach Team and the recruitment of several gay nurses

Women

The Vancouver STOP Project participated in a limited amount of targeted engagement of women. In August 2010, the Provincial Health Services Authority,

with support from the Vancouver STOP Project and the BC Centre for Excellence in HIV/AIDS, undertook a consultation and planning process to develop strategic recommendations on how the provincial STOP Project could address the needs of women.

This report, which advised provincial STOP planning, included a summary of several reports prepared for the STOP Project that are relevant to women, including the 2010 Vancouver community engagement report, an Oak Tree Clinic patient survey and a literature review on innovative models of testing and care. Through this review, common themes emerged on important activities for women, such as the importance of system navigators and peer support; the need for specific treatment adherence supports; and the need for integration of HIV programming with other services such as food security programs, child care and income support.

The Vancouver STOP Project took these recommendations under advisement in the development of the client journey and the identification of potential pilot projects, and it tested a variety of projects that specifically targeted women. Some of these pilots were funded for one cycle, and others were funded for more than one cycle. These pilots include the following:

- expanding HIV testing and treatment services for women in the Downtown Eastside through expanded services at the Downtown Eastside Women's Centre
- expanding HIV testing to women who have been victims of intimate partner violence through partnerships with community agencies, women's shelters and second-stage housing facilities (in partnership with Fraser Health)
- introducing routine HIV testing in abortion clinics and youth clinics
- developing an education and self-management workshop series for women of African descent living with HIV, in partnership with the VCH Cross Cultural Mental Health Team

- in partnership with Sheway at the Vancouver Native Health Society, providing support for pregnant women and new mothers living with or at risk for HIV through engagement in a food security program

The vast majority of the pilot projects developed through the Vancouver STOP Project did not have a specific gendered approach, meaning that the pilots were typically designed for all people at risk or the general public, regardless of gender.

Formal and informal research into HIV prevention and care practices

In addition to its formal community engagement activities, the Vancouver STOP Project used research reports to inform its understanding of (a) gaps that existed in the current system of care in Vancouver and (b) possible strategies to fill these gaps. They used existing research reports and commissioned new ones, such as a report on innovative testing initiatives and a review of testing and treatment services in Vancouver. They consulted other reports, such as a review of outreach and support services in Vancouver conducted before STOP and the Recommendations for Action in Aboriginal Communities drafted by the Red Road HIV/AIDS Network in BC. They also analyzed epidemiological data locally and from the BC Centre

for Disease Control, the Provincial Laboratory and the BC Centre for Excellence in HIV/AIDS, which provided provincial and neighbourhood-level data on HIV testing and treatment access.

Developing strategies to improve the client journey

Through an iterative process led by the extensive community consultations and research outlined above, the Vancouver STOP Project developed a picture of the current state of HIV/AIDS services in Vancouver. With this knowledge, they could determine where gaps existed, where efficiencies lay and where changes needed to be made.

Using the client journey, the Vancouver STOP Project developed a series of linked strategies to improve the continuum of care, with the goal of developing a single, seamless health and social service system. For example, one of the first steps in the client journey is when an individual is unaware of their HIV status. A strategy to address this stage of the journey is to normalize and increase access to HIV testing. Through a series of such strategies linked by the client journey, the Vancouver STOP Project implementation plan began to take shape.

The following table outlines the Vancouver STOP Project’s strategies to address each stage of the client journey. The targets for the strategies, which were developed by the Vancouver STOP Project evaluation team, are also noted. Pilot projects were developed to address single or multiple strategies.

Stage of the client journey	Strategy	Target(s)
Unaware of HIV infection	Increase testing through partnerships and marketing campaigns	CD4 count ≥ 500 at diagnosis
Aware of HIV infection, but not in HIV care	Ensure that those with a new HIV positive antibody test are linked to a physician and initiate HIV care	Initial CD4 count and plasma viral load measured within 3 months
Retained in HIV care	Ensure that those linked remain in care Ensure that those who were lost to care are linked and re-engaged	Care provided meets practice guidelines and $>95\%$ in care
Initiated antiretroviral therapy	Ensure that antiretroviral therapy is initiated in a timely manner	At CD4 count ≥ 500
Persisted and adherent with antiretroviral therapy	Ensure that support is provided as needed for ongoing adherence to antiretroviral therapy	Adherence at $\geq 95\%$
Suppressed viral load	Provide antiretroviral therapy, measure and track plasma viral load at the level of the HIV-positive population	Plasma viral load ≤ 200

(Vancouver STOP Project, 2011)

In addition to the strategies listed above, the Vancouver STOP Project also developed social marketing and partner education strategies.

The social marketing strategies aimed to (a) increase understanding among the general population of HIV testing, (b) increase demand for HIV testing in Vancouver and (c) increase the *offer* of HIV testing in all clinical settings.

The partner education strategies aimed to (a) engage community-based organizations, AIDS service organizations, healthcare professionals and the public in

understanding the Vancouver STOP Project and (b) provide education on HIV testing to VCH teams and other organizations interested in offering HIV testing.

Through these linked strategies, pilot projects were developed and tested. The approach called for diverse service providers to work closely together, more closely than they had previously, but maintain distinct, independent practices. For information on how these strategies materialized as pilot projects please see below.

Identification of activities to support the Vancouver STOP Project's strategies

Using community stakeholder consultation, internal dialogue and visioning, and evidence review, the Vancouver STOP Project identified, implemented and tested activities that would achieve STOP goals from early 2010 to March 31, 2013.

The strategy of the Vancouver STOP Project was to build on the existing infrastructure of services in Vancouver rather than develop entirely new organizations. To achieve their goals, the Vancouver STOP Project took a three pronged-approach: first, to expand the reach and capacity of effective programs in the city, second, to implement new ways of offering services in each step of the client journey, and third, to enhance linkage across the system of care . Through these approaches, they were able to achieve the goals of STOP. Some activities were relatively easy to implement and others required significant long-term planning and practice change.

Although all of the Vancouver STOP Project's activities are often referred to as pilots, in practice the project implemented three different types of activities: quick wins, pilot projects and changes to existing practice and policy.

The Vancouver STOP Project funded activities within their own programs and clinics (such as in the IDC, which is a part of PHC, and within VCH clinics), and they also partnered with other community organizations to implement projects on behalf of the Vancouver STOP Project. Externally funded pilots were established with a memorandum of understanding (MOU) and thus these pilots were referred to as MOU holders. The first projects to be implemented, some of which were internal and some of which were external to the Vancouver STOP Project organizations, were referred to as quick wins.

Identification of quick wins and other activities that received early funding

During the early days of the project (2010), before the emergence of the Vancouver STOP Project, VCH and PHC sought to identify the elements of service that hindered or facilitated access to HIV testing, follow-up and treatment. They then developed an initial list of activities that could be rolled out very quickly—within a matter of months—to start to improve the current system of care. Many of the areas where improvements could be made quickly and with few resources had already been identified before the STOP Project began by PHC and VCH staffers who later became STOP leaders, simply through their practice. However, until STOP, they did not have the human or financial resources to make the improvements. Given how the STOP funding was announced and rolled out, VCH and PHC were forced to plan, fund and evaluate pilot projects incredibly quickly, particularly in the early days. These activities were developed using a combination of VCH and PHC internal expertise, early but extensive research on the current state of HIV testing and treatment programs, and early feedback from service providers and service users. Some quick wins produced small but beneficial changes to the system of care in Vancouver; it was important to realize such changes early, as the Vancouver STOP Project was undertaking a redesign of the entire continuum. Other activities that were expected to be quick wins were found to not be quick wins at all.

Project leaders at VCH and PHC designated approximately 50% of their budgets in the first year to the implementation of quick wins, leaving the other 50% for larger implementation efforts focused on bigger system changes.

Identification and rollout of quick wins at Vancouver Coastal Health

The VCH core team and the steering committee, along with other VCH staff and subject-matter experts, generated approximately 30 ideas for possible quick wins using their own practice-based knowledge,

research evidence, workshops and early stakeholder consultations (see the section entitled “Stakeholder engagement” above.)

The criteria they used to prioritize the quick win for funding included the following: the activity could be accomplished within six months; the activity could be accomplished with available STOP Project resources; the activity aligned with one or more STOP Project goals; the activity was clearly within the scope of the STOP Project; the ratio between risks and downstream impact was considered to be reasonable; the activity was reasonably sustainable; the activity resulted in a reasonable degree of transformation; and the total combined costs of all quick wins was not more than \$1,000,000.

After this initial list was developed, the core team at VCH further analyzed the implementation activities required for each quick win, to ensure that they were truly feasible and were not particularly risky, required a reasonable amount of resources and aligned with STOP goals. Through this process, four quick wins were initially approved for rollout with VCH funds. Other quick wins were added by VCH after this meeting.

Examples of VCH quick wins, some of which were small parts of larger initiatives, which are discussed further in sections below, and some of which were discrete activities, are listed below:

- assessment and modification of forms across systems to meet data standards (e.g., development of an HIV care flow sheet and screening tool)
- clinical infrastructure improvements: HIV laboratory and case note availability
- improvement of access to Care Connect/Medinet
- introduction of care pathway for people without medical coverage
- development of an HIV patient registry
- completion of a literature review on innovative HIV testing strategies
- implementation of a memorandum of understanding between VCH and the BC Centre for Excellence in HIV/AIDS to improve data matching and re-engagement of clients in care
- promotion of adherence and retention in care by providing training to staff of the Vancouver Jail, community court and drug court to improve discharge planning for HIV-positive patients and to improve access to case management
- expansion of targeted testing by providing training to 49 community sites, engaging health care providers in high-volume practices to increase HIV testing when offering an STI or Hepatitis C screening test and by implementing HIV point-of-care testing in community court and drug court.
- improvement of public health follow-up and contact tracing
- implementation of marketing activities to promote broad population-based HIV testing (such as recommendations to healthcare providers to offer HIV testing to patients screening for STIs)
- implementation of a testing blitz in the Downtown Eastside

Identification and rollout of quick wins at Providence Health Care

PHC also implemented a series of quick wins in the first few months of the first year of STOP funding. PHC quick wins specifically related to improvements in activities at the IDC at St. Paul’s Hospital.

The IDC was (and is) a central hub of low-barrier, comprehensive primary care for people living with HIV. This clinic provides holistic care to patients, including medical care and psychosocial support. However, the IDC was operating at capacity and its leadership knew, from practice and evaluation of their services, which areas needed more resources. These areas were funded immediately and became PHC’s quick wins. These activities included:

- hiring of senior nurses and social workers to expand intensive case management capacity for complex patients

- hiring of one clinical nutritionist to provide better clinical nutrition to patients, many of whom faced food security issues (before the STOP Project, the IDC shared one clinical nutritionist with 10-C, the in-patient unit at St. Paul's Hospital)
- hiring of one psychiatric nurse for the IDC
- implementation of point-of-care HIV testing in the IDC, including training of all IDC nurses, developing clinic testing protocols and shifting workflow

Identification and rollout of pilot projects

While the Vancouver STOP Project was funding their quick-win activities, they were also conducting extensive planning to develop internal and external (MOU) pilots to improve the quality of care across the entire continuum. Some of the pilots were small and relatively easy to implement whereas others were broad, spanning multiple organizations and sectors, requiring extensive practice change and shifts in policy. Some involved expanding the capacity of existing effective services whereas others included activities that were new and innovative.

It is possible to discuss discrete pilot projects, this approach might obscure what the Vancouver STOP Project actually accomplished. The Vancouver STOP Project implemented individual pilots as pieces of one coherent vision of system change. Through individual, but connected, pilots, and the accompanying policy shifts outlined below, the Vancouver STOP Project transformed the system of care in Vancouver.

Identification of pilots

The Vancouver STOP Project did not put out a call for proposals to identify pilot projects, as there was limited time. Instead, they identified pilots through consultation, evidence review, visioning and the review of proposals that were submitted, without request, from service providers. Early in 2011, after a year of planning, the core team met for a one-day retreat to review the evidence and proposals and generate a list of 27 pilot projects spanning multiple populations across the client journey. These 27 pilots

reflected evidence-based strategies to improve broad-based testing, targeted testing, linkage to care, treatment capacity and treatment support. These pilots, along with a few others that were identified along the way, were implemented between April 1 2010 and the end of the Vancouver STOP Project.

Formally at the core team's retreat, and more informally subsequently, pilot projects were assessed using the following criteria:

Relevance to the goals of the Vancouver STOP Project:

A possible pilot had to have direct relevance to the STOP mandate. This was extremely important; of course, other effective HIV-related programs existed in Vancouver and indeed some of these programs approached the Vancouver STOP Project for funding. However, only those that met one or more of the STOP goals were eligible for funds.

Feasibility: The Vancouver STOP Project had a short timeline to achieve significant outcomes and therefore the known capacity of the organization in question, the cost and time estimations of the proposed pilot and the capacity of the Vancouver STOP Project itself to support the pilot were taken into consideration in determining if the pilot was feasible.

Cost/benefit: One of the goals of STOP was to improve the efficiency and cost-effectiveness of services in Vancouver. Pilots were selected on the basis of their potential impact relative to their cost.

Alignment with the Vancouver STOP Project's principles:

In 2010 the Vancouver STOP Project developed their own list of principles that guided all activities. Pilots were assessed in relation to these principles:

- they had to be evidenced-based or evidence-informed
- they had to be achievable
- they had to support broader system change
- they had to be sustainable
- they had to be cost-effective
- they had to be innovative
- they had to build on what was already working

- they had to be accessible
- they had to be equitable
- they had to be culturally safe
- they had to demonstrate the greater involvement of people living with HIV (GIPA) principle
- they had to demonstrate respect for the individual
- they had to respect privacy and confidentiality

Support for the Vancouver STOP Project's vision of equity across populations: The Vancouver STOP Project strove to fund pilots that represented a balance of initiatives across the continuum of care and a balance of populations served.

Individual strategies and activities implemented across the client journey are discussed further below.

Prevention in the *Vancouver STOP Project*

Although Vancouver Coastal Health and Providence Health Care worked, before and during the STOP period, extensively in HIV primary prevention, primary prevention was not a goal of the provincial STOP Project and therefore activities in this area were not eligible for STOP funding.

This was a challenge to the Vancouver STOP Project for a few reasons. First, given their experience in providing service across the continuum of care, they understood how important prevention is to improving the client journey, and they were deeply committed to prevention. Second, most of VCH's contracts with external organizations who would be partners in STOP were focused on primary prevention. It was challenging to express and abide by the requirements of the STOP Project while also supporting comprehensive practice.

As the Vancouver STOP Project evolved, they determined that they were able to encourage and fund combination prevention—if not primary prevention—by supporting pilots to approach testing, treatment, care and support work through a combination prevention (or comprehensive care) lens.

Importantly, because of the HIV services infrastructure in Vancouver, the Vancouver STOP team did not have to face a troubling ethical challenge by excluding primary prevention from its work. While there was room for improvement, the city already had in place robust HIV education, condom distribution and harm reduction services, and the Vancouver STOP Project did not jeopardize the funding or implementation of these services. If this project had been rolled out in a region that had not made a significant investment in primary prevention services, this may have been more of a challenge.

HIV Testing: *shifting the paradigm*

The Vancouver STOP Project created a fundamental shift in the HIV testing paradigm in the city, which was arguably one of the most important changes that occurred as a part of the Vancouver STOP Project. HIV testing was refocused from a singular strategy of risk-based HIV testing to one that combined routine offer of HIV testing and risk-based testing. This change was accomplished through a series of pilot projects, practice changes and policy shifts.

In 2010, during the time when the Vancouver STOP Project was investigating possible activities and pilots, evidence suggested that Vancouver's risk-based testing model was not reaching everyone who needed an HIV test—approximately 25% of people who were living with HIV still did not know their status, despite extensive risk-based testing opportunities. Among those who were diagnosed, 60% were diagnosed after they should have already been on treatment. Nearly a fifth of patients were diagnosed very late in the course of their illness.

The Vancouver STOP Project's leadership believed that, to expand HIV testing options and increase diagnoses, the model for testing needed to be fundamentally shifted.

The healthcare system, through its clinical services, could be used to ensure that most people who were infected with HIV had the opportunity for a diagnosis. The Vancouver STOP Project hypothesized that the way to mobilize this system and encourage people to be tested for HIV was to normalize HIV testing. This normalization could be accomplished by offering HIV

testing at every opportunity to all patients engaging with the healthcare system who had ever had sex and who had not been tested in the last year.

A three-pronged, integrated approach was taken to expanding HIV testing across Vancouver:

- routine offer of HIV testing in family practice
- routine offer of HIV testing in acute care
- targeted HIV testing in high-prevalence populations (including enhanced testing in settings already offering HIV testing and expansion of testing to new venues)

Routine testing in family practice and acute care: preparing the landscape

Implementing routine offer of HIV testing in hospitals and family practice settings was one of the biggest changes that took place in Vancouver as a result of the STOP Project. This change was achieved in phases, each marked by considerable communication, education and practice change involving new processes and policies. The scale of the change effort was considerable, and the change was accomplished through the dedication of the Vancouver STOP Project team and key practice change leaders.

A key requirement for the rollout of routine offer of HIV testing in Vancouver's acute care services was approval from both the Providence Health Care (PHC) and Vancouver General Hospital/University of British

Columbia medical advisory committees, which was granted after the rationale for routine offer was presented by the medical health officer.

Building the rationale for routine offer of HIV testing

In the first year of the Vancouver STOP Project, the leadership team built a compelling rationale for the implementation of routine offer for HIV testing that was based on the World Health Organization's guidelines for routine screening programs (not specific to HIV). The team also used data from the United States and the United Kingdom that suggested that the healthcare system was actually missing opportunities to diagnose people with HIV. In many jurisdictions, healthcare providers, not patients, are often the barrier to HIV testing.

Building the rationale for routine offer of HIV testing was critical, as this represented a major change in the current, widely accepted HIV testing practice. The general rationale for routine offer of HIV testing rested on seven key points:

1. Early diagnosis and treatment can lead to a near-normal life expectancy with a good quality of life. The overall goal of any testing strategy is diagnosis of HIV at the earliest possible time during the course of infection.
2. With early diagnosis and treatment, the likelihood of onward transmission of HIV is significantly reduced.
3. Despite the goal of early diagnosis, late diagnosis is the norm rather than the exception. Sixty percent of people diagnosed with HIV in Vancouver are diagnosed when they are already eligible for HIV treatment. Twenty percent are diagnosed very late in the course of infection, when significant damage to the immune system has already occurred.
4. Routine HIV testing increases opportunities for early detection. There is evidence that the healthcare system misses opportunities to diagnose people with HIV. Often people who are diagnosed with HIV have had other blood tests as

a consequence of visiting a healthcare provider in the past year but had not been offered an HIV test with that blood work.

5. Routine HIV testing is acceptable to patients. When HIV testing is offered as part of routine care to all patients, the stigma associated with the offer of an HIV test diminishes.
6. Routine screening for HIV is already being done for pregnant women, largely by family doctors.
7. HIV infection meets all of the World Health Organization's guidelines for conditions for which routine screening should be considered. Routine testing is cost-effective: with a diagnosed prevalence of 12.1/1000 (for every 1000 people in Vancouver, 12 are HIV positive), Vancouver is well above the diagnosed prevalence threshold used by the United Kingdom to determine whether HIV testing should be offered routinely. Estimates of the return on investment in routine testing indicate that at Vancouver's prevalence, routine HIV testing is likely to be not only cost-effective but also cost saving.

This rationale was presented, over time and in diverse ways, to acute care providers, community organizations, family practitioners, the College of Physicians and Surgeons of British Columbia and the general public. The team tailored their messages to the audience in question. Further, the testing blitz in the Downtown Eastside, spearheaded by PHS Community Services Society and the Vancouver STOP Project and described later in this section, provided local evidence that a hidden epidemic of undiagnosed people living in the neighbourhood did not exist. This offered support to the Vancouver STOP Project leadership's belief that a paradigm shift was needed to reduce the percentage of people who were HIV positive and undiagnosed.

Building the structures required to implement routine offer

In the second year of the project (2011–12), the Vancouver STOP Project team built the structures required to implement routine offer of HIV testing in family practice and in acute care. This included

engaging clinical and operational leadership, changing policy and offering extensive support to physicians.

Although this project was led by the health authority, it was a significant challenge for the project team to communicate the rationale for routine offer of HIV testing to Vancouver's clinical and operational leadership. It required a small core team, including the medical health officer, the project manager of the acute care and family practice testing initiatives, the clinical leader for the acute care initiative and the physician-lead of the family practice initiative, to make dozens of presentations, to dozens of stakeholders, over many months.

The decision to use a small core staff to discuss the rationale was strategic. Complex questions about the rationale, the ethics of routine offer and the feasibility of this approach often arose during these meetings. Further, it was a challenge for some practitioners and leaders to adjust the shift from a policy of pre-test counselling to pre-test discussion and the new delegated follow-up processes. Having a small team of people who understood and were committed to the rationale for the implementation of routine offer and who had developed answers to most questions was an effective way to build clinical leaders' confidence in the process.

Support of the College of Physicians and Surgeons of British Columbia

To achieve the goals of STOP and implement routine offer of HIV testing, it was critical to get the support of the College of Physicians and Surgeons of British Columbia. Because routine offer of an HIV test was a significant practice change for many physicians, and HIV testing had historically been associated with requirements beyond those for other diagnostic tests, some physicians had significant concerns about making sure they were following the standards and expectations of their college.

To address this concern, the rationale and processes of the acute care testing project were submitted to the College of Physicians and Surgeons of British

Columbia for review. This review identified no concerns with the process, in particular with respect to informed consent and the delegate follow-up process, and recognized the importance of early diagnosis and the need to ensure that the diagnosis is not missed.

Policy change: pre- and post-test counselling guidelines

Before 2011, the BC Centre for Disease Control's guidelines required pre-test counselling for anyone seeking or being offered an HIV test. This counselling had to be offered verbally and could take as long as 20 minutes per patient.

However, the existing pre- and post-test counselling guidelines had been developed for an illness that had changed considerably since they were created. Also, the *requirement* of pre- and post-test counselling has been recognized as a significant barrier to introducing routine offer of HIV testing into general medical settings. In consultations with family practitioners and in a survey distributed to all providers before the rollout of routine offer of HIV testing in acute care, physicians cited the time burden of counselling as one of the most important barriers to implementing a routine offer of HIV testing in their practice.

In family practice, the requirement of an in-depth discussion with every patient consumes a prohibitively lengthy amount of time. In acute care, providing pre- and post-test counselling to each patient who was offered a test would overburden physicians who were already busy. In acute care especially, the need to provide counselling before performing a diagnostic blood test was a significant departure from the practice for any other blood test.

In addition, pre-test counselling was considered a barrier for patients asking for and receiving an HIV test. The assessment of risk before the provision of an HIV test requires the patient to (1) know their risk and (2) disclose that risk to their healthcare provider. The Vancouver STOP Project leadership recognized that this posed a barrier to the patient's ability to access a potentially life-saving diagnosis. To access an HIV test, patients had to disclose and discuss their risks with

a healthcare provider, which they may or may not have wished to do. The requirement of this discussion is now considered excessive and potentially undermines rather than ensures patient autonomy because it requires patients to have a standardized discussion with their provider rather than one that addresses their individual needs.

The Vancouver STOP Project worked closely with the BC Centre for Disease Control to draft new pre-test guidelines that addressed all these issues.

The BC Centre for Disease Control released its new *HIV Test Pre and Post Test Guidelines* in September 2011. These guidelines no longer require every element of pre- and post-test counselling to be provided verbally, but they do continue to require verbal consent. Providers in BC are required to inform the patient that the test is being recommended to ensure that patients have the opportunity to decline the test. However, providing written information to patients about HIV and HIV testing is also considered sufficient to obtain informed consent from a patient. Under these guidelines, the patient and provider can have the conversation that the patient wants to have: patients are able to discuss their risks with the healthcare provider if they wish, but they are not required to do so to access the test.

A HealthLinkBC File FAQ on HIV testing was created, with input from AIDS Vancouver and Positive Living BC, to fulfill the informed consent requirement set out in the guidelines. This HealthLinkBC was distributed to all family practices and acute care institutions introducing the offer of HIV testing. It was also posted on the Government of British Columbia's website.

This policy change has not been without controversy. Community groups have voiced concerns that the end of mandatory verbal pre-test counselling infringes on the rights of people to understand the intricacies of an HIV diagnosis in a landscape where HIV is still stigmatized, where medical records may

be accessed by any clinicians involved in one's care and are imperfectly protected for confidentiality and where HIV non-disclosure is criminalized.

The Vancouver STOP Project leaders are passionate about and strongly committed to their code of ethics as healthcare providers, and they stand by this policy and practice change. Healthcare ethical analysis requires that the risks and benefits of an intervention be weighed and balanced. Although the risks of being diagnosed with HIV may have outweighed the benefits many years ago, the project leaders strongly believed that the benefits of being diagnosed as early as possible outweigh the risks related to receiving that diagnosis in the current testing and treatment context.

Routine offer of HIV tests in family practice

One element of shifting the testing paradigm was the implementation of HIV testing in family practice. The goal was to ensure that everyone with a family doctor or attending a walk-in clinic would have access to an HIV test and thus knowledge of their HIV status.

The Vancouver STOP Project, in partnership with University of British Columbia Continuing Professional Development (the education organization contracted to offer training to family physicians) and the family physician leadership in the province began the work needed to roll out routine HIV testing in family practice in 2011.

Guidelines

Family practitioners, who must maintain a body of knowledge about many medical conditions, often work with guidelines. However, at the time of the rollout, there were no provincial HIV testing guidelines in BC. The medical health officer for Vancouver instead provided a clear recommendation for family

physicians in Vancouver about routinely offering HIV testing. Her recommendation was that family practitioners offer an HIV to:

- anyone who asks for an HIV test; or
- any adult who has not had an HIV test in the last year, any time that blood work is already being ordered; or
- any time treatment or diagnosis is sought for another sexually transmitted infection, hepatitis C or tuberculosis.

Although this recommendation was critical to initiating a change in practice in primary care, it was not enough on its own. Much more work was required to support family practitioners to integrate routine offer of HIV testing.

Partnership with University of British Columbia Continuing Professional Development

The Vancouver STOP Project needed a trusted and experienced educational organization to help develop and coordinate educational opportunities for family physicians. In 2011, the Vancouver STOP Project contracted University of British Columbia Continuing Professional Development to offer education to family physicians on how to implement routine offer of HIV testing. This organization was chosen for its experience with content development and delivery and for its strong relationships with family physicians in BC.

Engaging family physicians in consultations about HIV testing

The family practice team, a smaller group within the Vancouver STOP Project, executed an extensive and layered consultation process with family physicians to understand their concerns about routine offer of HIV testing, engage them in identifying barriers to changing practice and determine strategies to reduce barriers. Crucially, several bodies that represent family physicians in BC were at the table, including the British Columbia Medical Association, including representation from the general practitioners'

services committee. Representatives from the Society of General Practitioners of British Columbia, the British Columbia College of Family Physicians and the Department of Family Practice at the University of British Columbia were also present at consultations.

The information gathered from these consultations led to the creation of three training opportunities that offered continuing medical education credits for family physicians: a 90-minute webinar, a five-hour workshop and in-practice support sessions. Training opportunities were advertised through the database of family physicians maintained by University of British Columbia Continuing Professional Development, through physicians' personal networks, through flyers at conferences and through outreach to targeted medical practices. Follow-up support for family physicians who had received training through an in-practice support session was available from a registered nurse and a family physician specializing in HIV primary care.

The team designed a website to support family physicians to routinely offer HIV testing to their patients. The website offered patient resources, guidelines, resources to facilitate implementation and, importantly, a series of telephone numbers that family physicians could call in the event that one of their patients received a positive result.

Ensuring support in the event of a positive result

A critical part of the implementation of routinely offering HIV testing in family practice was ensuring that existing responsive and accessible infrastructure was available to support family physicians in the case of a positive result. As mentioned above, many family practitioners have little experience with HIV, which could pose a significant barrier to integrating routine offer of HIV testing into family practice.

The infrastructure of support for physicians was largely coordinated by the Vancouver CDC, which is responsible for public health follow up for HIV diagnoses. In addition, the STOP Outreach Team was

available to offer support to family physicians diagnosing HIV and making the linkage to HIV primary care, especially for patients with complex needs.

Challenges to implementation

The Vancouver STOP Project faced a number of challenges in the implementation of routine offer of HIV testing in family practice settings, particularly the timeline, the recruitment of family practitioners and the need to address practitioners' competing priorities.

Timeline: The Vancouver STOP Project learned that it can take significant time to implement real and effective conceptual change. The family practice testing initiative had an 18-month timeline—not very much time to address the educational needs and timelines of all family practitioners. As a result, project staff had to accept that they could only reach those practitioners who were most predisposed (early adopters) to the introduction of HIV testing in their practice.

Recruitment of family practitioners: Not all VCH family practitioners participated in training and education on routine offer of HIV testing. Although it was challenging to engage family physicians, the in-practice support program was still considered successful, with positive responses from 50% of those practices approached to participate. A variety of means were used to reach busy family practitioners. For example, the Family Practice In-Practice Support Team partnered with a local nurse to engage practitioners who served a predominantly South Asian population.

Competing priorities: Family practitioners are busy, and HIV competes with many other important medical issues for their attention. The team had to work very hard to build their rationale for routine offer, communicate this effectively and then educate and provide ongoing support to family practitioners to mediate this challenge.

Routine offer of HIV testing in acute care

The Vancouver STOP Project also implemented routine offer of testing in acute care across Vancouver. The goal of this initiative, like many of the testing initiatives that the project developed, was to expand the opportunity for HIV testing and to reduce the number of people unaware of their HIV status.

Initially, the Vancouver STOP Project believed that acute care testing would reach a population of people who were not being reached with testing in other settings. This included people without a family physician, people who only seek medical attention in emergencies and people with risk behaviours that they would not disclose to a healthcare provider either because they are unaware of their risks or because they choose not to disclose them for a variety of reasons. In this way, routine offer of HIV testing in acute care complemented the efforts to reach people with testing in family practice and in targeted settings.

Results of the acute care testing pilot, however, demonstrated that routine offer in acute care reached more patients who were older, who did not have identifiable risk factors for HIV and whose disease was more advanced. Routine offer in acute care was also an important additional opportunity for HIV testing for people with recognized risk factors who were testing regularly and connected to a family doctor. This further underscored the notion that the traditional paradigm of patient-initiated HIV testing alone does not have sufficient reach and that multiple opportunities for testing in multiple settings are required.

The large number of test results that became available for analysis when routine offer of testing was implemented in acute care helped the Vancouver STOP Project team understand two key issues associated with HIV diagnosis in Vancouver. First, routine offer of an HIV test as part of hospital care is highly acceptable to patients, with the overwhelming majority of patients (94%) accepting an HIV test in this setting. Second, many individuals who were diagnosed in

acute care had been seen for conditions related to their HIV infection in community and acute care, but HIV had not been considered because their providers were not aware that the patient had a specific risk factor placing them at high risk for HIV. Finally, providers often assume that those with recognizable risk factors are already being tested elsewhere, and this assumption is frequently incorrect. This information will be important in understanding the future of HIV testing in health care settings.

Policy change: an alternative delegated follow-up process

In addition to the changes to the pre- and post-test counselling guidelines mentioned above, to facilitate routine offer in acute care, it was critical that a follow-up process be articulated and approved before the phased implementation of testing began in October 2011. One of the primary concerns of physicians working in acute care was the time needed to provide follow-up support and services following a positive diagnosis for people with whom the doctor often did not have an ongoing relationship.

To address this issue, the Vancouver STOP Project implemented an alternative delegated follow-up process. Physicians who ordered an HIV test that returned positive could now choose to have nurses from the VCH Communicable Disease Control group facilitate the conversation with the patient about the HIV diagnosis and provide linkage to follow-up care and support, including public health follow-up and partner notification. This alternative process could be chosen whether or not the patient was still in hospital when the results were available.

The decision to define a separate delegated follow-up system ensured rapid and expert follow-up, even when the testing provider had little HIV-specific experience, little time to provide adequate post-test counselling or no continuing therapeutic relationship with the patient.

The process built on an existing mechanism in Vancouver's public health infrastructure: every positive HIV result is reported to the medical health officer. When notice of a new positive result was received, nurses working under the medical health officer's authority contacted the ordering physician to ask if they would prefer that VCH Communicable Disease Control staff notify the patient of the diagnosis and provide follow-up. Since the implementation of routine offer of HIV testing in acute care and the new delegated follow-up process, in 99% of cases where the patient had already been discharged from the care of the physician the ordering physician delegated that activity. This delegated follow-up process, however, means that people cannot be offered a non-nominal HIV test in hospital; patients requesting a non-nominal test in hospital would be directed to a community testing site.

This delegated follow-up process was a key component of the process reviewed by the College of Physicians and Surgeons of British Columbia. This was crucial in the rollout of HIV testing in acute care, as physicians were assured that a robust follow-up process was in place and that it met the expectations of their regulatory body.

Phased implementation

The offer of routine HIV tests was phased in at four Vancouver hospitals: St. Paul's Hospital and Mount St. Joseph Hospital, both administered by PHC, and Vancouver General Hospital and UBC Hospital, both administered by VCH. In October 2011, St. Paul's Hospital and Mount St. Joseph Hospital were the first to roll out routine offer of HIV testing. Vancouver General Hospital and UBC Hospital were engaged later.

Implementation: leadership engagement

The operational and clinical leadership of each hospital, department and unit were engaged in the implementation process. This engagement was carried out by a small core team including the medical health officer, the project lead and the acute

care initiative's clinical leader. The involvement of the hospital's medical and operational leadership was critical to the success of the initiative, because physicians would be accountable to their hospital's leadership structure for routine offer of HIV testing and not to the project team charged with facilitating implementation.

Offering tailored support to units ensured that routine HIV testing could be streamlined into already existing structures, increasing the likelihood that physicians would offer the test. Each unit helped the project team understand its workflow, and thus the type of support it would need, through a series of meetings.

Implementation: staff education

It was important to present the rationale for routinely offering HIV testing and the effect this would have on *all* staff, even those tangentially involved in HIV testing. This ensured that everyone understood the evidence for testing and their role in the process of offering an HIV test.

Physicians and residents were offered information on routinely offering HIV testing at rounds and academic half days, and the project's clinical leader presented at every resident orientation day at Vancouver General Hospital, which is a mandatory meeting for all attending physicians and all residents. For eight weeks, nurses were offered in-service training on the implementation of routinely offering HIV testing. Unit clerks received training on how to order, process and interpret HIV test results. Allied health staff were briefed and housekeeping staff were instructed to leave the patient FAQ on HIV testing on each newly made bed.

As much as possible, the project team used the existing channels of communication to disseminate their messages. Although the Vancouver STOP Project's clinical lead for this initiative would draft the communications, she relied on the hospital's existing communications processes to ensure that those communications reached physicians, residents, nurses

and other staff. This was critical to ensure that this information stood out from the large volume of communication—e-mails, faxes, posters, etc.—that staff receive every day.

Ongoing support

Once rollout was completed on a unit, the project team returned to offer more training to staff at the two- or three-month mark. During this interaction, the project team also reported back on testing trends, including offer rates, acceptance rates and the hospital's diagnostic yield. The project team also offered narratives that provided case histories of people diagnosed with HIV. These were particularly effective because they demonstrated the value and clinical relevance of the practice of routine offer of HIV testing in hospital.

Challenges

Like the implementation of routine offer of HIV testing in family practices, the implementation of routine offer in acute care facilities came with challenges. A few of these challenges are summarized below. Others are summarized in the case study on acute care testing at www.catie.ca/pc.

Lack of high-level recommendation: The Vancouver STOP Project launched the implementation of routine offer of HIV testing in acute care in the absence of a provincial or national recommendation. This meant that the project team had to build its own clinical and public health rationale and present it to operational and clinical leadership. The fact that the health authority and the medical health officer championed this initiative helped address this challenge.

Clinician discomfort: While many physicians were keen to start offering testing, some were initially uncomfortable with offering an HIV test and particularly concerned about how patients would react. Their concerns were partially addressed through extensive clinician education, the *It's Different Now* social marketing campaign and ongoing support. The fact that

94% of patients in acute care accepted to be tested also served to reduce clinician fears of negative reactions from patients.

Time: Many hospital staff were concerned that routinely offering an HIV test would increase the amount of time a clinician was required to stay with a patient. They were also concerned that clinicians would not be able to adequately provide follow-up for people who tested HIV positive. To address these concerns, the offer of routine testing was streamlined into existing admission structures, the pre- and post-test counseling guidelines were changed (while still requiring informed consent) and the follow-up process was delegated to Vancouver Communicable Disease Control.

Communicating with healthcare providers and the public

It's Different Now and Change HIVStory

In November 2011, the Vancouver STOP Project developed and launched a city-wide, award-winning social marketing campaign to increase awareness of the contemporary realities of HIV among the general public and encourage people to take an HIV test. Specifically, the campaign was developed to support routine offer of an HIV test in clinical settings in 2011. These settings included Vancouver's four hospitals, many family practice settings and other clinical services. In some settings, this campaign was also designed to encourage healthcare providers to offer an HIV test to patients.

The Vancouver STOP Project did not have the expertise to develop and deliver a social marketing campaign on the scale of *It's Different Now*. They made a strategic decision to hire an outside marketing firm to develop the campaign. Through a competitive process, False Creek Ventures was selected on the basis of its sophisticated idea and strategy for the campaign.

The campaign was developed around a central theme — that HIV isn't the disease it was in the 1980s—and used the tagline "It's different now" to

highlight that. The campaign was disseminated on social media, through a website, through posters in healthcare settings and through outdoor and print ads. Contests were run to increase traffic to the website, which included more detailed information about HIV. Messages were fine-tuned and specific: all sexually active people should be tested for HIV, HIV testing technology has improved, HIV treatment has improved and the prognosis after an HIV diagnosis has improved. The campaign spread the message that it's now possible to live a long, healthy life with HIV.

It's Different Now was implemented in two phases. The first phase focused on reducing the stigma associated with HIV by increasing awareness about who should get tested and how HIV testing, treatment and prognosis have advanced, thereby encouraging people to agree to take an HIV test when offered one. The second phase was a call to action — it aimed to rally Vancouver residents to help eradicate HIV by getting tested and encouraging their friends to get tested.

Targeted HIV testing

The implementation and expansion of routine offer of HIV testing—both rapid, point-of-care tests and standard blood draws—in targeted (high prevalence) settings was led by a smaller team within the STOP Outreach Team known as the targeted testing team. This team was comprised of three nurse educators and was led by a clinical leader who is a registered nurse.

The expansion of HIV testing in targeted settings was the third prong of the Vancouver STOP Project's effort to shift the testing paradigm in Vancouver. The goal of this initiative was to expand access to HIV testing for people who are particularly at risk for HIV—those who are a part of a high-prevalence community.

The goal was accomplished through a mixed approach to HIV testing, which included rapid and standard testing in clinics, community-based organizations and community spaces frequently accessed by people at risk for HIV. For services and programs

introducing testing in these settings for these populations, providers were encouraged to have a more in-depth pre-test discussion with the patient than that discussion that would take place in hospitals or family practices.

The Vancouver STOP Project identified several services and settings in which increased access to HIV testing would benefit clients. VCH's primary care centres were key sites that implemented routine offer of HIV testing to high-prevalence groups. Other services that implemented testing included mental health and addiction services funded by VCH, abortion clinics, the justice system, clinics in housing funded by VCH, pilot programs in three First Nation communities within VCH's region, youth clinics, dental clinics, a peer testing project, and targeted testing among gay men in bath-houses and via a mobile van.

Routine offer of HIV testing in Vancouver Coastal Health primary care centres

Through the community health centre model, services to address each step of the client journey are often integrated in a single physical location. Clients seeking HIV testing and receiving their diagnosis with their primary care provider can often then receive their HIV treatment, care and support in the same setting.

VCH runs nine community health centres in the city, many of which are located in Vancouver's inner city. These centres offer direct primary care services, usually through an interdisciplinary care model. Typically, the populations served by these centres have trouble accessing fee-for-service clinics and have multiple co-morbidities. While providers primarily offer standard laboratory testing for HIV in these settings, most clinicians are also trained to use the point-of-care test and may choose to offer it in rare circumstances.

Engaging Vancouver Coastal Health community health centres

To engage the community health centres and encourage them to expand their HIV testing, the VCH community medical director sent out a clear directive to the leadership of the centres. This directive informed them that the implementation of HIV testing was a priority of the health authority and implementation should begin by a specified date (July 15, 2011.) In the directive, the medical director also indicated that each community health centre would receive support from a Vancouver STOP Project clinical lead and a nurse educator.

The clinical lead and the nurse educator met with clinical leadership of each centre, providing the centres with the opportunity to learn the clinical and public health rationale for routine testing and to offer any feedback, air any concerns and ask any questions. During this initial meeting, the STOP nurse educator would review the clinic's current HIV testing rates and indicate that VCH expected that within 18 months all of the clinic's patients would have had an HIV test recommended to them by their provider.

The STOP team's nurse educators would then book time to meet with the clinic's staff, either at stand-alone meetings or during staff meetings. At these meetings the nurse educators would provide an update on HIV, discuss how testing, treatment and support were different from 30 years ago, and build the rationale for routine HIV testing. The nurse educators would also present the various laboratory testing reminder options (pre-ticked, stickers, etc.) and allow the clinic's team to discuss the system that best fit their needs. The clinical leadership would then identify an implementation date and the nurse educators would follow up with support materials and any other support the clinic's leadership thought would be needed before that date.

A critical component of the support offered to community health centres from the nurse educators was a follow-up interaction, usually face to face but sometimes over the phone, three to four months after implementation. This follow-up support was

offered to gauge how the centre was handling routine testing. During this interaction, the nurse educators would communicate how the clinic's testing trend had changed from the initial meeting. The nurse educators would also ask staff about best practices, share best practices from other clinics, brainstorm how to address challenges and return again in three or four months if testing trends had not improved. This iterative process provided constant reminders to clinicians that routine HIV testing was an important pillar of the Vancouver STOP Project's HIV strategy and offered them ongoing, tailored support to overcome their challenges and improve testing rates.

Supporting patient follow-up

Community health centres that implemented HIV testing had the option to contact the STOP Outreach Team for support if a test returned a positive result. The team made itself available to support and coach clinicians over the phone to offer diagnoses and to be present in clinics to help offer diagnoses for patients who consented to have them present.

To ease the burden of follow-up, VCH Communicable Disease Control and the STOP Outreach Team took on the responsibility for public health follow-up, and primary care providers were encouraged to contact either of these teams for the service.

Care for individuals diagnosed in primary care was usually offered within the community health centre. To support VCH's primary care physicians to provide this care, a partnership between the John Ruedy Immunodeficiency Clinic (IDC) and VCH's primary care program offered VCH physicians the opportunity to preceptor at the IDC, a leader in HIV clinical care.

Mental health and addictions services

Routine offer of HIV testing using a standard laboratory test was implemented in mental health and addiction services in Vancouver.

Typically, VCH-funded mental health services are offered through mental health teams, which are interdisciplinary and often set up along the community

health centre model. Addiction programs are usually embedded in primary care services. In addition to these sites, detox settings, as well as Insite, a supervised injection site in Vancouver, were engaged to integrate routine offer of an HIV test.

Abortion clinics

Routine offer of HIV testing using a standard laboratory test was also introduced in Vancouver's abortion clinics upon their request. The engagement process used was similar to the one used for primary care. The way in which the test was offered, however, differed. The test was offered by the intake counsellor before a woman had an abortion. This approach was taken because women typically do not see their abortion provider before the procedure.

Follow-up for a positive HIV test result was not provided by the abortion clinic. While abortion clinics in Vancouver are moving toward a women's wellness model, meaning that they provide follow-up care and support, most women do not return to the clinic for follow-up care. The BC Centre for Disease Control, as a result of an ongoing relationship with these clinics, provides any follow-up diagnosis and linkage to care for women who receive a positive HIV result through an abortion clinic.

First Nation communities

The targeted testing team also engaged three First Nation communities out of the 15 in VCH's catchment area to offer HIV testing. For more information on the engagement process, please see the section on how Aboriginal communities were engaged during STOP on page 34.

HIV testing was offered as part of health fairs that were also addressing other health concerns, including diabetes and cardiovascular health. Representatives from Chee .Mamuk, the targeted testing team and First Nations and Inuit Health Branch (Health Canada) would offer mentorship to community nurses on the point-of-care test, advising them on how to offer routine testing and what information to cover in a

pre-test discussion with those seeking a test. This mentorship would happen in the days leading up to a wellness fair.

Health justice

The Vancouver STOP Project aimed to introduce rapid or standard HIV testing in three justice models in the city. The Downtown Community Court and Drug Treatment Court of Vancouver are alternative justice models with a strong health component. The third justice setting is the Vancouver Jail, for which VCH is contracted to offer health services.

In the alternative justice models, participants are mandated to come in for mental health or addiction treatment, counselling or group support almost daily. Each of the staff of these courts includes a nurse, and they have been trained to offer point-of-care and laboratory testing for HIV. Very few tests have been done through this initiative, however, largely because the population has been screened before or the nurses feel it is not the right time to offer the test.

While introducing HIV screening into alternative justice models that focus heavily on improving the health and well-being of participants has been easy, it has been a challenge for the Vancouver STOP Project to build a strong screening program in Vancouver Jail.

Supportive housing settings

Most VCH-funded housing projects have clinics staffed by clinicians from VCH Primary Outreach Services. Because this housing serves a population with a higher prevalence of HIV, rapid and standard laboratory HIV testing were implemented as part of the clinic's wider services.

Many of the clinics are incorporating HIV testing into wellness days where residents are offered the opportunity to get receive testing for diabetes, a heart health check-up, tuberculosis screening and STI screening as well as HIV testing. Many of the clinics are encouraging participation in these wellness days by offering chocolate.

Positive results are followed up by the testing clinician, and ongoing HIV primary care can be offered by the clinic's physicians and nurses.

Youth clinics

Vancouver runs a series of youth clinics that focus largely on STI diagnosis and treatment and contraceptive management. Routine laboratory HIV testing was introduced into these settings, using the same process that was used in primary care. There was some resistance from clinicians in these clinics, as this initiative was not seen as appropriate for their patients.

HIV testing in dental clinics

The implementation of rapid HIV screening in a handful of dental clinics in Vancouver is one example of how this project tested new ideas across the continuum of care. This feasibility pilot, a partnership between the Vancouver STOP Project and Does HIV Look Like Me? International included the recruitment, training and support of dental practices to routinely offer rapid, point-of-care HIV screening in their practices. The goal of routinely offering HIV screening in this setting was to give more people the option to get tested regularly.

The Vancouver STOP Project and Does HIV Look Like Me? International confirmed with the relevant colleges that HIV screening was within the scope of dental practice. The Registrar of the College of Dental Surgeons of British Columbia hosted a round-table discussion to engage dentists working in private practice and public health. While some private practices were initially interested in providing HIV screening for their patients, having to do so for free in a busy fee-for-service clinic made their participation impossible. Three clinics (Mid-Main, Portland Hotel Society and First United Church) participated in the full training and implemented HIV screening in their practices.

Before a dental clinic launched screening, all of its staff were offered training on HIV and how to use a point-of-care test. A strong follow-up process was also developed to support providers should a reactive result (preliminary positive) be obtained on a test.

Although this project did not result in any reactive results or screen enough patients for its cost-effectiveness to be determined, it has demonstrated its value in other ways. The project allowed the Vancouver STOP Project and the STOP Outreach Team to build stronger links with Vancouver's dentists. As a result of the relationships that developed from this feasibility pilot, all students in their final year of dentistry at the University of British Columbia—the only school of dentistry in the province—attended HIV-specific workshops led by the STOP Outreach Team and Positive Living BC

Lessons learned

This feasibility pilot taught the Vancouver STOP Project that offering HIV screening in a dental setting can be considered acceptable to both patients and providers.

In addition, the Vancouver STOP Project learned that building the necessary relationships between HIV services and dental professionals improved knowledge of HIV and reduced stigma among dentists, certified dental assistants and dental hygienists, even those who did not implement routine screening. This ultimately reduced barriers for people living with HIV who access dental care in Vancouver.

Testing among gay men and other men who have sex with men

Many gay men and other men who have sex with men (OMSM) have a strong testing culture and test frequently. However, gay men and OMSM have the highest incidence and prevalence of HIV in Vancouver, and these rates were stable at the time the Vancouver

STOP Project began. Despite the availability of many testing options for gay men, not all men were being reached with testing options that were appropriate or accessible.

The Vancouver STOP Project, through the work of the STOP Outreach Team, therefore sought to expand HIV testing options and availability for gay men and OMSM. The goal of these initiatives was to reach men in the venues that they frequent and give them the option to test for HIV if they wish. Men were reached through bathhouse testing and a mobile testing van. The mobile testing van pilot was offered in partnership with YouthCO. Testing in bathhouses and in multiple public-sex and gay event locations was thought to reach men who may not be reached in gay-specific clinics or services or who may not be reached frequently enough in family practice or acute care.

Moving sexual health services from a clinic into community-based sites required answering several questions: How will these services be perceived by the community? Will people access the services? How can providers offer the services without coming across as coercive or pushy? The answers to these questions were difficult to predict; numerous strategies were employed to ensure the services were received well and addressed the unmet needs of this diverse community.

Building community connections and addressing community concerns

The Vancouver STOP Project developed partnerships with a number of leading gay men's health organizations and community members to explore new strategies for outreach and service provision. For more information on this extensive work, including the development of the Gay Men's Reference Group, please see the section on "Stakeholder engagement" above.

Community leaders highlighted a number of concerns with venue-based services, such as ensuring privacy of clients, providing culturally safe services

and ensuring that the same standard of care would be provided in venue-based settings as in clinical settings with respect to the services provided and informed consent. However, these concerns, while it was important that they be voiced, were unfounded as all testing was carried out by highly skilled nurses from the STOP Outreach Team in partnership with gay-led businesses or community-based organizations.

The STOP Outreach Team nurses who offered testing in bathhouses and via the mobile van were skilled in working with gay men. One of the key strategies that they employed to address the concerns outlined above was to use a passive approach to outreach. Rather than actively approaching people and encouraging testing, the nurses simply made their presence known: they posted signs, made announcements on the bathhouse's public address system, used social media apps like Grindr or just relied on parking the mobile testing van (called "Know on the Go") in a highly visible spot.

With both the mobile- and bathhouse-based approaches, the project coordinators were aware that some community members might feel their presence was "ruining the fun" or stigmatizing the community by directly linking the community with the image of STIs and HIV. Indeed, some people frequenting venues where STOP was providing services in the community indicated that they would prefer to attend a clinic to access services.

Through client satisfaction surveys and informal conversations with people who did access the services, however, STOP Outreach Team nurses generally found the reaction to their presence and services to be very positive in that many community members were happy to see the services available, were pleased with the quality of services and found them convenient to access.

Lessons learned

Providing HIV and STI services in venues where people may not be expecting them required open, flexible and dynamic strategies from the nurses providing the testing. For instance, some clients may have consumed alcohol or other substances before inquiring about testing. Others may not have felt prepared to receive certain services, or in the case of point-of-care testing they may not have been ready to receive an HIV test result. Further, the STOP Outreach Team nurses were aware that they had entered, and were providing services in, environments that were sometimes highly sexualized. A variety of strategies were used by the nurses to function appropriately, effectively and safely within these unique (and changing) environments. The nurses took a friendly, open approach when potential clients seemed interested in the services they were offering. Maintaining a jovial and friendly attitude while setting consistent boundaries by clearly communicating their role allowed nurses to be present and professional in a sex-positive atmosphere.

Peer testing project

One of the first activities to be funded by the Vancouver STOP Project was a partnership with the PHS Community Services Society (PHS) to train peers to offer HIV testing at public events in the Downtown Eastside. This was the only initiative funded during the Vancouver STOP Project that empowered peers to test each other for HIV and the only time peers have been authorized to administer tests in Vancouver's history.

Neither the Vancouver STOP Project nor PHS could have successfully piloted this peer testing initiative alone. The Vancouver STOP Project had the necessary clinical expertise but needed the expertise of a strong community-based agency. PHS, with its strong connections in the community, its peer-based service delivery model and a history of delivering healthcare services effectively in the Downtown Eastside, was able to supply the expertise that the Vancouver STOP Project was missing.

Nurse educators from the STOP Outreach Team trained 70 peers and PHS staff to provide pre-test information, perform point-of-care tests, read and deliver the results and provide post-test information and a linkage to primary care or HIV care if the person being tested needed it. Forty of those trained passed the competency test and became peer testers. The others were offered the opportunity to become paid educators at testing events.

The STOP Outreach Team's nurses provided clinical support to the peer testers. At each event, between one and six nurses were on site to offer support to peers in performing the test if they needed it, to test the very few people who did not want to be tested by a peer, to offer reconnection to care for people who already knew they were HIV positive and to provide basic primary care to anyone who needed it.

PHS developed a marketing strategy to promote its testing events. Using the taglines "A positive event" and "Know in 60 seconds. Live a lifetime," the campaign distributed postcards and posters and maintained a social media presence to encourage people to get tested.

Between June and October 2011, PHS held 26 public events. Through these events, 4773 tests were performed, 11 people were diagnosed with HIV and 324 people who had been lost to care since their positive diagnosis were reconnected to care.

This model of HIV testing challenged assumptions about how and where healthcare should be delivered and who should deliver it. Only one person out of the 4773 tested during these events asked to be tested by a nurse rather than a peer. The project demonstrated that a blended testing project using both peers and professionals could educate, test and re-engage Vancouverites with complex barriers to accessing HIV services.

The project also demonstrated that there was not a hidden epidemic in Vancouver's inner city. Although the prevalence of HIV in the Downtown Eastside, at 6%, it is not 30%, as many suggested it might be. The

project was, nevertheless, cost-effective with a positivity yield of 0.02% and ultimately was demonstrated to be a highly effective way to offer healthcare services to a population that would not access healthcare in a traditional setting.

Challenges

Despite the novelty of peer testing in Vancouver's HIV culture, there were surprisingly few challenges to rolling out peer testing in the city. The Vancouver STOP Project experienced some resistance from the BC Centre for Disease Control as well as doctors in the community. The BC Centre for Disease Control was concerned that tests would be performed incorrectly, that clinical protocols would not be followed and that the appropriate reporting might not happen.

Doctors in the community were concerned about continuity of care for their patients. Only positive results were communicated to doctors, and often these results went to the STOP Outreach Team physician rather than to the participant's primary care provider. Some physicians felt that this did not allow them to adequately address the healthcare needs of their patients and did not give them a full picture of their patients' health.

Lessons learned

Several important lessons were learned from the implementation of this peer testing project. Perhaps most important, the Vancouver STOP Project learned that anonymity in testing is not necessarily needed for this population. Knowing the peer performing the test was not a barrier to testing for participants. In fact, part of the success of the initiative was breaking down the belief that people always want anonymity when receiving an HIV test.

In addition, the celebratory atmosphere created at the testing events was an important incentive to people's participation. The fact that food and entertainment were provided meant that testing became a community event. The events were an efficient way to update residents' knowledge of HIV, HIV transmission and

the window period, treatment, and how to reduce risk of onward transmission. After events, PHS staff occasionally heard people who had attended the event sharing their knowledge with their peers on the street.

Monetary incentives in the form of a \$5 gift card to a local department store allowed the Vancouver STOP Project to reach an extremely marginalized group of people who would not otherwise have been engaged in healthcare. This incentive offered participants an opportunity to purchase necessities.

Finally, the presence of peer testers, PHS staff and nurses on site allowed testers to get support from trusted services providers (the PHS staff), and it allowed people newly diagnosed or reconnecting to care to get strong linkage to care and comprehensive follow-up support.

Point-of-care HIV screening at the John Ruedy Immunodeficiency Clinic

Early in the STOP journey, the John Ruedy Immunodeficiency Clinic (IDC) was considered as a site for expanding HIV testing. Testing had not been performed on site at this tertiary HIV clinic before the Vancouver STOP Project, but it was included in STOP plans to address the increasing number of sero-discordant couples cared for at the IDC. During the planning stage, it seemed an obvious quick win to promote the availability of testing not only to the partners of IDC patients but also to staff of and visitors to St. Paul's Hospital and the local community. Once the team had received their training and adopted the processes required for both standard and point-of-care HIV testing and pooled NAAT testing, the pilot was launched with publicity throughout the hospital and in the local community.

Since its launch, the IDC testing initiative has had one of the highest yields of new positive diagnoses. Clients have reported that the relative anonymity with which they can access a test at the IDC is a big attraction. This initiative not only resulted in a large number of new diagnoses with direct linkage to care, it also demonstrated the need for another key component of a comprehensive testing strategy. While many people who are aware of their HIV risk find community HIV testing clinics convenient and easy to access, others want to access HIV testing in a medical space where they could be going "for any reason." This underscores one of the major findings of the STOP Project, which is that no single testing strategy has sufficient reach to meet the needs of all those who need an HIV test.

Linkage and engagement *in treatment, care and support*

The Vancouver STOP Project sought to improve the client journey across the full continuum of HIV services. One of the most significant aspects of this work was the effort to, and ultimately the success in, enhancing linkage, engagement and retention in all components of this continuum.

The Vancouver STOP Project developed a strong, reliable and integrated follow-up and engagement-in-care system by enhancing the linkage from targeted testing sites, family practices and acute care; by establishing new services, such as the Peer Navigators Program and the STOP Outreach Team, which specialized in engagement, linkage and retention in care; and by enhancing existing services that aim to support some of the most vulnerable people living with HIV in Vancouver, such as the Towards Aboriginal Health and Healing (TAHAH) Program, the Maximally Assisted Therapy (MAT) Program and supportive housing services.

Enhancing discrete services while improving linkage and retention

An important component of improving linkage, engagement and retention in treatment, care and support services was the enhancement of these services themselves. The Vancouver STOP Project enhanced services across the HIV continuum of care

almost simultaneously. This was a critical component of the success of the overall project—the services that they were linking people *to* and retaining people *in* now had greater capacity to serve the needs of clients. By enhancing the capacity of HIV services to meet the needs of new and existing clients, the Vancouver STOP Project improved the ability of the city's health infrastructure to provide appropriate and timely services.

History of linkage and engagement in Vancouver before STOP

Before the Vancouver STOP Project, Vancouver had a strong existing infrastructure of HIV prevention, testing, treatment, and care and support services. In addition, Vancouver was home to extensive mental health, addictions and harm reduction services, case management programs and supportive housing options.

Despite this strong infrastructure, it had been challenging to engage people across the continuum of care. In 2010, 60% of people were being diagnosed with HIV when they were already clinically indicated for treatment, and Hogg et al. (2011) suggest, in unpublished data, that only 43% of people living with HIV/AIDS in Vancouver achieved a viral load of less than 250 six months after starting treatment. Both of

these issues relate to breaks along the patient journey from HIV testing and diagnosis to treatment initiation and adherence.

With an understanding that despite strong service delivery not everyone in Vancouver was diagnosed with HIV and engaged in care, receiving treatment and successfully adhering to treatment, the Vancouver STOP Project emphasized strong linkages and integration between the traditional silo of HIV testing and diagnosis, treatment, and care and support, and the silo of housing, mental health and addictions, food security and case management services.

Enhanced linkage to care immediately after HIV diagnosis

A significant part of the Vancouver STOP Project's activities related to linkage to care (almost) immediately after HIV diagnosis. By providing strong support to clinicians and peers offering testing, the project emphasized that (a) those who tested positive should be linked into a navigable, accessible and responsive follow-up system to receive the support they needed as they moved through the stages of the client journey and (b) those who test HIV negative should be linked to appropriate prevention and support services.

The following outlines the activities implemented by the Vancouver STOP Project to ensure proper linkage throughout the client journey for those who test HIV positive. For more information on testing activities, please see the section entitled "HIV testing: shifting the paradigm," above.

Linkage to prevention and support services

During peer testing events and through testing targeted to gay men in bathhouses and at outdoor sex venues, the STOP Outreach Team also provided linkage to mental health and addiction services that were

culturally appropriate for people who tested negative but continued to be at very high risk for infection.

These primary prevention measures were not part of the mandate of the Vancouver STOP Project but were seen as a part of the client journey and an important component of HIV prevention.

Linkage after targeted testing

In some targeted settings that began offering routine HIV testing to clients, such as mental health and addiction services, dental clinics and abortion clinics, clinicians did not have extensive experience with HIV/AIDS care. In these settings, the STOP Outreach Team and Vancouver Coastal Health (VCH) Communicable Disease Control took on the responsibility for public health follow-up and linkage to care.

The ways in which these teams took over these important linkage and engagement activities varied from setting to setting. In mental health and addiction services, the testing clinician typically would contact the STOP Outreach Team as soon as a positive result came in. At this point, the STOP Outreach Team would support the actual HIV diagnosis and assume responsibility for public health follow-up, partner notification and provision of HIV primary care, all while making strong linkages to ensuring sustainable care in the community.

For mental health and addiction services, this arrangement was important for improving the overall client journey for their clients. This approach integrated mental health and addiction services into the client journey from HIV diagnosis to treatment but did not overburden the service's staff with work they were not equipped to do. Once the STOP Outreach Team had linked a person newly diagnosed with HIV to care and ensured that the client had been engaged, a memo was sent to the mental health or addiction service providers to inform them of the HIV primary care plan.

Rapid testing performed by peers also relied on an enhanced linkage to care system to provide follow-up. Peer testing events were supported by as many as

six nurses, whose responsibilities included providing confirmatory blood work, initiating public health follow-up and providing linkage to care services to people newly diagnosed.

Linkage after routine offer of testing in family practice

Many family physicians implementing routine offer of HIV testing did not have particular expertise in HIV. Many had never given a positive HIV result. They were concerned about receiving a positive result and diagnosing a patient with HIV. The Vancouver STOP Project addressed this concern by outlining a strong and responsive system that physicians could access to facilitate linkage to care for their patients.

Three services were used to provide support to family physicians implementing routine HIV testing in their practices: VCH Communicable Disease Control, the REACH Line and the STOP Outreach Team.

VCH Communicable Disease Control: Providers had access to the expertise of VCH Communicable Disease Control nurses, who could assist with disclosing diagnosis by either supporting physicians over the phone or being present at diagnosis. They also were available to conduct partner notification tracing and assist with referral options and linking patients to care.

REACH Line: Family practitioners also had access to the Rapid Expert Advice and Consultation for HIV (REACH) Line. Operated by the BC Centre for Excellence in HIV/AIDS, this 24-hour telephone line was staffed by physicians with expertise in HIV/AIDS care or by pharmacists. The line provided family physicians with a mechanism to seek advice on HIV/AIDS treatment and management from fellow physicians who had experience with patients living with HIV/AIDS.

Support from both VCH Communicable Disease Control and the REACH Line was available to physicians before 2010. However, it was not clear how responsive and accessible these services were. The Vancouver STOP Team ensured that these services

were responsive to requests for service and could provide timely service to family physicians seeking support before they rolled out HIV testing in their practice. This was critical to ensuring that family physicians would offer routine testing to patients. Doctors who felt that the follow-up support given to them and their patients was inadequate would be less likely to continue to routinely offer HIV testing.

STOP Outreach Team: Family physicians also had access to the services of the STOP Outreach Team. Providers with patients who were newly diagnosed or with patients who were having difficulty engaging in care could rely on the STOP Outreach Team to provide intensive case management and to link patients to HIV/AIDS primary care, social assistance support, housing and mental health and addiction services. The team also operated a 24-hour telephone line for providers needing referrals or advice.

Ultimately, having access to responsive specialized follow-up services and programs allowed family physicians to offer routine HIV testing without the burden of having to become HIV/AIDS experts themselves. This system allowed family physicians to play an important role in the patient journey by providing HIV testing routinely and offering their patients an opportunity to be diagnosed early. A strong and responsive follow-up system, like the one the Vancouver STOP Project tested and enhanced, ensured that those testing positive had the best possible chance to engage in and link to appropriate and sustainable HIV/AIDS treatment and care and support services.

Linkage following routine testing in acute care

One of the biggest barriers to rolling out routine HIV testing in hospitals was that physicians would need to provide follow-up care and support after a positive test result to patients with whom they may not have an ongoing therapeutic relationship after discharge.

The Vancouver STOP Project developed a delegated follow-up system to ensure that patients who received a positive diagnosis would receive strong

engagement and linkage services whether or not they were still in the hospital and their testing provider was in a position to provide HIV follow-up care. In this model, physicians could delegate disclosure of the diagnosis, public health follow-up and linkage to care services to VCH Communicable Disease Control.

This did not require a new partnership between the VCH Communicable Disease Control and Vancouver's hospitals because they had a pre-existing relationship. However, this new, enhanced integration of HIV/AIDS services did improve the knowledge of acute care physicians in Vancouver's hospitals about the work of public health doctors and nurses. Ultimately, it has enhanced the relationship between public health and the community of acute care and primary care providers.

Physicians who did not opt to use the delegated follow-up system provided the diagnosis and linkage to care services to patients. At St. Paul's Hospital, this linkage to care was facilitated by the presence of the John Ruedy Immunodeficiency Clinic (IDC) on site: physicians could simply refer the patient internally for follow-up. In addition, peer navigators were on site to facilitate that transition for patients. VCH Communicable Disease Control remained engaged with these patients as well, for the provision of partner notification services.

Retention in treatment, care and support

Accessing and remaining in care can be a challenge for people newly diagnosed and for people living with HIV/AIDS who have known their status for some time. Providing support to people living with HIV/AIDS to ensure engagement and retention was a significant component of the Vancouver STOP Project's goal to improve the client journey. The Vancouver STOP Project developed and supported a number of discrete but interconnected pilots to reduce the number of people lost to care after their diagnosis and to increase the number of people engaged in

care. Again, part of the success of the Vancouver STOP Project directly relates to these new or expanded services in Vancouver and the fact that these services, which serve a diversity of clients, were implemented almost simultaneously.

The enhancement of existing programs through STOP usually involved the expansion of clinical services to increase HIV testing, treatment and support to particularly marginalized clients. Sometimes this support was specific to starting and staying on HIV treatment, but other times it was more holistic. The Vancouver STOP Project supported significant service expansion at clinics such as the IDC at St. Paul's Hospital, which included expanded access to HIV/AIDS treatment through expanded hours of operation and increased capacity for complex case management and re-engagement of clients through the hiring of nurses, including an Aboriginal nurse educator, social workers and a dietitian, among other things. The Vancouver STOP Project also increased capacity in smaller organizations, such as at Vancouver Native Health Society and the PHS Community Services Society.

Some of the pilots considered to be the most successful and the most important contributors to the Vancouver STOP Project's overall success in transforming the system of care in the city were entirely new initiatives that supported people to access and remain in care, such as the STOP Outreach Team and the Peer Navigators Program. Some of these programs are discussed below.

STOP Outreach Team

The STOP Outreach Team is perhaps the most significant new initiative to be introduced into the landscape of HIV/AIDS services in Vancouver as part of the Vancouver STOP Project. Despite the absence of a Canadian model for such a team, the project developed an effective interdisciplinary team of nurses, social workers, peers and outreach workers, all with the support of a physician, to deliver intensive case management to people with the most entrenched barriers to care.

The mandate of the team is to improve HIV/AIDS treatment adherence in those with the most complex barriers and achieve a suppressed viral load as a marker of success. The team took a very broad approach to achieve this objective and worked to address not only the HIV/AIDS-specific needs of its clients but also their holistic health and psychosocial needs. The team addressed psychosocial and other medical barriers before addressing a client's HIV/AIDS by supporting the client to prioritize their needs.

The team shored up the linkages between services that already existed in the community by offering intensive case management for clients. The team also acted as a bridge between services (from testing and diagnosis to treatment adherence). This bridge could only last for a few weeks and include referrals and accompaniment to culturally appropriate services (e.g., clinics that specialize in the health of gay men), or longer and include one of the team's nurses and one of the team's outreach workers providing intensive case management for those with complex barriers to accessing healthcare. Services for these individuals could last between four months and (in extreme cases) two years.

The team bridged individuals to the most appropriate services in the community, ensuring that there is strong engagement and strong capacity to provide the kinds of support that clients need before they are discharged from the team's case load. This included appropriate housing and food security programs, an assurance that the individual is receiving their full social assistance benefit and an assurance that they have a primary care provider, as well as access to a case manager, social worker or outreach worker whom they trust.

Typically, clients were not discharged until they had started antiretroviral therapy, were well established on their regimen and are seeing the benefits (reduced viral load and increased CD4 count) of being on treatment. Some case managers did not discharge clients who have not achieved suppression.

Embedded team members

The STOP Outreach Team also embedded members in different services and agencies in the community. This is the case at the Downtown Eastside Women's Centre, the Maximally Assisted Therapy (MAT) Program at the Downtown Community Health Centre and the Vancouver Native Health Society.

Embedding members in existing services was just one strategy that the STOP Outreach Team used during the Vancouver STOP Project to deliver services. The team's management tried this approach as a way to extend the reach of a pre-existing program's services (as in the case of the MAT program), to establish new services for a population that did not previously have dedicated services (as in the case of the Downtown Eastside Women's Centre) or to expand the types of services available in programs already serving a captive population (as in the case of Toward Aboriginal Health and Healing [TAHAH] at the Vancouver Native Health Society). Increasing services in programs that were already well regarded by other service providers and community members was the ultimate objective of embedding members in pre-existing agencies.

These embedded members, usually a registered nurse and a social worker or outreach worker, expanded the capacity of that organization to provide services. Sometimes, like at the Downtown Eastside Women's Centre, the embedded sub-team was the only clinical service offered at the organization. Although service providers in these sub-teams worked independently of the STOP Outreach Team, the STOP Outreach team management participated in the hiring process for these staff, and in some cases, the pod reported directly to the STOP team management.

Despite the fact that there was no formal link between most of the embedded members and the STOP Outreach Team, informal channels of communication were kept open between the STOP team and the pods. Many of the embedded members and STOP team members attended the same case rounds at Pacific Coast Housing, the STOP team rounds or the Downtown Eastside community rounds.

The major benefit of this model has been “the threading together” of the STOP Outreach Team’s services with services that already existed in the community. This allows for more integrated service delivery across the client journey. The STOP team can refer clients to community services that, because of the presence of embedded team members, have an enhanced capacity to provide needed care and support. For example, intensive case management clients can be referred to the MAT program because that program has, as a result of STOP funding, a full-time outreach team able to address members’ care and treatment adherence needs.

Conversely, community services now have a strong link to a full-service outreach program that can better serve clients that may need more creative support than community agencies are able to provide. The existence of the STOP team offered community agencies an option to keep on their caseload patients with particularly complex needs whom they may have been challenged to serve in the past, without compromising the care of those individuals or the care of other clients: agencies could keep such people on the caseload by ensuring that they were also supported by STOP.

This integration of members of the STOP Outreach Team into community services that share the same philosophy increased the likelihood that individuals would be retained in care, increased the capacity of organizations to work with people with some barriers to care and allowed the STOP Outreach Team to focus its specialized services on those with the highest barriers, the most entrenched needs and the most complex psychosocial and healthcare challenges.

Discharge from the STOP Outreach Team in relation to linkage to care

Discharging clients from the STOP Outreach Team was a delicate process. The goal of the team was to strengthen engagement in care. Discharge required that the STOP team overlap its efforts with the organization/clinic that was taking over the person’s

primary care. This overlap ensured that the client was retained in care through the transition and strongly engaged after the transition.

Throughout STOP, approximately 75% of the team’s clients needed intensive case management or outreach to maintain their engagement in care, even after their involvement with the STOP Outreach Team ended. Staff tried to ensure that these individuals were discharged to services that could provide the same intensive level of support, such as the Vancouver Native Health Society’s Positive Outlook Program and the Downtown Community Health Centre’s MAT program. Clients who were better able to self-manage were often discharged to the IDC at St. Paul’s Hospital or to the VCH community health centres, many of which have doctors trained to offer HIV/AIDS primary care.

Regardless of where a person was discharged to or the level of engagement they needed, the goal was to have a point person that the client could contact if there was a crisis. This might have been the Prison Outreach Program coordinator at Positive Living BC or the social worker or nurse in many supportive housing projects. This enhanced continuity of care and reduced the likelihood that clients were once again lost to care.

The STOP Outreach Team has had a significant impact on the testing, treatment and linkage to care numbers in Vancouver since its inception, not to mention its impact on the lives of the individuals it has helped.

- Between November 2010 and July 2012, the team performed 1622 tests and diagnosed 33 new clients with HIV. This represents a 2% positivity yield.
- As of February 2013, the team has engaged 404 HIV-positive clients with intensive case management and antiretroviral adherence support.
- Eight-nine percent of people referred were linked to an HIV primary care provider when they transitioned from the STOP Outreach Team to a less intensive care setting.

- Frequent users of the city's emergency departments (people who used the emergency room more than nine times in six months) experienced a 47% decrease in total number of emergency department visits six months after their referral to the STOP Outreach Team when compared with the six months before their referral.
- Between November 2010 and June 2012, the team also helped 97 clients improve their housing status.

Peer Navigation Services

Peer Navigation Services (Peer Navigation) is one of the best examples of a comprehensive, innovative pilot project that supports stages of the client journey, linkage between stages *and* retention in appropriate care. The program, which was implemented in 2011, represents a community-clinical partnership and has been one of the most critical components of the linkage to care system that Vancouver established during the STOP Project. It was established as a partnership between Positive Living BC, the Vancouver STOP Project, and the IDC at St. Paul's Hospital.

Peer navigators are people living with HIV/AIDS who are trained to offer extensive support to people who are newly diagnosed or who are living with HIV/AIDS but not engaged in care. Peers either work on site at IDC or through outreach in the community with the STOP Outreach Team.

Peer navigators at IDC offer extensive support to IDC patients as well as patients hospitalized in the HIV acute care unit. One of the navigators' primary roles at St. Paul's is to help patients assimilate new and complex knowledge about living with HIV. Peer navigators also facilitate the parts of care that patients find most challenging. For those who find waiting for appointments overwhelming, the navigators offer their office as a space to chat and wait. For those who are challenged by interactions with medical authorities, navigators provide accompaniment services or make themselves available for debrief once the appointment is finished. Clinic peer navigators who work at the IDC can also become an important link

between the patient's acute care and the patient's primary care, facilitating a transition that can sometimes be daunting.

Peer navigators in the community offer counselling, appointment accompaniment, advocacy and a familiar face, often providing the services that clinicians and social workers would like to offer but for which they do not always have the time or expertise.

Peer navigators are also often available to talk to people on the day of their diagnosis and can help clinicians to search for a patient who has been lost to care.

The Peer Navigator Services Program plays an important part in retaining people in care along the patient journey. Ultimately, peer navigators, both at St. Paul's and in the community, offer something that most clinicians cannot: a shared experience of diagnosis and engagement in care and its challenges.

Maximally assisted therapy and support programs

The Vancouver STOP Project enhanced a number of programs designed to support some of the most marginalized people living with HIV/AIDS in Vancouver to move toward stability in all aspects of their lives and improve their overall health. For those clients not on HIV/AIDS treatment or able to adhere, stability included those things that might allow them to consider, start and adhere to treatment. The maximally assisted support programs outlined below offer interdisciplinary services, which provide access to nurses, social workers, outreach workers peers and physicians, among other services.

Maximally Assisted Therapy Program at the Downtown Community Health Centre

The Vancouver STOP Project expanded the capacity of the pre-existing MAT program at the Downtown Community Health Centre in Vancouver. MAT is designed to be a low-barrier, one-stop health resource for people living with HIV/AIDS in the Downtown Eastside of Vancouver. In addition to delivering

HIV/AIDS treatment, the program addresses its members' other chronic and acute healthcare needs by providing tailored treatment, clinical care and supports.

This program was funded by STOP to hire a program assistant to support staff to track clinical outcomes and a full-time outreach team, consisting of one registered nurse and one community liaison worker. This allowed MAT to bring its comprehensive approach to HIV/AIDS care, treatment and support to people outside its traditional member base who may need a program like MAT to access HIV/AIDS treatment.

This program represented one important part of the effort of the Vancouver STOP Project to better meet the needs of people in the community who experience complex health needs, including severe mental health issues and addictions, and who face multiple barriers to accessing and adhering to HIV/AIDS treatment.

Toward Aboriginal Health and Healing at the Vancouver Native Health Society

The Vancouver STOP Project also enhanced the services at TAHAAH at the Vancouver Native Health Society. TAHAAH is a clinical and outreach-based program that supports clients to move toward stability and improve their overall health. For clients who are not on HIV/AIDS treatment or able to adhere, stability includes those things that may allow them to consider, start and adhere to treatment. This support, treatment and care program works with extremely marginalized First Nations people living with HIV/AIDS in the Downtown Eastside of Vancouver.

The Vancouver STOP Project supported TAHAAH to continue as a program by funding and actively working with an intensive case manager and two part-time nurses. The Vancouver STOP Project also funded peer health advocate positions and the work of an Elder, who supported clients.

Enhanced housing supports

The housing pilots implemented through the Vancouver STOP Project have contributed to the project's success in taking a wider population approach to improving the client journey. They have expanded three different types of housing, each representing a different level of support and flexibility tailored to individual needs in different geographic settings. It was important that a mixture of housing approaches be used because people living with HIV who require housing in Vancouver have diverse needs.

Stabilization housing supports: In partnership with existing emergency housing providers, STOP expanded priority access to shelter beds for people living with HIV/AIDS. This initiative, which focused on clients who were homeless or leaving hospital, not engaged in care, and facing significant instability, was supported by the STOP Outreach Team to ensure intensive housing and clinical support.

Supported housing: In partnership with an established Vancouver social housing provider, the Vancouver STOP Project provided clinical support to HIV-positive clients living in supported housing, with the goal of supporting and improving treatment adherence. One third of the housing units in this pilot were designated for Aboriginal clients living with HIV/AIDS.

Subsidized independent-living subsidies: In partnership with a Vancouver housing agency, the Vancouver STOP Project provided clinical and housing support and a monthly subsidy to HIV-positive individuals and families. The ultimate goal was to improve HIV/AIDS treatment adherence, improve life skills and support transition to greater housing independence and HIV/AIDS self-management. One third of the subsidies in this pilot were designated for Aboriginal clients living with HIV/AIDS and their families.

Activities to engage and support healthcare providers

The Vancouver STOP Project developed a culture in which not only clients but also *providers* are engaged and supported throughout the client journey. This has ultimately improved services across the care continuum. Activities to educate providers about HIV testing were critical to the success of the Vancouver Project; these activities are described in the sections on testing, above. Additional activities are described below.

Engagement of providers in STOP linkage activities

The engagement of health and social service providers was mostly accomplished through the STOP Outreach Team and VCH Communicable Disease Control, where referral agents (doctors, social workers, housing support workers or nurses) were notified of the linkage of their clients to other services, if they are not linked back into this provider's own care. If hospital physicians received a positive diagnosis for a patient in their care but did not deliver the diagnosis and make the necessary referrals themselves, they were sent a letter describing the engagement and linkage of the patient to HIV/AIDS services. This practice was also followed for new HIV diagnoses made in mental health and addiction services.

This was critical to demonstrating to service providers, healthcare providers and the wider community that VCH, Providence Health Care (PHC) and its partners in this project were committed to providing strong linkage and engagement across the client journey. Furthermore, this practice implicitly valued and encouraged the contribution across the continuum of care of everyone who plays a role in supporting a person from their diagnosis through their linkage to care.

Preceptorship training for family physicians and nurse practitioners

The IDC, in partnership with the BC Centre for Excellence in HIV/AIDS, offers a postgraduate preceptorship program to enhance the skills of primary care physicians in the care and treatment of people living with HIV. At the IDC, physicians can participate in the primary care of patients living with HIV and work alongside HIV specialists and learn from those who provide care and support in 10-C, the in-patient HIV/AIDS ward at St. Paul's Hospital. Physicians can also opt to participate in clinical rotations in other clinics in Vancouver.

The Vancouver STOP Project allowed the IDC to expand its preceptorship program, offering even more physicians and nurse practitioners (through a separate program) the opportunity to obtain additional training in HIV primary care. The IDC has thus ensured that more patients receive integrated care, from diagnosis to treatment management, in community settings through their primary care providers.

Enhanced public health follow-up

In Vancouver, public health follow-up is the primary responsibility of VCH Communicable Disease Control. This service includes support to clinicians and clients for diagnosis, partner notification, disclosure and linkage to care. It is staffed by a team of public health nurses and directed by the medical health officer for communicable diseases. However, before the initiation of the Vancouver STOP Project, public health follow-up for people diagnosed with HIV included relatively passive partner notification and some case management of clients in need. The role of public health in the care of people diagnosed with HIV was not very well known to healthcare providers in the city, and the services that VCH Communicable Disease Control offered were not fully integrated with the HIV primary care of those recently diagnosed, nor were these services maximized to benefit clients and their

partners. In fact, many saw public health as an organization that collected information for surveillance purposes rather than a support service for clinicians and patients.

The Vancouver STOP Project was an opportunity to expand and improve public health partner notification and integrate it more effectively into HIV treatment, care and support services in Vancouver.

Enhanced public health follow-up services

Five changes took place during the Vancouver STOP Project to establish public health follow-up as a critical component of any HIV diagnosis.

1. Measuring outcomes

VCH Communicable Disease Control started to measure its outcomes. It started to (and as of January 2013, still does) measure the proportion of people diagnosed with HIV that it speaks to, the number of contacts actually identified through this conversation and the number of contacts that are notified and get tested for HIV. One of the primary goals of public health follow-up is to ensure that every contact is offered and takes an HIV test and then receives their results. Measuring outcomes at each step of the cascade allowed the VCH Communicable Disease Control team to determine where it was performing suboptimally and where it needed to introduce interventions to improve outcomes.

2. Moving from a passive to an active approach

VCH Communicable Disease Control moved from a passive to an active approach to public health follow-up and specifically partner notification. Before STOP, notifying a person that they had been exposed to HIV had been a standard, if insufficient, practice. Since STOP, nurses from VCH Communicable Disease Control actively follow up with partners who have been notified to ensure they get tested, receive their results and, if found to be positive, receive the care and support that VCH Communicable Disease Control can provide.

3. Partnering with the STOP Outreach Team

VCH Communicable Disease Control pursued an active partnership with the STOP Outreach Team. This allowed VCH Communicable Disease Control to expand its outreach services and to delegate public health follow-up to STOP Outreach Team nurses both for people who have tested positive and for their contacts, who may not have a fixed address and thus may be more difficult to connect with and to connect to care. This relationship with the STOP Outreach Team has also allowed VCH Communicable Disease Control to use a social networking approach to partner notification and contact tracing. Please see below for more information on the social networking approach to partner notification.

4. Engaging and supporting healthcare providers

VCH Communicable Disease Control became more proactive in engaging healthcare providers. Since STOP, every diagnosis that is reported to VCH Communicable Disease Control is followed up with a call to the testing clinician. This call is used as an opportunity to offer any support that the clinician might need in disclosing the diagnosis or linking the patient to care. When partner notification services are completed, public health will send a note to testing clinicians informing them of the outcome of the partner notification process. This reinforces the critical role that public health clinicians play in the immediate care of a person diagnosed with HIV. It also builds trust between medical and public health clinicians and encourages more clinicians to refer patients to public health officials for partner notification services. In addition, VCH Communicable Disease Control can take on the entire responsibility for follow-up of people who do not have an ongoing relationship with the testing clinician.

5. Engaging people who are HIV positive

In cases where contacts of a person diagnosed with HIV are HIV positive themselves, the nurses from the VCH Communicable Disease Control now take a more active approach to ensuring that those individuals who want to be but are not engaged in care are linked to a case management service or an HIV primary care

physician. This has provided people living with HIV yet another access point to HIV primary care in Vancouver and contributes to reducing the number of people who know they are HIV positive but are not engaged in care.

Social networking approaches to partner notification

Using a social networking approach to contact tracing allowed VCH Communicable Disease Control to provide partner notification services to people who may not know the identity of or have an ongoing relationship with their sexual or drug-using contacts. Through this approach, people diagnosed with HIV only have to disclose the venues in which they have sex or use drugs. This allows the STOP Outreach Team to use the resources at its disposal to provide extra hours of targeted testing at a bathhouse, for example, when someone who has been recently diagnosed with HIV

has disclosed that they frequent this venue. Doing so allows people who may have come into contact with the person with HIV to access an HIV test.

Building understanding among healthcare providers of the role of public health

VCH Communicable Disease Control's efforts to report back to testing clinicians on partner notification services and articulate a delegated follow-up process for acute care have improved awareness among healthcare providers of the critical role that public health nurses play in HIV care. The medical health officer and her team continue to build an understanding in the healthcare community of the role of public health in the immediate care of someone diagnosed with HIV and to reach the few healthcare providers who perceive public health as an entity from which their patients need protection.

Developing and implementing *a monitoring and evaluation framework*

The Vancouver STOP Project activities were monitored and evaluated at the provincial level, at the local health delivery area level and at the pilot project level. Monitoring and evaluation kept the Vancouver STOP Project team focused on the objectives of the initiative and allowed the project team to define where they started, to define where they were going and to determine if they got there. These activities also ensured that the project team was aware of any areas in which the project was not meeting its targets or achieving its goals and facilitated the development of a rationale for changing course.

Provincial-level monitoring and evaluation was conducted by the BC Centre for Excellence in HIV/AIDS (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 indicator reports were produced by the BCCDC and BCCfE for monitoring and evaluation purposes; cost-effectiveness analyses was led by Dr. Bohdan Nosyk at BCCfE. For a list of the 29 provincial indicators for testing and treatment, please see Appendix 2.

Monitoring and evaluation at the level of the local health service delivery area took place using a connected, two-pronged approach. The first prong, focused on the local health service delivery area, was addressed through a partnership between the Public

Health Surveillance Unit (PHSU), which is a part of Vancouver Coastal Health (VCH), and the Vancouver STOP Project Team. This partnership developed and formalized a population monitoring and program evaluation framework, which informed the overall monitoring outputs and outcomes of STOP at a population level within Vancouver. These activities were led by PHSU, in close consultation with the Vancouver STOP Project.

The Vancouver STOP Project was responsible for the second prong: evaluating individual pilot projects funded by VCH and/or Providence Health Care (PHC). This included developing pilot project logic models and assessing short- and long-term pilot outcomes, using qualitative and quantitative data collected in partnership with pilot project partners.

The monitoring and evaluation of the Vancouver STOP Project was designed to allow the project sponsors, other leaders and relevant committees to make informed decisions regarding project steering, implementation and resource allocation.

The Vancouver STOP Project and PHSU did not significantly change their approach to monitoring and evaluation over the course of the project in terms of key indicators and data collection processes. They did change how they reported on the data, and these changes are discussed briefly below.

Developing an overall project and individual pilot logic models

One of the first steps in the process to develop the monitoring and evaluation framework was the development of the overall Vancouver STOP Project logic model. For a copy of this logic model (2011), please see Appendix 3. The logic model was designed to allow stakeholders to examine the Vancouver STOP Project as a coherent whole and acted as a visual diagram to demonstrate the rationale used in designing the activities and determining how outputs and outcomes would be assessed.

As pilot projects were identified and planned, individual logic models were developed for each one. These logic models also offered a concise description of the resources (inputs) dedicated to each initiative, the activities undertaken and the key outputs and outcomes expected. These logic models were developed by the Vancouver STOP Project evaluation team, in close consultation with the service provider.

Since the Vancouver STOP Project was time limited up to March 31, 2013, only outputs and short-term outcomes were measured overall and at the level of individual pilots. However, the logic models include the expected intermediate and long-term outcomes, which were developed by the project sponsors at VCH and PHC in relation to the goals and expectations established by the Ministry of Health.

Monitoring the project at the level of the Vancouver health service delivery area

The PHSU was responsible for monitoring the Vancouver STOP Project at a population level within the Vancouver health service delivery area and across

VCH (i.e., at the level of neighbourhoods and the city of Vancouver) and at the program level for acute care and partner notification services. The Vancouver STOP Project used these monitoring data to report on overall changes in the project's targeted activities and results and to support informed decision-making regarding project implementation, resource allocation and post-project sustainability planning.

The PHSU director and epidemiologist assigned to the Vancouver STOP Project joined forces with members of the core team for the Vancouver STOP Project, to form the STOP evaluation task group, which developed population-level monitoring indicators from across the client journey. More specifically, this team developed indicators to evaluate important components of the core testing, public health management, and treatment activities to assess milestones along the path to the achievement of STOP goals. The team used the provincial-level indicators (Appendix 2) developed by the BCCfE as the basis for their approach. Building on the provincial-level indicators, the Vancouver STOP Project also developed indicators specific to their health service delivery area. For a full list of the population-specific indicators, please see Appendix 4.

This group used local public health data, as well as data from BCCfE and BCCDC, to assess if the Vancouver STOP Project was meeting its overall quantitative targets; they produced monitoring reports quarterly.

Key population monitoring activities included:

- the establishment of sophisticated data linkages to enable data gathering from multiple sources
- the evaluation of population-level indicators across the Vancouver health service delivery area using population-level data sets from these multiple sources
- pre-, during- and post-evaluation analyses, including stratification by population subgroup

Gathering the data

Although some of the data required to assess the population-level success of the Vancouver STOP Project on the basis of the 50 indicators were accessible within VCH, most of the data were obtained by establishing data linkages with a variety of groups.

Access to testing data: The Vancouver STOP Project accessed population-level testing data through a linkage with the provincial laboratories (a part of the Provincial Health Services Authority). These testing data were not available at an individual level, but they could be aggregated to local health areas, allowing the Vancouver STOP Project to assess testing uptake and outcomes in their region.

Access to surveillance and treatment data: Perhaps the most significant linkage in assessing Vancouver-level success was between the PHSU surveillance data and the BCCfE treatment program data. This linkage between public health data and treatment data was critical for population-level monitoring. The provincial health officer was required to sanction this linkage.

In British Columbia, local-level surveillance data, while generated at a local level, are filtered through the provincial BCCDC, which also provides data on the staging of infection (i.e., if an infection is an acute infection).

The linkage between surveillance data and data from the BCCfE drug treatment program was based on deterministic data linkages, taking surveillance cases and linking them on the basis of PHN if this was available or, if not, on the basis of other identifiers in the data set, a complicated undertaking.

Access to admission data: As a part of Vancouver's initiative to routinely offer HIV testing in acute care, the Vancouver STOP Project was able to gain insight into admissions occurring across Vancouver hospitals. These data were obtained through linkages with VCH and PHC hospitals.

Examining the data: developing a historical baseline

One challenge of the monitoring activities of the Vancouver STOP project was to determine how to examine the extensive data that were collected through the data linkages described above. The Vancouver STOP Project team wanted to put the data into context – they wanted to measure the project's activities against what was happening *before* STOP started. To do this, they established a historical baseline against which to assess progress.

For monitoring purposes, the start date of the Vancouver STOP Project was taken to be July 2010, the month when the project's initial activities started to roll out. The team used information that was available from January 1, 2008, to December 31, 2009, to represent the baseline characteristics of processes and populations before the implementation of the STOP Project. The Vancouver STOP Project also requested baseline laboratory test data from 2003 to 2010 and continued to access laboratory data on a monthly basis over the course of the Vancouver STOP Project pilot.

Examining the data: monitoring each indicator

The Vancouver STOP Project and the PHSU chose to assess progress quarterly, which allowed the team to better monitor progress toward the goals of STOP. By assessing their progress on an ongoing basis rather than only at the end of the project, they were able to adjust their activities accordingly. Quarterly monitoring focused on three key areas and sets of indicators: testing, public health management and treatment. For a complete list of indicators, please see Appendix 4.

Some of these indicators and the ways in which the Vancouver STOP Project was able to use the data to inform programming are described below.

Testing indicators

Testing volume and percent positivity: The Vancouver STOP Project assessed testing volumes across Vancouver using data from 2008 as a baseline. As most of the testing in the early days of STOP focused on targeted testing, there was only a small increase in testing volume in the early months of the project. However, there was a more marked increase in percent positivity, probably because of the targeted testing approach.

The team was also able to track the significant increase in testing volume with the implementation of the routine offer of HIV testing in acute care and the rollout of the *It's Different Now* campaign (i.e., there has been at least a 50% increase in testing volume in Vancouver since the third quarter of 2011). Further, they were also able to determine that percent positivity started to decline.

This knowledge, along with knowledge of the cost-effectiveness threshold of the routine offer strategy, was used to examine the effectiveness of the routine offer strategy—because a routine strategy is intended to increase testing volume among the entire population, declining percent positivity is expected. These data allowed the Vancouver STOP Project to determine that they were on the right track.

To visualize the data in a different way, the Vancouver STOP Project and PHSU mapped the testing data according to Vancouver local health areas. For an example of a map, please see maps contained in Quarterly Monitoring Reports: http://www.vch.ca/your_health/disease_surveillance/hiv-aids/.

Assessing contacts of cases: Unlike the provincial-level assessment, the local-level assessment by Vancouver STOP Project included the outcomes of partner contact tracing. The Vancouver STOP Project established a contact tracing form and database to track this activity across the region. Through this, they could monitor the number of contacts named, notified and tested and the resulting percent positivity of contacts.

The Vancouver STOP Project determined that at the launch of STOP (and therefore presumably before STOP), a significant proportion of the contacts who were notified did not seek out testing. However, the percent positivity among the group that did test was much higher than that among the general population that tested. The Vancouver STOP Project provided this information to the BCCDC partner notification team as well as the VCH partner notification team, which provided an incentive for them to encourage contacts to get tested. Since early 2011, there has been a decline in the proportion of notified contacts *not* being tested.

Treatment indicators

Linkage to care: The proportion of patients linked to care within 30 days and the median number of days to linkage was monitored to determine if this important component of the client journey improved with STOP. Indeed, while the number of days to linkage to care had been declining in Vancouver *before* STOP, STOP accelerated this success; this finding was picked up through these monitoring activities.

Engagement in care: The number and proportion of people actively engaged in care by year of care was also traced. There was a marked “closing of the gap” between male and female clients linked to care after the launch of the Vancouver STOP Project.

Community viral load: The Vancouver STOP Project also assessed changes in the mean community viral load and the proportion of people living with HIV who did not have a fully suppressed viral load. After the launch of STOP, mean community viral load continued to decline, as did the proportion of people in Vancouver with an unsuppressed viral load, marking important progress toward the goals of STOP.

Monitoring and evaluation of pilot projects

Monitoring and evaluation of individual pilot projects were carried out by the Vancouver STOP Project evaluation team. It worked in collaboration with pilot

sites to collect and analyze data on key elements of each Vancouver STOP Project pilot project to routinely monitor and report on funded projects, to improve day-to-day management of the pilots and ultimately to improve the efficiency and effectiveness of these projects.

Quantitative indicators of success

A standard set of indicators was developed in April 2011. The following topics were monitored in each pilot project (as appropriate). For a complete list of Vancouver STOP Project indicators, please see Appendix 3.

Laboratory tests for HIV

These data provided a picture of how the variety of testing initiatives in Vancouver was influencing HIV testing. The Vancouver STOP Project also monitored the demographics of the individuals receiving HIV tests to inform their knowledge of which populations and communities were accessing testing and which were not accessing (and possibly facing barriers to) HIV testing. With this knowledge they could adjust their activities to try to more effectively reach their target groups.

Specific monitoring indicators for this topic were the number of laboratory tests by clinic or hospital, the geographic region of the clinic, and the age, gender and residential location of the individual who received the test. They also compared these results with the demographics of the general population. Finally, they were able to use these data to determine the proportion of tests that were attributed to people from *outside* of the Vancouver STOP Project catchment area.

Point-of-care (POC) testing

Point-of-care testing was implemented in multiple sites through the Vancouver STOP Project; the aim was to improve access to testing for multiple at-risk populations and reduce the number of people unaware of their HIV status in Vancouver.

Point-of-care monitoring indicators reported on the volume of point-of-care tests carried out via the Vancouver STOP Project; these data were also used to provide a geographical picture of the project's activities by residential neighbourhood. Percent positivity rates were also calculated by testing site and geographic location and compared with laboratory positivity rates to provide a picture of the initiative's effectiveness.

Actual HIV positive diagnoses

Percent positivity was an important monitoring indicator of the Vancouver STOP Project as it provided a reasonable intermediate measure of the effectiveness of the project's HIV screening, rather than the overall test volume, as this indicated whether the project's strategies were actually reaching those individuals who are HIV positive and unaware. This indicator was complemented by measurements of the stage of disease at the time of diagnosis to provide the best measure of the overall effectiveness of the testing program. Since the ultimate goal of the testing strategy was early diagnosis, the stage of disease at the time of diagnosis was the most direct measure of the overall effectiveness of the testing program.

Characteristics of people diagnosed with HIV

The Vancouver STOP Project monitored the risk group (if any) and demographic characteristics of people who were diagnosed with HIV to better understand the effectiveness of their HIV screening efforts. In selected settings, they also collected data on an individual's motivation for testing and/or how they were engaged in testing (e.g., through a testing blitz). The purpose of this was to assess the Vancouver STOP Project's testing activities and determine whether people were testing through provider-initiated or patient-initiated testing and also to support the correct interpretation of surveillance data. At a population level, it was not possible to distinguish between patient- and provider-initiated testing. Therefore, comparison with baseline testing and diagnostic rates before the implementation of STOP was used to determine the population-level effect of the initiative.

Partner notification

Partner notification aims to reduce HIV transmission by ensuring that partners of those newly diagnosed with HIV—the one identifiable group with the highest risk for HIV acquisition—receive support and access to HIV testing. Although it was an important public health strategy of stakeholders in the Vancouver STOP Project before STOP, it was enhanced with STOP Project funding and became a critical component of STOP's activities.

STOP monitored indicators including the number of partners identified, contacted and receiving an HIV test.

Linkage to and engagement in care

The Vancouver STOP Project monitored activities that they judged to be proxy measures for linkage to and engagement in care by people living with HIV/AIDS. These activities included clinical assessment and clinical monitoring, which were defined as an individual's first clinical visit, after diagnosis, where a person will work with a physician to develop a picture of the client's current health, including blood work and illness screening, which would be the basis of any HIV/AIDS treatment decisions.

Linkage and engagement indicators therefore included the proportion of known HIV-positive people in Vancouver who had been linked to care per clinic and within each geographic area, as well as demographic and risk characteristics of these individuals linked and engaged in care.

Initiation or re-initiation of antiretroviral therapy

Of course, a primary goal of the Vancouver STOP Project was to support individuals known to be living with HIV/AIDS to start and stay on antiretroviral therapy. Therefore, it was important to measure the number of people who were prescribed antiretrovirals at any point in time in the STOP Project, by clinic, demographic and social characteristics. The project also distinguished between individuals who were starting antiretroviral therapy for the first time and people who were restarting treatment.

Adherence to antiretroviral therapy

Optimal adherence is critical to ensuring treatment success, improving quality of life and reducing the risk of HIV-related morbidity, as well as reducing the risk of transmission. The team monitored and reported on the proportion of individuals in a given pilot who achieved viral suppression. This was considered a proxy for adherence to antiretroviral therapy. Demographic and social characteristics of individuals were also collected.

Quantitative data collection

Data to support the monitoring and evaluation framework were collected from a number of sources and using a number of methodologies. Data were housed on the VCH internal secure server. Appropriate analyses were carried out by the Vancouver STOP Project evaluation team using Stata 11 software and Microsoft Office Excel for production of tables and graphs.

Point-of-care testing volumes were collected monthly using statistics from each site or tester engaged in point-of-care testing through the Vancouver STOP Project. Only aggregate data were kept.

Individual **laboratory HIV confirmatory test results** were already being collected by the Provincial Laboratory and the PHC laboratory (for PHC acute care facilities). The Vancouver STOP Project evaluation team requested and was granted access to monthly data over the course of the STOP pilot.

Clinical information on people living with HIV/AIDS who are **engaged in care** is collected provincially by the BCCfE. Through sophisticated deterministic data linkages and secure data transfer, treatment phase information was collected from the BCCfE by the Vancouver STOP Project evaluation team to inform the monitoring indicators.

To monitor and evaluate **partner notification**, the Vancouver STOP Project developed a contact tracing follow-up form to be used by staff carrying out partner notification. A Microsoft Access database will be developed for electronic entry of this information.

Qualitative indicators and data collection

In addition to the quantitative data collected for each pilot project, the Vancouver STOP Project evaluation team also collected and used qualitative data to assess pilot projects.

Each pilot project was asked to submit narrative assessments of how things were going and descriptions of their plans for the next few quarters.

In 2012, more extensive qualitative client evaluations were conducted by an external evaluator (from the VCH Community Engagement Department) for a small number of programs funded by the Vancouver STOP Project. Clients were asked about their experience of HIV testing in Vancouver hospitals, women's centres and bathhouses; intensive case management; and peer support.

The evaluation questions and methods were tailored to each of the populations and pilots being evaluated, as follows:

- HIV testing in hospitals: in-person interviews were offered in English, Punjabi and Chinese
- HIV testing in women's clinics: a paper-based survey was offered to all clients who had accepted an HIV test and was available in English, Punjabi and Chinese
- HIV testing in bathhouses: clients were offered the option of completing an online survey or paper survey after each visit with the nurse; the surveys were available in English
- Intensive case management and peer support: in-person or telephone interviews were offered to clients in English and Spanish

In all settings, patients/clients were offered the opportunity to participate or not and were assured that their responses would not affect their care in any way.

This evaluation information was used by the Vancouver STOP Project leadership to inform future program planning and by the pilot sites to assess and change, as required, their current practice.

Implementation of the monitoring and evaluation activities in each pilot site

To evaluate each pilot, the Vancouver STOP Project evaluation team used relevant, standard monitoring and evaluation indicators as outlined above (such as percent positivity for an HIV testing initiative), along with pilot-specific indicators.

To develop an evaluation design for each pilot project, the team organized individual meetings to develop the program logic model, select pilot-specific output and outcome indicators to report on, review survey tools already in use and/or design new surveys as relevant. New tools had to be developed for many pilot sites, given that they had limited experience collecting this type of rigorous data.

Pilots used the Vancouver STOP Project's data collection tools to collect and send raw data to the evaluation team. This team then analyzed the data and submitted reports both to the Vancouver STOP Project leaders for assessment and to the pilot sites. Each pilot project was evaluated at 7-month intervals. It was necessary to use an interval this short because the overall STOP Project had a short timeframe.

A reporting schedule was selected for each pilot project on the basis of the start date of the pilot project's memorandum of understanding. At the agreed-upon reporting time, detailed instructions were sent with individualized indicator reporting templates.

Barriers and facilitators

Many pilot sites did not have experience collecting and reporting this level of data to demonstrate performance and accountability, and the necessary level

of rigour was hard to implement in some places. To facilitate success in monitoring and evaluation, the evaluation team spent considerable time with each pilot site, developing indicators and reporting tools that all parties found useful.

Some pilot sites had experience reporting to VCH on VCH-funded programs. However, the accountability required for the Vancouver STOP Project was more rigorous than that required for other funding envelopes. Therefore, the evaluation team also needed to spend more time with these pilot sites, explaining why the process had to be different with the Vancouver STOP Project.

The evaluation team found that several actions helped them to get the pilot sites to buy into the evaluation process: they included sites in the development of indicators, they asked sites to validate the analyzed data for their site, and they reported back to the site on all of the data collected for the site, which demonstrated progress to the service providers.

Other challenges to the successful monitoring and evaluation of pilot projects were that the first pilots had no benchmarks by which to assess their progress and the metrics were constantly being refined. The evaluation team worked closely with pilot sites to ensure that the proper indicators were being collected in the most efficient ways.

Finally, the seven-month timeline for assessment of pilots was a considerable challenge, given that some of the outcomes being assessed needed time to be accomplished, often more time than the pilot was allowed.

Reporting

The Vancouver STOP Project evaluation team and PHSU initially reported on monitoring and evaluation data through quarterly monitoring and quarterly evaluation reports. Later, the Vancouver STOP evaluation team compiled all of the data for each pilot into a dashboard format.

The team summarized overall changes in the Vancouver STOP Project's targeted activities and results at a population level and the outputs and outcomes of individual pilot projects funded by VCH and/or PHC. Taken together, these reporting activities provided data to support informed decision-making regarding population-level impacts, the project implementation process, resource allocation and post-project sustainability planning.

In addition, the Vancouver STOP Project produced and distributed to the provincial STOP steering committee a bimonthly report that included a brief description of specific Vancouver STOP Project activities of particular interest that may have had a significant impact in the previous reporting period or that were being implemented in that reporting period.

Sustainability and *future state planning*

The Vancouver STOP Project seriously considered the sustainability of all pilot projects throughout the three-year project. Given that they were significantly expanding services and engaging more people in care, the sustainability of programs was critical to ensuring that people living with HIV/AIDS in Vancouver were not harmed as a result of the project (becoming engaged through expanded services and then not being able to access effective services once the funding for those services ended in 2013).

In addition, the Vancouver STOP Project recognized, through the success of the various STOP initiatives, that they had an opportunity to redesign the system of care into the ideal state of services in the city over the long term. Their efforts to determine what this ideal system would look like were called future state planning.

The Vancouver STOP Project planned for the future state by conducting broad analyses of their data, conducting consultations with service providers, and comparing the system of care before and after STOP interventions were implemented. Through these activities they sought to identify high-impact services and efficiencies within these services.

With this knowledge, they developed the key elements of a future state for HIV/AIDS services in Vancouver, demonstrated by a client journey from

primary prevention to end-of-life services. The following service delivery models were identified for inclusion in the future state: primordial and primary prevention; testing and partner notification; intake and case management; HIV/AIDS treatment adherence; HIV/AIDS supports, such as food and housing; HIV/AIDS care and treatment; and services to support end of life.

Importantly, the Vancouver STOP Project had to determine the costs of the future state. Their funding options included reallocating current HIV/AIDS external partner contracts, reallocating internal resources within VCH and PHC and submitting business cases to Ministry of Health. Of course, the Vancouver STOP Project had to consider that funding realignment would affect some long-standing HIV/AIDS community agencies.

At the end of 2012–13, the Vancouver STOP Project worked to establish their complete image of the future state: using their future state client journey, it would be possible to apply the determined costs to each phase of journey, allocate existing funding, identify gaps, explore options to find additional funding and, if total funding was not available, develop a plan to phase in services with a transition plan to achieve an improved future state.

Knowledge exchange activities

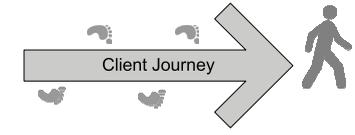
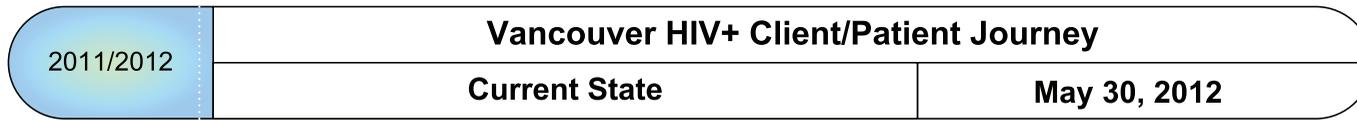
As of December 2012, the Vancouver STOP Project had no confirmed funding beyond March 31, 2013. They therefore prioritized the capturing of key pilot activities and outcomes and the documentation of the overall implementation of the project through PHC and VCH, before the end of the 2012–2013 fiscal year. The project was documented to ensure that the lessons learned from this ground breaking project were not lost and successes could be sustained. The Vancouver STOP Project engaged CATIE, as the national knowledge broker on HIV and hepatitis C information, to work closely with them to

archive critical aspects of the implementation of the Vancouver STOP Project through a variety of knowledge exchange activities.

In December, 2012, BC Health Minister Margaret MacDiarmid announced \$19.9 million in annual funding until 2016 for the provincial expansion of the STOP Project. Beginning April 1, 2013, each BC health authority, with support and leadership from the BC Centre for Excellence in HIV/AIDS, will carry out its own activities to meet STOP goals. The BC Centre for Excellence in HIV/AIDS will also continue to monitor and evaluate the progress of the program.

Appendix 1

Client Journey



Start			HIV Testing, Diagnoses & Case Finding			Linkage to Care – New & Existing Clients					HIV Treatment			HIV Supports			End	
Primary Prevention	Harm Reduction Services	Risk Event	Secondary Prevention (PEP)	HIV Testing	HIV Diagnoses	Contact Tracing	Linkage to Care & ST Case Mgmt	Psycho-Social Assess	Medical Assess	Locate/Engage Lost Client	Medical Monitoring	ARV Treatment	ARV Adherence Support	Housing	Support Services	LT Case Mgmt Support	End of Life	
YouthCo	VANDU		HIM PEP	Acute Care	Mental Health Clinics	Acute Care	VCH CDC	AIDS Vancouver	Portland Clinic	PHC – IDC Clinic	PHC – IDC Clinic	Portland Clinic	Portland Clinic	Dr. Peter Day Program	Pacific Coast Apartments	African Women Ni Wakati	AIDS Vancouver	Dr. Peter Residence
Consumers Board	Consumers Board		St. Paul's Hospital	HIM Davie	Youth Clinics	HIM Davie	STOP Outreach	DEWC	POS Teams	Portland Clinic	STOP Outreach Team	POS Teams	POS Teams	DCHC MAT	McLaren Housing	DEWC	PHC Case Mgmt	Acute Care
SOS	DAMS		Vancouver General Hospital	IDC/PHC POC Testing	DEWC RN	Portland Clinic	BCCDC RN	HIM	VCH PC Clinics	POS Teams		Spectrum	Spectrum	VNHS POP	Raincity Housing	PLBC Peer Navigator	VCH MAT	AOA/HCC
	DEWC			Portland Clinic	HIM Comm. Drive	POS Teams		PLBC Peer Navigators	VNHS Clinic	Spectrum		VCH PC Clinic	VCH PC Clinic			Sheway	VNHS POP	Hospice
	PHS Needle Exchange			POS Teams	Private GP Strategy	Private GP Strategy		YouthCo	STOP Outreach Team	VCH PC Clinic		VNHS Clinic	VNHS Clinic			Watari	VNHS TAHAH	Palliative
	SOS			Sheway	Public Social Marketing	Spectrum		STOP Outreach Team		VNHS Clinic						YouthCo	Dr. Peter Day Program	PHS/CTCT
	VCH Needle Exchange			Spectrum VCH	STOP Outreach Team	VCH PC Clinics		DAMS		STOP Outreach Team						A Loving Spoonful		
	Red Road HIV/AIDS Network			VCH CDC	VANDU	VNHS Clinic		Lookout		Private GP						Food Runners		
	Positive Women's Network			VCH Primary Care	DTES Peer Testing	STOP Outreach Team		SOS								VNHS Season 4 Change		
				VNHS Clinic	Public Dentists	BCCDC RN		Positive Women's Network										
				Watari	Ravensong Uninsured													
				Abortion Clinics	BCCDC													
				Addiction Clinics														

Legend

- Current HIV Contract + STOP Expanded Capacity MOU
- New STOP HIV Service/Initiative
- Existing Contract, No STOP MOU
- Completed STOP HIV Service/Initiative
- No Existing HIV Contract or STOP Expanded Capacity MOU

Appendix 2

Provincial Level Indicators

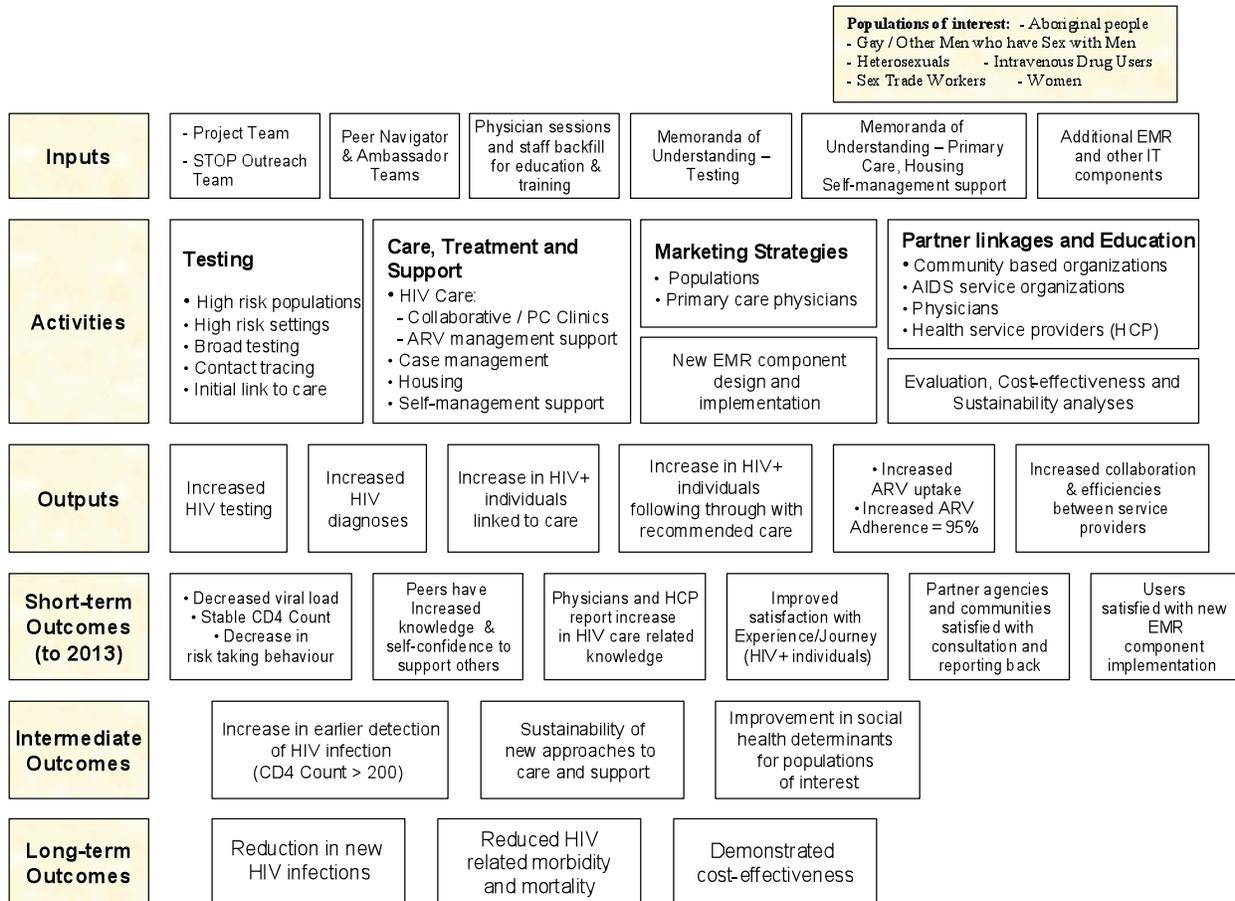
Indicator	Target
Indicator 1: # of HIV test episodes	↑ by 50% Vancouver N = 20,932
Indicator 2: Population HIV testing rate	↑ by 50% Vancouver 9,722 tested per 100,000 population
Indicator 3: # new HIV diagnoses	↑ during first 2 years, then decrease
Indicator 4: Rate of new AIDS case reports	↓ Decrease
Indicator 5: % positivity among persons tested for HIV	↑ from 0.4 to 0.8%
Indicator 6a: Proportion of individuals tested for syphilis who are tested for HIV at the same clinical encounter	↑ Increase
Indicator 6b: Proportion of individuals with a new STI diagnoses who are tested for HIV within 3 months of STI diagnosis	↑ Increase
Indicator 7: Proportion of individuals with a new HCV diagnoses who are tested for HIV within 3 months of HCV diagnosis	↑ Increase
Indicator 9: Proportion of individuals with a new HIV diagnoses with advanced HIV disease	↓ Decrease
Indicator 11: Proportion of individuals with a new HIV diagnosis with acute HIV infection	↑ Increase

Indicator	Target
Indicator 14: Proportion of individuals starting ART late in the course of HIV disease	↓ Decrease
Indicator 18: Proportion of individuals with a new HIV diagnosis who are tested for syphilis within 3 months of HIV diagnosis	>95%
Indicator 21: % of HIV-infected individuals who are tested for genotypic antiretroviral drug resistance prior to starting ART	↑ to >95%
Indicator 22: % of individuals starting ART who achieve HIV pVL of <200 copies/mL with 6 months of therapy initiation	↑ to >95%
Indicator 23: % of individuals who initiated ART with a recommended therapy regimen (among those with no drug resistance)	↑ to >95%
Indicator 24: % of individuals on ART that achieve annual prescription refill adherence >95%	↑ Increase
Indicator 25: # of physicians initiating therapy or providing HIV-related care to patients on ART	↑ Increase
Indicator 26: % of individuals on ART who experience a serious ADR	Maintain <0.5%
Indicator 28: Incidence of resistance to any retroviral drug	↓ Decrease
Indicator 29: Proportion of individuals on ART who change ART drug treatment	↓ Decrease

Vancouver STOP Project (2011). STOP HIV/AIDS Project Population Monitoring and Program Evaluation Framework, April 1, 2011 to March 31, 2013, p 4.

Appendix 3

Logic Model – STOP HIV/AIDS Project



Vancouver STOP Project (2011). STOP HIV/AIDS Project Population Monitoring and Program Evaluation Framework, April 1, 2011 to March 31, 2013, p 8.

Appendix 4

Vancouver STOP Project Population-level Indicator Definitions and Rationale

VCH 1. Number of POC Tests

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

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

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

VCH4a. Number of New Positive POC Tests

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

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

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

VCH4b. Number of Previous Positive POC Tests

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

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

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

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, a VCH clinic including non-VCH residents who test in VCH.

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

Data Source: HIV Laboratory Testing Data

VCH8b. Number of HIV lab tests from all clinics in VCH

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

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

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

Data Source: HIV Laboratory Testing Data

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

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

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

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

Data Source: HIV Laboratory Testing Data

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

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

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

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

Data Source: HIV Laboratory Testing Data

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

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

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

Additional Selection Criteria: Data Source: HIV Laboratory Testing Data

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

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

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

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

Data Source: HIV Laboratory Testing Data

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

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

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

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

Data Source: HIV Laboratory Testing Data

VCH13a. Number of positive HIV diagnoses for VCH residents

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

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

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

Data Source: PHSU Reportable HIV Surveillance Data

VCH13b. Number of positive HIV diagnoses for Vancouver HSDA Residents (or those who tested in Vancouver but for whom address is unavailable)

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

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

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

Data Source: PHSU Reportable HIV Surveillance Data

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

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

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

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

Data Source: PHSU Reportable HIV Surveillance Data

VCH14a. Percent positivity of VCH residents

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

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

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

VCH14b. Percent positivity of Vancouver HSDA residents (including those who tested in Vancouver but do not have residence information)

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

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

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

VCH14c. Percent positivity of Richmond and Coastal HSDA residents

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

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

within VCH. This indicator will measure if STOP HIV/AIDS is leading to more new diagnoses per test offered in other HSDAs.

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

VCH16. Number of HIV positive diagnoses who were previously positive

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

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

Data Source: Enhanced HIV Contact Tracing Form

VCH17. Number of contacts elicited

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

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

Analytical Definition

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

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

Data Source: Enhanced HIV Contact Tracing Form

VCH17a. Number of contacts elicited per HIV positive case

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

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

Analytical Definition

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

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

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

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

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

Data Source: Enhanced HIV Contact Tracing Form

VCH19. Proportion of contacts notified

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

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

Analytical Definition

Numerator: Total number of unique contacts notified

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

Additional Selection Criteria: Counts of contacts elicited per quarter, are based on the “date contact opened” field on each contact tracing form. When this field is missing, the “date index case notified of HIV diagnosis” is used instead. This does not include contacts who have been sent to VCH for notification, from other Health Authorities or Provinces.

Data Source: Enhanced HIV Contact Tracing Form

VCH23a. Proportion of contacts tested for HIV

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

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

Analytical Definition

Numerator: Number of contacts tested for HIV

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

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

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

Data Source: Enhanced HIV Contact Tracing Form

VCH23b. Number of contacts who tested HIV positive

Number of contacts who tested HIV positive in a given time period.

Rationale: A second measure of case-finding and contact tracing success is identifying individuals who are HIV positive.

Analytical Definition

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

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

Exclude contacts known to be previously positive.

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

Data Source: Enhanced HIV Contact Tracing Form

VCH23c. Percent positivity (%) due to Contact Tracing

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

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

Analytical Definition

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

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

Exclude contacts known to be previously positive.

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

Data Source: Enhanced HIV Contact Tracing Form

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

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

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

Analytical Definition

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

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

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

Data Source: Enhanced HIV Contact Tracing Form

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

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

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

Analytical Definition

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

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

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

CD4 and/or vL testing records that occurred prior to diagnosis date were dropped from this analysis.

Individuals deceased by the end of the quarter were dropped.

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

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

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

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

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

Analytical Definition

Year to Date Definition: Median days for interval between first HIV positive test and first CD4 or vL test within 30 days of diagnosis among those new diagnosis of the current quarter of the current year, and of the same quarter of the previous year.

Additional Selection Criteria: The testing date used for this indicator was that closest to the diagnosis date, and for viral loads only used data from the BC CfE for this analysis (as known to be more accurate). CD4 or viral load testing records that occurred prior to diagnosis date were dropped from this analysis.

Individuals deceased by the end of the quarter were dropped.

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

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

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

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

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

Analytical Definition

Year to Date Definition: Median days for interval between first HIV positive test and first CD4 or vL test among those new diagnosis of the current quarter of the current year, and of the same quarter of the previous year.

Additional Selection Criteria: The testing date used for this indicator was that closest to the diagnosis date, and for viral loads only used data from the BC CfE for this analysis (as known to be more accurate). CD4 or viral load testing records that occurred prior to diagnosis date were dropped from this analysis.

Individuals deceased by the end of the quarter were dropped.

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

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

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

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

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

Analytical Definition

Numerator: A subset of the denominator with a first CD4 cell count at diagnosis is >500 cells/mL

Denominator: All new HIV positive cases diagnosed in a given time period with a CD4 test on record.

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

Year to Date Definition: Proportion of all new diagnoses who have a CD4 cell count of >500 cells/mL at the time of diagnosis for the current quarter of the current year, and for the same quarter of the previous year. Numerator – a subset of the denominator who have a CD4 cell count at diagnosis of >500 cells/mL. Denominator – all new HIV positive diagnoses in the time period.

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

Includes individuals who may have had started treatment before they are eligible.

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

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

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

VCH45b. Proportion of HIV patients that have a CD4 count >= 200 cells/mL at diagnosis

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

Rationale: Finding HIV positive individuals before late stage disease is an important objective of the STOP HIV/AIDS program. Diagnosing individuals earlier on in the course of disease enables them to get on

treatment earlier, and improves patient morbidity and mortality. It is also an indication that we are reducing the number of individuals in the population who are unaware of their HIV infection, as we are no longer finding those individuals with low CD4s/ high viral loads.

Analytical Definition

Numerator: A subset of the denominator with a first CD4 cell count at diagnosis is ≥ 200 cells/mL

Denominator: All new HIV positive cases diagnosed in a given time period with a CD4 test on record.

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

Year to Date Definition: Proportion of all new diagnoses who have a CD4 cell count of ≥ 200 cells/mL at the time of diagnosis for the current quarter of the current year, and for the same quarter of the previous year. Numerator – a subset of the denominator who have a CD4 cell count at diagnosis of ≥ 200 cells/mL. Denominator – all new HIV positive diagnoses in the time period.

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

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

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

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

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

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

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

Analytical Definition

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

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

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

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

Historical Period Definition: The 2 year historical baseline period will report on the proportion of our HIV positive population who have had the recommended number of vL tests within the 2 year time period. The average count is the average of the numerators for each quarter since Q1 2008 divided by the average of the denominator of each quarter

since Q1 2008. The minimum and maximum values are defined in the same manner as described above for the STOP Period Definition.

Year to Date Definition: Numerator – number of HIV positive individuals who have been engaged in care for the current quarter of the current year, and for the same quarter of the previous year. Denominator – total number of eligible HIV positive individuals alive in that time period.

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

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

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

Individuals deceased by the end of the quarter were dropped.

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

VCH47a. Proportion of HIV patients not found in care

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

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

Analytical Definition

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

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

Year to Date Definition: Numerator – A subset of the denominator and have not had a vL for at least 9 months of the current quarter of the current year, and for the same quarter of the previous year. Denominator – All HIV positive individuals alive and diagnosed for at least 9 months since the beginning of the time period.

Additional Selection Criteria:

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

Individuals deceased by the end of the quarter were excluded.

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

VCH47b. Proportion of HIV patients not found in care

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

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

Analytical Definition

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

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

Year to Date Definition: Numerator – A subset of the denominator and have not had a vL for at least 9 months of the current quarter of the current year, and for the same quarter of the previous year. Denominator – All HIV positive individuals alive and diagnosed for at least 9 months since the beginning of the time period *and who were able to be linked to the BC Cfe clinical data set.*

Additional Selection Criteria:

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

Individuals deceased by the end of the quarter were excluded.

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

VCH48. Proportion of patients who are currently prescribed ARVs

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

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

Analytical Definition

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

Denominator: Total alive HIV positive individuals in a given time period. Year to Date definition: All HIV positive individuals alive at end of quarter of the current year, and of the same quarter of the previous year, who have taken ARVs within the last 2 months.

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

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

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

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

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

Analytical Definition

Numerator: A subset of the denominator that have not had a prescription for ARVs for at least 2 consecutive months AND have not resumed taking ARVs during the quarter. Denominator: All HIV positive individuals alive at end of current quarter who have ever been on ARV treatment.

Censor this at the quarter: (1 = on ARVs that month; 0 = not on ARVs that month)

On ARVs = (101, 111, 010, 001)

Not on ARVs = (100, 000)

Year to Date Definition: Numerator – A subset of the denominator that have stopped taking ARVs and not restarted during the current quarter of the current year, and the same quarter of the previous year. Denominator – All alive HIV positive individuals who were on ARVs at the start of the time period in question. (*Note: if the case had last 2 months of prescription at end of quarter with this pattern: 10 they are considered to be ON ARVs.*)

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

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

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

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

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

Analytical Definition

Numerator: A subset of the denominator who have a prescription for ARVs

Denominator: Total number of HIV patients who have been diagnosed within 6 months of the quarter and have eligible CD4 values for ARV ≤ 500 cells per mL in the current quarter. Year to Date Definition: Numerator – A subset of the denominator who have a prescription for ARVs. Denominator – All individuals diagnosed HIV positive and have an eligible CD4 cells count = 500 cells/mL, diagnosed since the beginning of the current quarter of the current year, and for the same quarter of the previous year.

Additional Selection Criteria: The first CD4 test of ≤ 500 cells/mL within the current quarter was used for this analysis. Individuals who may have started ARVs before their CD4s were eligible were included in this analysis.

Drop cases with a first naïve ARV start date prior to diagnosis.

CD4 test records prior to diagnosis date were excluded.

CD4 test records with missing dates or missing values were excluded from this analysis.

Individuals deceased by the end of the quarter were excluded.

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

VCH50b. Proportion of HIV positive individuals diagnosed for 9 months, eligible for treatment, who are taking ARVs

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

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

Analytical Definition

Numerator: A subset of the denominator who have a prescription for ARVs

Denominator: Total number of HIV patients who have been diagnosed within 9 months of the quarter and have eligible CD4 values for ARV ≤ 500 cells per mL in the current quarter. Year to Date Definition: Numerator – A subset of the denominator who have a prescription for ARVs. Denominator – All individuals diagnosed HIV positive since the beginning of the current quarter of the current year, and for the same quarter of the previous year.

Additional Selection Criteria: The first CD4 test of ≤ 500 cells/mL within the current quarter was used for this analysis. Individuals who may have started ARVs before their CD4s were eligible were included in this analysis.

Drop cases with a first naïve ARV start date prior to diagnosis.

CD4 test records prior to diagnosis date were excluded.

CD4 test records with missing dates or missing values were excluded from this analysis.

Individuals deceased by the end of the quarter were excluded.

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

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

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

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

Analytical Definition

Numerator: A subset of the denominator with two consecutive pVL record of <200 copies per/mL both taken after therapy start and at least one of which is taken within the first nine months of therapy

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

Year to Date Definition: Numerator – A subset of the denominator who achieve virologic suppression (at least 2 consecutive vL <200 copies/mL). Denominator – Any new diagnoses newly taking ARVs since the beginning of the current quarter of the current year, and for the same quarter of the previous year.

Additional Selection Criteria: This is a cohort analysis, with the cohort being redefined every quarter. The cohort will retrospectively select back all new diagnoses within that past 12 months who are newly taking ARVs within that time period. (This applies to quarterly counts AND year to date counts).

Individuals deceased by the end of the quarter were excluded. Viral load testing records that occurred prior to diagnosis date were dropped from this analysis.

Individuals with ARV prescription start date before HIV diagnosis date were excluded.

Only vL testing data from the CfE database were used.

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

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

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

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

Analytical Definition

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

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

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

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

on record since the beginning of the current quarter of the current year, and for the same quarter of the previous year.

Additional Screening Criteria:

This cohort will retrospectively select back over the past 12 months, and include the last 3 most recent viral loads (or 2 most recent tests, if only 2 available).

Individuals deceased by the end of the quarter were excluded.

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

Viral load testing records that occurred prior to the date of first naïve ARV start date were excluded from this analysis.

Individuals with ARV prescription start date before HIV diagnosis date were excluded.

Only vL testing data from the CfE database were used.

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

VCH53. Mean viral load of all known HIV positive individuals

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

Rationale: Mean community viral load is an indicator of the average viral burden for a particular population of HIV-positive persons, and is related to treatment effectiveness and transmission risk.

Analytical Definition

Year to Date Definition: An average of the most recent vL test levels (since the beginning of the current quarter of the current year, and for the same quarter of the previous year) of all HIV positive individuals in the dataset.

Additional Selection Criteria: Individuals deceased by the end of the quarter were excluded. Only vL testing data from the CfE database were used.

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

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

VCH54. Proportion of HIV positive individuals not fully suppressed

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

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

Analytical Definition

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

Denominator: All alive HIV positive individuals in the dataset

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

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