HIV Testing and Diagnosis

Key Points

- An estimated 21% of people living with HIV in Canada are not aware of their infection.
- The earlier the HIV diagnosis, the better the chance to improve or maintain health.
- Once diagnosed with HIV, people are significantly more likely to take steps to protect their partners from acquiring HIV.
- Newer HIV testing technologies can identify HIV infection within seven to 14 days of an exposure.

HIV testing and diagnosis is the entry point to HIV treatment, care and support for people living with HIV. It is also a gateway to enhanced engagement in HIV prevention, care and support for people who test HIV-negative but are at ongoing high risk of transmission.

In Canada an estimated 16,020 (21%) people living with HIV in Canada were not aware of their infection in 2014. This group represents a hidden population that may account for more than 50% of new infections, particularly among people who are newly infected and have high viral loads. We also know that many people in Canada are being diagnosed late in their infection. All of this has implications for both individual and public health.

Individual health benefits of an HIV diagnosis can include access to HIV treatment as early as possible in the course of the infection, prophylaxis (preventative treatment) for opportunistic infections, and treatment of sexually transmitted infections (STIs). Clients can also be connected to other services to help address identified issues, for example mental health and harm reduction services or housing programs. For people who test positive, the earlier the diagnosis of HIV is made, the better it is for their health.

HIV diagnosis as early as possible can also have public health benefits. We now know that people living with HIV who are on treatment and achieve a sustained undetectable viral load will not transmit the virus to their partners sexually. They are also significantly less likely to pass on the virus through other modes of transmission (e.g., shared drug use equipment). Research has shown that when people know they are infected with HIV they are more likely to take steps to protect their partners from HIV than when they are unaware.

For people who test negative and are at ongoing high risk of HIV, testing is a gateway to enhanced engagement in HIV prevention, care and support, as well as other services such as mental health and harm reduction.

The first test for HIV became available in Canada in 1985. This test detects HIV antibodies in the blood. However, for the test to work, HIV antibodies have to be present. With current antibody tests, it can take up to three months for antibodies to develop after HIV infection (referred to as the window period). If someone is “in the window period,” a test may be unable to detect the antibodies and will give a negative result, even though the person is HIV positive.

The newest generation of HIV tests, the fourth-generation tests, screen for HIV antibodies and the virus itself (specifically, it looks for an HIV protein called the p24 antigen). All laboratories in Canada use fourth-generation HIV testing technologies for screening blood samples. These antigen-antibody combination tests are more sensitive and have reduced the window period to 18 days for 50% of people; 34 days for 95% of the population, and one and a half months for 99% of the population.

Rapid point of care (POC) testing, another technology, can improve access to testing because the entire testing process (including the pre-test counselling, receipt of the test result and post-test counselling) takes about 20 minutes. POC testing is currently only available in some provinces. Another test, called the nucleic acid amplification test (NAAT or NAT), detects HIV RNA as early as seven to 14 days after infection. Some provinces and territories are considering using NAATs as screening tests because of the short window period. In some parts of British Columbia, blood samples from men who have sex with men (MSM) that are HIV negative when screened using fourth-
generation HIV tests are also tested using pooled NAAT. This has been shown to improve the detection of people who were recently infected with HIV.

In Canada, HIV testing may be available in three forms:

1. **Nominal testing** is the most widely used method of HIV testing. The name of the person being tested and identifying information are sent to the laboratory with the sample, and test providers are legally obligated to report HIV-positive results to public health officials.

2. **Non-nominal testing** is similar to nominal testing except the service provider uses a code when sending a sample to be tested. Public health officials are only notified of the identity of the person tested if the result is positive.

3. **Anonymous testing** entails no collection of any personal identifying information about the person being tested. Only epidemiological data are sent to public health officials, regardless of whether results are positive or negative.

If someone tests positive for HIV in Canada, it is a legal requirement that public health officials be notified. However, each province and territory has public health laws that stipulate specific requirements for that jurisdiction. Most jurisdictions also have a requirement that an attempt should be made to trace and notify any sexual or drug-sharing partners that may have been at risk for HIV infection. There are three approaches to partner notification. The HIV-positive person can notify partners of their potential exposure to HIV, a public health practitioner can notify the partners or a combination of these approaches can be used. In cases where the public health practitioner notifies, the name of the person who tested positive is not provided to contacts.

In 2013, the Public Health Agency of Canada released guidelines that include recommendations to address barriers to testing and to improve HIV testing in Canada. The guidelines acknowledge that targeted testing among populations at highest risk of HIV infection needs to continue but that this approach should be complemented with a less targeted testing approach among populations that may be perceived as being at lower risk. A major recommendation in the guidelines is that care providers take a more active approach and offer HIV testing to patients as part of routine medical care, whether or not they have asked for a test. The guidelines also encourage care providers to use a flexible approach and tailor the extent of pre- and post-test counselling to each client’s unique needs and situation, although providing extended counselling is preferred. More specifically, the guidelines state that briefer counselling may be more appropriate for certain clients or patients, such as pregnant women in labour, well-informed patients and people who have already received counselling with a prior HIV test. Whatever the strategy used, HIV testing must be performed only after consent is given that is explicit, informed and voluntary.

The testing guidelines also encourage the integration of HIV testing into other services, particularly those that test for infections that can be transmitted the same way as HIV and/or negatively affect the health of people living with HIV, such as hepatitis C and STIs. Integrating HIV testing into these other services provides additional opportunities to test for HIV and identify undiagnosed individuals.

The guidelines also see HIV testing as an important opportunity to educate individuals at risk of acquiring HIV and those who are newly diagnosed and link them to additional services. For example, all people tested for HIV, regardless of their results, should be provided with information and linked to services to help them reduce their risk of acquiring or transmitting HIV. Therefore, in preparation for HIV testing, the guidelines suggest that providers contact care and support organizations to obtain referral resources for clients. Research shows that people living with HIV who are linked to and engaged in care have better health outcomes than those who are not. Therefore, newly diagnosed individuals should be actively linked to care and treatment services, such as an infectious disease specialist who treats HIV.

In 2012, the U.S. Food and Drug Administration approved the first home-based HIV testing kit for sale in pharmacies. Research indicates that certain populations (such as men who have sex with men) are accepting of home-based testing and its introduction may increase the number of people who are aware of their HIV status. In Canada, no home-based testing kit has been approved by Health Canada. Current home-based HIV tests are not as accurate as the HIV tests approved in Canada.

**Resources**

[HIV Screening and Testing Guide](#) – Public Health Agency of Canada
The HIV testing process - CATIE fact sheet

HIV testing technologies - CATIE fact sheet

New HIV testing approaches - CATIE Programming Connection webinar

Sources


Disclaimer

Decisions about particular medical treatments should always be made in consultation with a qualified medical practitioner knowledgeable about HIV- and hepatitis C-related illness and the treatments in question.

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