

## **Position Statement Options in HIV testing**

July 30<sup>th</sup>, 2019

### **Position**

The Alberta Community Council on HIV (ACCH) considers HIV testing an important part of the strategies towards reducing the rates of HIV infections as well as of the harm reduction strategies adopted by its members. The obstacles to individuals getting tested for HIV are varied and are the reflection of the wide range of situations that the populations most impacted by HIV find themselves in. It is therefore important that multiple pathways to tested be made available in order to increase the likeliness of concerned individuals to learn about their HIV status. This must be done in relation with a coordinated effort to reduce the stigma associated with HIV status and normalization of the testing process.

Discussed in this paper are samples of the ample research supporting this position. Among these, a few are specifically relevant to the Canadian context. Minichiello's (2017) scoping review of point-of-care testing in Canada as well as Pai et al's ((2018) survey results are particularly informative. In relation to HIV testing in general, credit must be given to the work accomplished by CATIE for the considerable information they compiled on the topic. Other work done in various national contexts are also relevant to this discussion as some of the findings can be generalised, while keeping in mind Alberta's specificity. In this regard, the programs of routine HIV testing in British Columbia are of relevance. This review leads to a few conclusions. While some forms of testing, such as the use of self-test kits, would benefit from further validation studies, the available literature suggests that the multiple options available for HIV testing all have a very high rate of effectiveness when paired with secondary confirmatory tests. Each option offers distinct advantages and disadvantages which make them more suitable in certain situations and with certain population, supporting a strategy presenting a variety of options for testing targeting at-risk populations as well as normalizing HIV testing in the general population.

### **Recommendations:**

- Promoting the use of alternate screening options such as point-of-care testing (POCT), Dried blood-spot testing (DBS), and self-testing with targeted at-risk population.
  - DBS for remote/rural populations
  - POCT for hard to reach population that use other services (such as people who use drugs (PWUD); homeless population)
  - SELF-TESTS for stigmatized groups that may tests more if they can collect samples themselves (Men who have sex with men (MSM); PWUD)
- Promoting the implementation of universal routine HIV testing
- Promoting increase access to POCT across Alberta
  - Increase access to POCT in the general population
- Advocating for the development of a DBS testing capacity in Alberta.
- Supporting research which would provide further evidence in the efficacy of alternate HIV screening options with specific at-risk population.
- Advocating for, and participating in, communication projects seeking to normalize HIV testing.

### **Background:**

In 2015, a summary report from the Government of Canada indicated that an estimated 16,000 Canadians were living with undiagnosed HIV, which represented 21% of all people living with HIV in Canada. As Canada is supporting the 90-90-90 by 2020 targets established by the World Health Organization and the Joint United Nations Programme on HIV/AIDS, measures must be put in place to increase the number of at-risk individuals getting tested.

In 2013, the ACCH released a position statement on Treatment as Prevention which included recommendations to increase access to HIV testing. Since then, advances have been made regarding HIV testing and HIV rapid testing has been made more widely available. Advancements have also been made relating other testing options, such as Dried Blood Spot testing. This position statement updates the ACCH perspective on the matter.

### ***What is HIV Testing?***

HIV tests operate in three different ways: they include 1) antibody tests (testing for antibodies in blood or mouth fluids), 2) combination tests (testing for antibodies and HIV antigens, which are part of the virus), and 3) nucleic acid amplification tests (NAAT) (which looks for HIV in the blood). To test for HIV, a sample of a person's blood is taken and either sent to a laboratory or tested on location through a process known as point-of-care testing (POCT).

An important difference between types of HIV test is what is called the window period, which is the time between the moment when a person is infected and the moment when a test can detect the HIV infections. It is important to note that the rate of progression of HIV varies between individuals and it can take longer for the virus to be detectable for some people.

Another point of interest for HIV tests is their level of sensitivity. While HIV tests are very accurate when going through to the confirmatory tests, there are chances of false positives at the level of the rapid test.

### **Testing Options:**

#### ***Standard Laboratory testing***

The most common type of HIV testing requires a nurse or phlebotomist to take a sample of a person's blood sending it to a laboratory for testing, which we refer to as standard testing. Canadian laboratories use what is known as a fourth-generation HIV test, which is a combination test looking for both antibodies and HIV antigens. If a test is negative, no further testing is performed on the sample and the results are communicated back to the health care provider who ordered the test. If the result of this first test is positive, another test is done to confirm the result. If the result of the first test is confirmed, the results are sent to the health care provider, but if they are not, an additional test will be performed. This last confirmatory test could be a repeat of the same test or a NAAT (nucleic acid amplification test – see above), which is a costlier process.

Because it involves transporting blood samples as well as a series of tests, the standard HIV testing process means that it can take up to two weeks for a person to receive their test results, if they can be reached by their health care provider for follow-up.

#### ***Dried Blood-spot testing***

DBS testing is a process by which a small sample of blood is taken, such as from a finger prick, and applied to a cloth material. The dried sample can then be sent out to labs for testing. The shipping and transport of DBS is subject to much fewer restrictions than vials of a blood sample and is therefore an interesting option for hard to reach populations that are situated farther from laboratories. For example, DBS samples can easily be mailed through regular postal services, reducing the sample transportation time to standard post timeframes.

#### ***Rapid HIV testing***

Since 2005, HIV POCT has been approved for use by the federal government. Rapid POCT testing is a process where testing for HIV can be done from a blood sample as small as from a finger prick. It is done on location rather than having to send the sample to a laboratory. Rapid HIV tests have a longer window than the tests used in the laboratories, which is the blind spot between the time of infection and the time when the test can detect signs of the virus. While the minimum testable day is similar (18 days vs

22 days) the higher range of the windows differs widely, with it going up to three months for the rapid test technology against 1.5 months for the laboratory-based tests. This means that, in the 1.5 to 3 months range, standard lab tests are a more effective option than rapid testing and are effective where the timeframe for infection is unknown.

Rapid HIV tests are antibody tests which detect the bodies reaction to HIV. As with standard tests, positive results need to be confirmed, which is done by sending a vial of blood to a laboratory to be tested as through the standard testing process. If a test is negative for a person who has reasons to believe they have come into contact with HIV recently, blood can also be taken and forwarded to a laboratory.

One of the stated concerns for Rapid HIV testing is in the risk of false positive results in low-risk populations. While rates of false positives are low with HIV tests, they remain unavoidable from a statistical perspective. As the infection rate within a population decreases, the proportion of false positives to true positives increases, which is why some suggest it is preferable to not test low-risk populations who do not encounter risk factors. The false positive results (assumed to be true positives until the confirmatory tests) lead to a follow up requirement with confirmatory tests during which there is a waiting period which can create anxiety for the person awaiting results, even though they are not actually infected with HIV. However, testing the general population presents several advantages, including reducing stigma, which are discussed below in relation to routine universal testing.

One of the main advantages of rapid POCT for HIV is that it removes some of the common barriers for testing such as access to services (in remote/rural locations), concerns about privacy and stigma, fear of needles and difficulties in making or following up on appointments. POCT does not require drawing a vial of blood as sample, and therefore can be easily completed in the context of a community-based organization, which provide low-threshold access to several services. Community-based organizations have trust-based relationships with their clients who may have a distrust of governmental health care service providers, providing stigma and judgment-free services. The environments provided by community-based organizations is generally less clinical than in labs or physician offices, with easy resources to peer-based services.

A recent pilot project with several pharmacies who provided POCT found that despite some challenges the process was feasible, acceptable, and could improve access to HIV testing. Because pharmacies are not stigmatized locations and exist in rural/remote locations as well as urban, access to testing in pharmacies can also provide better options for some segments of the population, for some who may not wish to access the services of community-based organizations but still have concerns bringing up the issues with regular health care providers.

A recent scoping review of the literature on HIV POCT in Canada by Minichiello et al. (2017) indicate that POCT is widely accepted by the Canadian population, is effective in reaching out to never-tested groups, provides good rates of linkage to care and very limited loss to follow-up.

Self-test and home-based testing kits exist but are not approved for sale in Canada, although individuals may be able to order them or buy them in other countries. Self-test and home-based testing kits would allow individuals to test themselves for HIV without the participation of any external person regardless of profession. Some aspects of quality for these tests are unproven and can leave a gap in linkage to care or counselling, should a test be positive.

Taylor et al. (2014) provides a discussion of some of the arguments for and against HIV self testing. They find that arguments for, include: the medium is acceptable to users, especially among at-risk individuals, self-testing empowers users and normalizes testing. They however also point out arguments against the method: they are costly, they have a chance of false-negative results, lack opportunities for linkage to counselling, care and diagnosis for other STIs. In light of this discussion, it is likely that the drawbacks of self-testing can be mitigated by education and other implementations, and that the potential for normalization and empowerment more than compensate for these.

A recent article by Pant Pai (2017) suggests that most Canadian stakeholders are in support of expanding the use of self-tests, while pointing out a set of concerns which should be addressed in conjunction with a widespread implementation. These include cost, linkage to care and counselling, the accuracy of the tests and clarity of instructions, as well as the liability in the context of non-disclosure.

## **Considerations**

### ***HIV testing and linkage to care***

A potential issue with some of the vulnerable populations that ACCH members are working with is that of linkage to care. Because of mistrust in relationships with official systems, some individuals who are tested may be lost to follow up and not return to obtain their results. This can lead to situations where individuals who are tested as HIV positive remain unaware of their status. Processes which reduce the barriers of linkage to care should therefore be prioritized with such groups.

Providing Rapid POCT testing in community-based organization can be a way to increase linkage to care in these cases as the testing is done through an organization that has an established trust-based relationship with its clients. Many such organizations have outreach workers who actively engage with the community and can connect with individuals who would otherwise not follow-up on their test results.

### ***Education***

Workers in front-line community-based services report the importance of having HIV testing services accompanied by education on HIV, STBBIs and general sexual health. Some clients are misinformed as to the nature of HIV as well as to the state of options available to manage it. HIV testing services, whether POCT or other, provides an important opportunity to connect with clients and have conversations about their sexual health.

### ***Routine universal testing***

Another approach to HIV testing is systemic changes to implement routine universal testing. Routine testing involves offering all health care patients the opportunity to HIV testing instead of focusing on at-risk populations. Studies in the USA, the UK, as well as current projects in British Columbia have shown that routine testing is cost-effective, as high level of acceptability, reduces stigma related to HIV testing, and leads to earlier diagnosis (Gustafson, Ogilvie, Moore, & Kendall, 2014). While targeted testing remains an important element of the continuum of options, making HIV testing part of routine health care visits has proven to be a very successful.

### ***Anonymity***

Providing means for vulnerable individuals to obtain health services while remaining anonymous is a key component of harm reduction approaches. In Canada, it is possible to request a non-nominal testing, where a code can be attributed to a blood sample before being sent away for testing. This process is however not anonymous when accessing the services of a facility requiring a health care card or proof of medical coverage as identity will be disclosed to the health care provider even if it is not shared with the laboratories.

A few sites do provide anonymous standard HIV testing. Point-of-care testing makes it easier to have an anonymous screening because the results are obtained on site and do not require the sample to be sent to a laboratory. A recent piloting of a dried blood spot testing project by the Saskatoon Tribal Council was positively received by their community, seeing the new option as an acceptable way to test without having the stigma often associated with getting tested in clinic (Bridges, 2018). However, a positive screening result, or a desire to obtain a confirmatory result because of circumstances, would require a blood sample to be drawn and removal of the anonymity of the person.

### ***Remote and rural populations***

A consideration in support of the dried blood spot (DBS) testing is the considerable ease to transport to ship the blood samples. Many remote locations rely on expensive shipping methods or on in-person deliveries to deliver samples to the closest laboratory, which can be very cost-prohibitive for community organization or local health authorities. Because DBS samples can be shipped through the mail, the screening processes in remote areas become much cheaper and accessible.

### ***Infrastructure***

A factor against the wider adoption of DBS in Alberta is the current lack of infrastructure to support it. Currently, samples are being sent to the National Microbiology Laboratory (NML) for testing instead of being processed in the province, as provincial labs do not currently have the required capacity. A significant increase in DBS testing may therefore require an investment towards providing Albertan testing laboratories with appropriate equipment and procedures.

### ***Reliability***

Evidence shows that HIV tests (standard and Rapid POCT) have low false positive rates (when testing high-risk populations, as discussed above) and are reliable when done appropriately. It therefore remains important that, even though POCT tests are simple to use, those doing it at the testing location must be trained adequately.

### ***Understanding the population and normalizing the process***

As discussed above, one of the keys to successful HIV testing is in targeting the appropriate high-risk populations. However, this does lead to the potential further stigmatization of populations which would be the focus of HIV testing initiative. The stigma associated with HIV leads to individuals not getting tested and to not following up on the HIV results.

This should be countered through joint strategies of providing options of anonymous testing, but also of normalizing the testing process through public awareness and soliciting the support of community champions who would publicly be tested for HIV, such as through the National Day of Testing initiative.

### **Conclusion**

There are many tools available towards increasing access to HIV testing and testing rates. Evidence shows that most HIV testing techniques are reliable when administered properly and as part of a process which allows for the double-checking of the results. People at risk of HIV exposure live in a wide diversity of context and may not even be aware of their exposure risk. This leads ACCH to recommend that a wide range of tools be promoted and used as part of an encompassing HIV testing strategy, paired with continuing education. Standard testing, rapid point-of-care testing, dried blood-spot testing and self-tests can all be used in different context to reach population facing their own challenges. Promotion of routine universal testing, which has shown to be efficient in other jurisdictions, would also be a useful element of efforts to increase reach the undiagnosed as well as to reduce stigma surrounding HIV. With all these tools, a constant concern must always be the capacity to link to care and counselling for those who obtain a positive testing result. There is no single tool which can solve the problem of undiagnosed HIV cases, so we must reach out and provide the tools that fits into the lives of the populations we provide services to.

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