The acceptability and use of HIV self-testing among men who have sex with men in high-income countries

Question

- What is the acceptability (views) and uptake (use) of self testing of HIV among men who have sex with men?

Key Take-Home Messages

- Men who have sex with men from high-income countries appear to be willing to use HIV self-tests (1-5).
- The main benefits of HIV self-tests are convenience and privacy (1, 6-8). The main barriers are concerns about administering the test, concerns about test accuracy, the lack of personal or professional support during testing (1, 6, 8) and cost (6, 7, 9, 10).
- When given a choice of different testing scenarios, men were most willing to test when: the test was given at home, it was free and involved collecting blood rather than saliva; the results were immediate, anonymous and given by phone; and counselling was given in person. Of the seven attributes tested in the scenarios, three had a significant impact on decision to test: price, timeliness of results and location.
- HIV self-tests appear to be an effective way to reach men who haven't tested before or who do not test frequently. Self-testing may be a particularly useful option for men in smaller communities, younger gay men and men from cultural communities where homosexuality is not accepted.
- Implementation strategies that may help overcome barriers to HIV self-testing include supervised self-testing (11) and voucher programs that allow men to access tests at no cost (12, 13).

The Issue and Why It's Important

HIV testing is a crucial step in diagnosing people with HIV and

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engaging them in care. Early detection of HIV gives people access to timely treatment, which is essential to their health (14); it also reduces transmission (15, 16). Despite the fact that HIV testing in Canada is free, confidential and, in some places, rapid and anonymous (17), not all men who have sex with men in Canada are being adequately tested for HIV. Barriers to testing include: lack of perceived risk of HIV; fear, stigma and discrimination; and lack of access (due to remote locations, operating hours, and limited services) (18).

HIV self-testing may increase access to and uptake of HIV testing (9, 10, 19). HIV self-tests, also known as home tests, are commercially available rapid HIV testing kits. Individuals can collect a specimen, perform a test and interpret the results in a private environment without the assistance of a healthcare professional (20, 21). Self-testing kits are different from home collection kits, where users collect a sample, mail it to a laboratory and receive results a few days later (22). Some HIV self-test kits use an oral (saliva) swab (23), while others require blood from a fingerstick (24).

Some preliminary studies have found that HIV self-tests may increase the frequency of testing (25, 26) among people at high risk and prevent exposure to HIV (27); however there are some limitations and concerns about self-testing, including:

HIV self-tests are not as sensitive as laboratory tests so results do not provide a definitive diagnose (21): individuals who receive a non-reactive (negative) result on a self-test and who have had recent or ongoing exposure to HIV should re-test (21); individuals who receive a reactive (positive) result should have another test through the laboratory testing system to confirm the result (20).

People who self-test do not receive pre- and post- test counselling (9, 19). Indeed, a requirement of Health Canada is that rapid HIV tests are only to be used when pre- and post-test HIV counselling is available (17).

HIV self-tests have received regulatory approval in the U.S., U.K. (with the exception of Northern Ireland) and France and are sold over-the-counter in those countries (28-30). In Australia, a policy change in 2014 allowed HIV self-tests to be sold, even though they have not been approved by the national regulating body (31). As of February 2017, Health Canada has not yet approved the license or sale of any HIV self-tests in Canada (32, 33), although Canadians can access self-tests via the internet and cross-border purchase (20).

The following sections broadly explore two aspects of HIV self-testing among men who have sex with men in high-income countries: acceptability and usage. Generally, awareness of the test, willingness to test, viewpoints, benefits and drawbacks, test uptake, experiences using the test, and self-testing strategies are covered.

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What We Found

Views on HIV self-testing

Based on the research, HIV self-testing appears to be acceptable to men who have sex with men in high-income countries. The main benefits are convenience and privacy. The main concerns are administering the test, test accuracy and the lack of support during testing.

In a systematic review of 11 studies that examined the acceptability of HIV home testing methods (both home sample collection kits and rapid self-tests) (9), three (27, 34, 35) were conducted with men who have sex with men in high-income countries and looked specifically at self-tests. Participants in all the studies viewed HIV home tests as accessible, private and easy to perform as well as a way to increase the reach of testing. Some participants were skeptical about test accuracy and the availability of post-test counselling.

In a second review that examined the acceptability, values and preferences of HIV self-testing among key populations (19), men who have sex with men from high-income countries were represented in 11 of the 23 studies (25, 27, 34-42). Overall, the men found HIV self-tests to be acceptable. The main benefits were convenience and privacy; the main concerns were user error, poor accuracy, lack of counselling and cost.

A number of recent studies, conducted mainly in high-income settings where particular HIV self-tests had been approved for use, also looked at the acceptability of HIV self-testing among men who have sex with men. In some, participants were asked about different HIV self-tests (i.e. oral swab verses fingerstick); in others, they were given self-tests to use during the study period. In almost all studies, participants found the self-test offered convenience and confidentiality; however, they were concerned about administering the test correctly and the lack of a supportive testing environment:

- In a study of 212 black men in North Carolina (7): more than three-quarters (77%) were aware that HIV self-tests kits were available and 17% had bought a kit in the past; and 67% said that they would be likely to purchase a kit in the future as it offered convenience, privacy and fast results. Participants who said they would not purchase a kit were comfortable with current testing practices and cited concerns of test accuracy and cost.

- In a study that explored facilitators and barriers to self-testing among 30 young black men in New York City (6), only one participant reported ever using an HIV self-test. According to participants, facilitators to self-testing were convenience, privacy and control. Being able to test

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privately removed the anxiety and stigma associated with testing at a public venue. Barriers to self-testing were cost, correct usage, lack of support during or post-test, and the anxiety associated with purchasing and administering the test. Participants said they would be more likely to use an HIV self-test if they were given more instruction on how to correctly administer the test and if testing occurred in a socially supportive environment.

- Focus groups with 47 men in three cities in England (8) found that one key benefit of self-testing was confidentiality, particularly for men living in smaller communities, younger men who may not yet be 'out', and men in certain cultural communities where homosexuality is still considered taboo. A second key benefit was convenience: participants valued a product that allowed them to test whenever they had time, regardless of the location. Barriers included the fear of having a positive test result without immediate personal or professional support, administering the test correctly and unnecessarily complex instructions.

- Another U.K.-based study looked at preparedness for the HIV self-test (1). Researchers recruited 999 men from 17 gay commercial venues to complete a questionnaire and conducted focus groups with patients and providers who had experience using or implementing HIV self-testing. In the focus groups, both patients and providers agreed that self-testing was convenient and discreet and had the potential to reach diverse and potentially underserved populations. Men specifically mentioned that the HIV self-test avoided the stigma associated with attending a sexual health clinic. Both groups also noted that a high degree of health literacy was required to correctly administer the test, and that a reactive test may result in distress or isolation. Providers also suggested that the HIV self-test lends itself to missed opportunities to engage people in HIV care.

It is difficult to determine exactly how users would react in the event of a positive result; however, one study engaged 84 gay and bisexual men in New York City in a hypothetical scenario, where they were asked about their anticipated reactions to an HIV-positive result from a self-test (43). Reactions included extreme emotional distress, a desire to seek HIV care and interruption of sexual activity. Several participants said they would seek confirmatory testing at a hospital, while others would get help and support from clinics and counselling services.

One option that could address the concerns about lack of support during testing is supervised HIV self-testing. A systematic review of

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studies of supervised (self-testing and counselling with the support of a healthcare professional) and unsupervised (performed alone) HIV self-testing in high- and low-risk populations (11) found that both testing strategies were acceptable, but participants preferred supervised strategies. A Canadian study on self-testing also found that about half of community members and a third of providers preferred an approach that offered self-testing in a supervised environment (2).

Willingness to test

Despite the pros and cons associated with self-tests, men who have sex with men are willing to use HIV self-tests. In an Australian study with 559 HIV-negative gay and bisexual men, almost half would test more frequently if they were able to test at home (4). In another Australian study with 827 HIV-negative men, participants preferred testing at home (5). In a U.K. study, 89% of men would be willing to use the test (1). A preliminary Canadian study also found that 88% of men would be willing to use an HIV self-test at home (2). However, one study with participants at a Black Gay Pride Festival in the southern United States found that HIV-negative men in the sample (n=387/544) who reported higher instances of engaging in condomless anal intercourse were less willing to use rapid self-tests (44). In another study among internet-using men, participants were more willing to use HIV home testing kits when offered hypothetical cash incentives were more willing to use HIV home testing kits (45).

In an effort to explore willingness to test in more depth, participants in a study in Los Angeles (3) were presented with eight hypothetical HIV testing scenarios, each which had a different combination of testing attributes (i.e. location, price, sample collection, timeliness of results, privacy, how results were given and what kind of counselling was provided). Men were most willing to test in the following scenario: test given at home, free, blood collection, immediate results, anonymous, results given by phone and counselling given in-person. Of the seven attributes, three had a significant impact on decision to test: price, timeliness of results and location.

Uptake of HIV self-tests

Self-testing may increase the uptake of HIV testing among men who have sex with men. In a controlled trial (26) with 230 HV-negative men from Seattle, participants were randomized to a self-testing or usual testing group for 15 months. They were all advised to test quarterly and sent testing reminders, while men in the self-testing arm were trained to use a self-test, received one at baseline and could request additional tests. Men in the self-testing arm reported more HIV tests than those in the usual testing group.

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Strategies to improve access to/uptake of HIV self-tests

While HIV self-tests are available over-the-counter in certain countries, cost can be a barrier to the use of HIV self-tests (6, 7, 9, 10). This barrier may be addressed through voucher redemption programs. A pilot study in Los Angeles (12) assessed the impact of vouchers that could be redeemed at a local pharmacy for a self-test kit. Staff and volunteers at community-based organizations handed out the vouchers, some of which had surveys attached, during events and at mobile outreach vans, targeting specifically African American men who have sex with men. Of the 274 vouchers distributed, 53 (19%) were redeemed. Of the 50 participants (18%) who completed the survey, 78% were likely or very likely to redeem a voucher again, and 44% preferred self-testing to clinic-based testing. However, approximately 22% of participants noted that redeeming vouchers for the test kit made them feel uncomfortable or very uncomfortable. Three individuals (6%) indicated being newly tested as HIV-positive and two (4%) withheld their results; all five reported seeking medical care. Authors concluded that a voucher program for HIV self-tests was feasible, and that it helped identify new HIV infections.

Another pilot study sought to determine if providing coupons for a free home test kit at a bathhouse in the San Francisco Bay Area had the capacity to reach gay men who never or seldom tested for HIV (13). Coupons could be redeemed for one kit, but only on the night the coupon was received. When they redeemed the coupon, men were asked to complete a short survey about demographics, HIV status and testing behaviours. Kits also included information on confirmatory testing and an email address to contact study investigators. Of the 181 men offered a coupon, 92 (51%) accepted. Men who had never tested or who had tested more than six months ago were most likely to accept the coupon. Of the 92 who accepted the coupon, 61 (66%) redeemed it and 53 completed the survey.

Factors That May Impact Local Applicability

LAs HIV self-tests are a relatively novel technology, new research findings are constantly emerging. Additionally, licensing, authorization, and policies surrounding this device vary from country-to-country, and are frequently being updated. As a result, this study not only used peer-reviewed literature, but also used grey literature to determine current testing practices in different countries. The overwhelming majority of peer-reviewed literature was observational in nature, with only one controlled experiment included (26). Two studies discussed hypothetical scenarios with participants (43, 45). Additionally, consumer alerts, newspaper

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articles, and other reports were referenced. As the sale and use of HIV self-tests has not been authorized in Canada, we found only one conference abstract (2) that examined HIV self-testing among men who have sex with men in a Canadian setting. Consequently, results should be interpreted with caution, as they are not necessarily generalizable and depend on the socio-cultural environment of each setting.

What We Did

We searched Medline (including In-Process & Other Non-Indexed Citations) using a combination of text terms HIV and (home test* or home-test* or home based test* or home-based test or self test* or self-test* or OraQuick or test* at home or Biosure or In-Home test* or Home HIV Test* or take-home.mp or take-home HIV or OraSure or In-Home HIV test* or Fujibio or Bravado or Home Access Express or myLAB or home access test* or home access HIV). Reference lists of identified literature reviews were also searched. All searches were conducted on August 19, 2016 and results limited to English articles published from 2006 to present in high income countries. The search yielded 329 references from which 26 studies were included. Sample sizes of primary studies ranged from 27 to 6,163.

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Rapid Response: Evidence into Action

The OHTN Rapid Response Service offers quick access to research evidence to help inform decision making, service delivery and advocacy. In response to a question from the field, the Rapid Response Team reviews the scientific and grey literature, consults with experts, and prepares a brief fact sheet summarizing the current evidence and its implications for policy and practice.

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