



Ministry of Health

HIV SELF-TESTING STRATEGIES

Issues and priorities for the implementation of HIV self-testing among men who have sex with men

The 2016 National HIV Testing Services (HTS) Guidelines from the Ministry of Health, Kenya, recommend HIV testing as a key component of strategies to ensure linkage of populations (≥ 15 years) to prevention programme interventions such as HIV pre-exposure prophylaxis (PrEP) and condoms, as well as treatment programmes with antiretroviral therapy (ART) for those who test positive. The Ministry of Health, Kenya has rolled out testing services for key populations (KPs) in the country and recommends quarterly HIV testing for KPs [1]. But testing coverage among men who have sex with men (MSM), who have a HIV prevalence of 18.2%, in Kenya remains sub-optimal [2].

Routine quarterly reports of HIV programmes, from implementing partners and community-based organisations (CBOs), record an average of 40-55% of the contacted MSM as having tested for HIV in a given quarter¹ [3]. Perceived lack of risk of HIV, fear of a positive test, stigma and discrimination, attitudes of healthcare providers, violence, and lack of access are challenges to increasing HIV testing among MSM [4].

Evidence from Kenya and elsewhere shows that HIV self-testing, which is recommended by the World Health Organization (WHO) [5], helps in early diagnosis before people become sick, reaches more people living with undiagnosed HIV, and brings services closer to where people live. It creates demand for HIV testing by providing a private, confidential and non-stigmatising testing service. Based on a secondary literature review, this brief summarises the key issues and priorities for the implementation of HIV self-testing (HIVST) strategies as part of the existing HIV and sexual health services for MSM in Kenya.

What is HIV Self-Testing?

HIV self-testing (HIVST) is the process by which a person collects his or her own specimen (oral fluid or blood) to perform an HIV diagnostic test. He/she then interprets the result, either in private or in the company of someone they trust. Rapid test kits, such as finger stick tests (on whole blood) or mouth swab tests (on oral-fluid) are used to conduct these tests. HIVST does not provide a diagnosis. Negative self-test results are considered negative, but all positive self-test results need to be confirmed according to national algorithms. Existing [WHO HIVST](#) guidance advises individuals, who may have been exposed to HIV in the past six weeks and those at high ongoing risk, such as key populations (KPs), to retest more frequently. WHO notes that HIVST is an approach that can help countries to meet the UN target of diagnosing 90 percent of all people with HIV by 2020.

Source: <http://hivstar.lshtm.ac.uk/publications/>

¹ Over the period April 2017 – March 2018 with county-wise variability in testing. For example, in Kisumu, Mombasa and Kiambu respectively, 40%, 28%, and 18% of MSM contacted by programmes in the first quarter of 2018 had tested for HIV from January to March 2018.

HIV Self-Testing in Kenya

The National AIDS and STI Control Programme (NASCOP), Ministry of Health, Kenya released full operational guidelines on HIV self-testing (HIVST) services in 2017 [6]. The guidelines emphasise the core principles of HTS: Consent, Confidentiality, Counselling, Correct results and Connection. The general population can access HIVST services through public health care facilities for free, as well as through private healthcare facilities, pharmacies and online, where kits are sold for between Ksh 700 and Ksh 800. Assistance with testing is available from the provider or through online sources such as YouTube videos.

Three types of HIVST kits are approved for use in Kenya: the OraQuick HIV Self-Test (OraSure Technologies, USA), the INSTI HIV Self-Test (Pouch) (INSTI, bioLytical Laboratories, Canada) and the Atomo HIV Self-Test (Atomo Diagnostics, Australia). The Ministry of Health has been promoting and providing OraQuick HIV Self-Test through the public health facilities. NASCOP, in partnership with stakeholders, is taking the lead in scaling up HIVST plans among the general population.

This brief draws on evidence from the experience of promoting HIVST among other key populations in Kenya, such as female sex workers, as well as for MSM in other countries, to help understand the feasibility and issues around implementing HIVST among MSM in Kenya.

HIVST shows high acceptability among different populations

Evidence from Kenya shows that HIVST has the potential to be an important component of HIV testing among many segments of the population [7,8]. In multiple studies in Kenya HIVST has been reported to be easy to be use [7,9,10]. The main concerns raised about HIVST are around administering the test, fear of test results, accuracy, cost and the availability of post-test counselling. Key findings from Kenya are:

- A study in coastal Kenya among sexually active adults showed high demand for self-testing when HIVST was offered at community pharmacies for US\$1 by pharmacy staff. Most testers were willing to self-test again in the future [7].
- A study among pre-exposure prophylaxis (PrEP) users in Kenya found that 98% accepted a HIVST when offered. 97% reported it easy to use, and many participants found it empowering, and that it reduced the anxiety associated with waiting for a clinic HIV test result [8].

Overall HIVST generally has high acceptability among MSM worldwide:

- In Cambodia, all 48 MSM participants in focus group discussions reported that they wanted to try HIVST [11].
- In Argentina, 82% of interviewed MSM reported that they were willing to buy the HIVST kit, and 77% reported that they would test more frequently in future if HIVST were available [12].
- In Peru, a study of MSM and transgender women found 82% were willing to take a HIVST [13].
- In South Africa, 91% of MSM participants took a self-test, and all those who tested reported that they would self-test again in future [14].
- One internet-based study of MSM in Hong Kong found low acceptability (44%), due to concerns about the accuracy of the test kit [15].

Convenience, ease of testing, the time-saving nature of the test, confidentiality and privacy are seen as the main benefits of HIVST.

HIVST can increase HIV testing uptake

Studies have found that HIVST may increase the uptake of HIV testing [16]:

- Two studies in Kenya examined the impact of secondary distribution of HIVST by women² to their sex partners. The studies reported that a two to three fold higher proportion of the male partners tested when given HIVST kits, as compared to the approach of giving male partners letters or vouchers and inviting them to test at the facility [9, 10].
- In a study among MSM in Hong Kong, participants in the self-testing³ group reported higher HIV testing uptake at six months compared to traditional testing [17].
- A study among outpatients in Malawi showed a four-fold increase in HIV testing uptake from facility-based HIVST compared to standard provider-initiated testing and counselling (51% vs. 13%) [18].

Self-testing can lead to more frequent HIV testing

HIVST may increase testing frequency among MSM.

- In the USA, HIVST increased the frequency of MSM who tested quarterly (76%) as compared to those who received standard HTS (54%). Men in the HIVST group tested on average 1.7 more times than in the standard testing group during a 12-15-month follow up period⁴ [19].
- In another study in South Africa, the proportion of MSM reporting testing at least once in the previous six months increased from 38% before the study to 85% at six-month follow-up. 100% of participants reported anticipating testing at least once every six months if HIVST kits were made available, compared to 84% if only existing clinic-based HIV testing was available in the coming year [14].

HIVST may lead to increased identification of new HIV diagnoses

Studies report that HIVST may lead to more HIV testing (and thus diagnosis) among people living with HIV in various country settings [20-25].

- In a home-based HIVST study in China, 15% of MSM who tested for their first time, tested positive [23]. A second study in China found a 4.5% positivity rate [24].
- A study of outpatients in Malawi found a non-significant increase in positivity from HIVST as compared to referrals for standard testing [18].
- A small study in Malindi, Kenya showed a twofold increase in HIV diagnosis upon distribution of HIVST, by trained counsellors, as compared to facility-based testing among gay and bisexual MSM population [26].
- Among male partners of women recruited at antenatal and postpartum clinics in Kisumu, Kenya who reported using HIVST, 3.8% and 2.2% respectively were positive. Male partners of female sex workers (FSWs) from the same study had a positivity rate of 13.8% [21].

² The women involved in the study were reached via antenatal and postpartum care clinics.

³ HIVST was delivered by regular mail (or post) with instructions to use through online live-chat (e.g. Skype).

⁴ 5.3 vs. 3.6 tests in the HIVST and standard groups

Evidence is equivocal on whether HIVST improves linkage to care and ART initiation

Evidence on whether linkage to care and ART initiation are improved among individuals who were diagnosed via HIVST versus those who were diagnosed through standard HTS remain inconclusive.

- A study in Kenya - involving secondary distribution of self-tests to partners by women recruited from antenatal and postpartum clinics as well as FSWs - reported that overall 57% of newly diagnosed partners had linked to care within three months with the majority of diagnoses coming from partners of FSW [21].
- In a study in China, 100% of newly diagnosed HIV cases through HIVST were linked to care [24].
- In Malawi, a study of outpatients found that after three months the proportion of those who had initiated ART was slightly lower among those who had self-tested than those who had been referred for standard HIV testing (70% vs 83%) but the difference was not significant [18].
- In Zambia, the proportion of newly diagnosed who had linked to care or were on ART - among FSW who either received HIVST kits directly or were given a coupon for a HIVST kit from a clinic or pharmacy - was non-significantly lower at both one and four months than among those who had undergone standard testing [27]. At four months, 86% of newly diagnosed HIV positives in the standard-of-care arm were linked to care, as compared to 72% of those who received the HIVST kits directly and 77% of those receiving the coupon for the HIVST kit.
- In Kenya, a study among MSM found high rates of immediate ART initiation following diagnosis in HIVST (83%), and this rate was the same as for those who were diagnosed by standard testing [26].

Conclusion

Multi-country evidence on HIVST implementation is largely limited to FSWs and the general population. Little is known about the feasibility, uptake, contextual factors and scalability of HIVST among MSM in sub-Saharan Africa, nor the incremental benefit in reducing undiagnosed HIV among MSM in the context of existing HIV programmes for MSM. Also, the findings from studies are varied on the downstream effects of HIVST on the HIV care continuum. A limited number of studies were available, and these had different study methodologies and a lack of comprehensive understanding of the delivery channels. Key programmatic questions remain on:

- Effectively delivering and scaling up delivery of HIVST, particularly for MSM
- Strategies for reaching MSM who may have never tested or infrequently tested
- Strategies for reaching those MSM living with HIV who remain undiagnosed
- Strategies for increasing early and frequent HIV testing
- Strategies for mobilising linkage to or retention in HIV care and prevention services in conjunction with HIVST.

The evidence in this brief is collected to design a community-based implementation of HIVST strategies as part of the existing HIV and sexual-health services for key populations, particularly MSM in Kenya.

References

1. NASCOP. National Guidelines for HIV/STI Programming with Key Populations. National AIDS and STI Control Programme, Ministry of Health, Kenya; 2014.
2. NASCOP. 2010–2011 Integrated Biological and Behavioural Surveillance Survey Among Key Populations in Nairobi and Kisumu, Kenya. Nairobi, Kenya: National AIDS and STI Control Programme, Ministry of Health, Kenya; 2014.
3. NASCOP. Key Populations (KP) quarterly programme data, January to March 2018. 2018.
4. Johnson CA. Off the map. How HIV/AIDS programming is failing same-sex practicing people in Africa. New York: IGLHRC; 2007.
5. World Health Organization. Guidelines on HIV Self-Testing and partner notification: supplement to consolidated guidelines on HIV testing services. Geneva, Switzerland 2016.
6. NASCOP. HIV Self-Testing: An Operational Manual for the Delivery of HIV Self-Testing Services in Kenya. Nairobi, Kenya: National AIDS and STI Control Programme, Ministry of Health, Kenya; 2017.
7. Mugo PM, Micheni M, Shangala J, Hussein MH, Graham SM, Rinke de Wit TF, et al. Uptake and Acceptability of Oral HIV Self-Testing among Community Pharmacy Clients in Kenya: A Feasibility Study. *PLoS One*. 2017;12(1):e0170868.
8. Ngure K, Heffron R, Mugo N, Thomson KA, Irungu E, Njuguna N, et al. Feasibility and acceptability of HIV self-testing among pre-exposure prophylaxis users in Kenya. *J Int AIDS Soc*. 2017;20(1):21234.
9. Masters SH, Agot K, Obonyo B, Napierala Mavedzenge S, Maman S, Thirumurthy H. Promoting Partner Testing and Couples Testing through Secondary Distribution of HIV Self-Tests: A Randomized Clinical Trial. *PLoS Med*. 2016;13(11):e1002166.
10. Gichangi A, Wambua J, Gohole A, Mutwiwa S, Njogu R, Bazant E, et al. Provision of oral HIV self-test Kits triples uptake of HIV testing among male partners of antenatal care clients: results of a randomized trial in Kenya. 21st International AIDS Conference; 18-22 July; Durban, South Africa 2016.
11. Pal K, Ngim C, Tuot S, Chhoun P, Ly C, Chhim S, et al. Acceptability Study on HIV Self-Testing among Transgender Women, Men who Have Sex with Men, and Female Entertainment Workers in Cambodia: A Qualitative Analysis. *PLoS One*. 2016;11(11):e0166129.
12. Pando MA, Dolezal C, Marone RO, Barreda V, Carballo-Diequez A, Avila MM, et al. High acceptability of rapid HIV self-testing among a diverse sample of MSM from Buenos Aires, Argentina. *PLoS One*. 2017;12(7):e0180361.
13. Bustamante MJ, Konda KA, Joseph Davey D, Leon SR, Calvo GM, Salvatierra J, et al. HIV self-testing in Peru: questionable availability, high acceptability but potential low linkage to care among men who have sex with men and transgender women. *Int J STD AIDS*. 2017;28(2):133-7.
14. Lippman SA, Lane T, Rabede O, Gilmore H, Chen YH, Mlotshwa N, et al. High Acceptability and Increased HIV-Testing Frequency After Introduction of HIV Self-Testing and Network Distribution Among South African MSM. *J Acquir Immune Defic Syndr*. 2018;77(3):279-87.
15. Wong HT, Tam HY, Chan DP, Lee SS. Usage and acceptability of HIV self-testing in men who have sex with men in Hong Kong. *AIDS Behav*. 2015;19(3):505-15.
16. Johnson CC, Kennedy C, Fonner V, Siegfried N, Figueroa C, Dalal S, et al. Examining the effects of HIV self-testing compared to standard HIV testing services: a systematic review and meta-analysis. *J Int AIDS Soc*. 2017;20(1):21594.
17. Wang Z, Lau JTF, Ip M, Ho SPY, Mo PKH, Latkin C, et al. A Randomized Controlled Trial Evaluating Efficacy of Promoting a Home-Based HIV Self-Testing with Online Counseling on Increasing HIV Testing Among Men Who Have Sex with Men. *AIDS Behav*. 2018;22(1):190-201.

18. Dovel K, Nyirenda M, Shaba F, Offorjebe O, Balakasi K, Nichols B, et al. Facility-based HIV self-testing dramatically increases HIV testing in Malawi: a cluster randomized trial. 22nd International AIDS Society; 23-27 July; Amsterdam, Netherlands 2018.
19. Katz DA, Golden MR, Hughes JP, Farquhar C, Stekler JD. HIV Self-Testing Increases HIV Testing Frequency in High-Risk Men Who Have Sex With Men: A Randomized Controlled Trial. *J Acquir Immune Defic Syndr*. 2018;78(5):505-12.
20. Choko AT, Kumwenda MK, Johnson CC, Sakala DW, Chikalipo MC, Fielding K, et al. Acceptability of woman-delivered HIV self-testing to the male partner, and additional interventions: a qualitative study of antenatal care participants in Malawi. *J Int AIDS Soc*. 2017;20(1):21610.
21. Thirumurthy H, Masters SH, Mavedzenge SN, Maman S, Omanga E, Agot K. Promoting male partner HIV testing and safer sexual decision making through secondary distribution of self-tests by HIV-negative female sex workers and women receiving antenatal and post-partum care in Kenya: a cohort study. *Lancet HIV*. 2016;3(6):e266-74.
22. Marlin RW, Young SD, Bristow CC, Wilson G, Rodriguez J, Ortiz J, et al. Piloting an HIV self-test kit voucher program to raise serostatus awareness of high-risk African Americans, Los Angeles. *BMC Public Health*. 2014;14:1226.
23. Tao J, Li MY, Qian HZ, Wang LJ, Zhang Z, Ding HF, et al. Home-based HIV testing for men who have sex with men in China: a novel community-based partnership to complement government programs. *PLoS One*. 2014;9(7):e102812.
24. Zhong F, Tang W, Cheng W, Lin P, Wu Q, Cai Y, et al. Acceptability and feasibility of a social entrepreneurship testing model to promote HIV self-testing and linkage to care among men who have sex with men. *HIV Med*. 2017;18(5):376-82.
25. Sibanda EL, Mutseta M, Hatzold K, Gudukeya S, Dhliwayo A, Lopez C, et al. Community-based distribution of HIV self-test kits: results from a pilot of door-to-door distribution of HIV self-test kits in one rural Zimbabwean community 2016 [Available from: <http://hivstar.lshtm.ac.uk/files/2016/12/Community-based-distribution-of-HIV-self-test-kits.pdf>].
26. Van der Elst EM, Shally M, Odour C, Chirro O, Ibrahim F, Amkeni members, et al. Peer-led Oral HIV-self testing finds undiagnosed HIV among GBMSM in Malindi, Kenya. Conference on Retroviruses and Opportunistic Infections (CROI); 13-16 Feb; Seattle, USA 2017.
27. Chanda MM, Ortblad KF, Mwale M, Chongo S, Kanchele C, Kamungoma N, et al. HIV self-testing among female sex workers in Zambia: A cluster randomized controlled trial. *PLoS Med*. 2017;14(11):e1002442.

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