

Can self-testing fill HIV testing gaps in Pakistan?

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An expanding HIV epidemic with large testing coverage gaps

The HIV epidemic in Pakistan is expanding among key populations, with sporadic nosocomial outbreaks among low-risk groups (1,2). Yet Pakistan's testing and treatment coverage remains among the lowest globally. A total of 290 000 people were estimated to be living with HIV in Pakistan in 2023, and only 66 000 (23%) of them knew their HIV status and 45 000 (15%) were receiving treatment (3). Slow and suboptimal uptake of differentiated service delivery approaches remains a key barrier to increasing testing and treatment coverage (4,5). There are other barriers such as the fear of stigma and discrimination, confidentiality concerns, low literacy, lack of awareness, low risk perception, and poor health-seeking behaviours. Structural barriers such as limited access to services, unaffordability and high cost of services also deter key populations from accessing services (6–12). Addressing the diagnosis gap through differentiated models and innovative approaches has been a national strategic priority.

The government and partners have taken several actions to address these barriers and improve access to HIV testing services for vulnerable populations. These include increasing community-based prevention and testing service sites from 19 to 53 between 2021 and 2024 and increasing the number of treatment sites across the country. Structured engagement of community-based organisations and key populations has helped increase demand generation for services. To provide an enabling environment for rights-based non-discriminatory services, law enforcement agencies were sensitised, and legal aid was provided through community-based legal aid officers in high-burden districts.

Self-testing as a potential tool to address the testing gap

HIV self-testing has emerged as a promising approach to reach those who would not otherwise test, because of its convenience, privacy and confidentiality, and the potential to address some of the barriers to accessing services (13,14). In 2016, WHO recommended HIV

self-testing based on evidence of its effectiveness, acceptability and feasibility (15). In Pakistan, HIV self-testing was first introduced as a routine approach to expand testing services in May 2023. A phased approach to implementation was adopted, whereby HIV self-testing was first introduced in the 2 highest-burden provinces of Sindh and Punjab, which are home to nearly 80% of people living with HIV in the country. Lessons from these 2 provinces informed the national scale-up to all 4 provinces from January 2024, and the addition of a fully virtual distribution model in Sindh and Punjab in May 2024. This commentary summarises the implementation model and lessons learned based on available programme data.

Funded by the Global Fund, implementation was done by the United Nations Development Programme with the support of key partners, coordination by the national and provincial HIV programmes, and technical support from the World Health Organization and the United Nations AIDS Programme. HIV self-test kits were distributed through community-based organisations to key populations – men who have sex with men, female sex workers, and transgender people (16). Men who have sex with men, transgender people and female sex workers were prioritised because of the increasing number of HIV infections and greater coverage gaps among these groups. Distribution was strategically prioritised for those who were not routinely accessing services through community-based drop-in centres or those who refused testing during outreaches in the community.

Distribution was made to clients for personal use onsite or later at their convenience (primary distribution) and to partners and networks of key populations or people living with HIV (secondary distribution) (17–20). Demand generation included awareness sessions for community members at drop-in centres and during outreaches. Pamphlets and brochures promoting HIV self-testing were distributed at drop-in and treatment centres. Through a virtual distribution platform (<https://www.quickres.org/>), clients could request self-test kits online and receive them by mail or pick them up from the drop-in centres without the need to see a provider. A mobile application, Sehat Dost (<https://www.sehatdost.pk/>), was developed to raise awareness about HIV among

the key populations, promote the virtual distribution platform and provide direct link to the website.

A WHO-prequalified oral fluid HIV self-test (OraQuick HIV Self-Test®, OraSure Technologies, Inc.) was used, which has a sensitivity of 100% and specificity of 99.8% (21). The test provides a result in 20–40 minutes using an oral fluid specimen collected by swabbing the gums with a collector device (21). The manufacturer's instructions for use were translated into the local language, Urdu. All the kits were provided free to the clients.

Participation in the self-test programme was voluntary, an informed verbal consent was obtained as standard practice for any testing or prevention service delivered by the programme. Clients who were not willing to use the self-test kits could use other testing options or services. Client privacy and confidentiality were maintained by keeping all paper and electronic data files accessible to authorised personnel only. Clients who chose to self-test onsite at the drop-in centres were offered a private space for the test.

A standardized HIV self-test module was added to the routine testing register to collect client data, including demographics, distribution mode, follow-up, results, and linkage of HIV-reactive clients to treatment and care services. The data were collected on paper forms and then entered into Excel spreadsheets daily. Linkage to care was defined as any client with a reactive HIV self-test result, who was successfully referred to and attended a health care facility for confirmatory test using the national algorithm. Those who were confirmed HIV-positive were offered further clinical assessment and linkage to treatment, care and support services at HIV treatment centres.

One-year experience of HIV self-test distribution

During the first year (May 2023 to June 2024), 5289 HIV self-test kits were distributed through community-based models. Out of those kits, 4558 (86.2%) were directly distributed to clients for their personal use (primary distribution), while 731 (13.8%) were for secondary distribution to peers, sexual partners and the broader networks. Overall, 3849 (72.8%) of the clients that received the kits shared their results with providers, of whom 88 (2.3%) reported reactive test results [83 (2.4%) primary and 5 (1.4%) secondary recipients]. Of these 88 clients, 69 (78.4%) were referred for confirmatory testing and all were confirmed HIV positive.

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Between May and December 2024, 1010 self-test kits were distributed virtually: 590 (58.4%) were delivered at homes, while 420 (41.6%) were collected by clients in-person from drop-in centres. Of the 695 (68.8%) clients who shared their results, 40 (5.8%) reported reactive results, of whom 27 (67.5%) were confirmed HIV positive and referred to care services.

The ability to distribute relatively large numbers of HIV self-test kits to key populations through community-based and virtual models in a newly established programme shows that the intervention is logistically feasible. HIV self-testing is accurate and has the potential to identify additional undiagnosed infections, with many who test positive seeking confirmatory testing and being referred for care services. Informal interviews with HIV self-test distributors and providers suggest that self-testing is acceptable among the population to complement existing traditional testing services. These preliminary findings and strong interest from beneficiaries provide an indication that HIV self-testing has the potential to address concerns about stigma, discrimination, confidentiality, and some of the structural barriers to testing in Pakistan. Experiences in other countries of the region show similar findings (22–26).

Way forward for HIV self-testing in Pakistan

There has been a gradual progress towards adoption of community-based service delivery models in Pakistan to address service delivery and coverage gaps. One of such promising models is the HIV self-testing. Experiences from the first year of implementation show that this model holds potential in expanding access to HIV testing among key populations in Pakistan. Scaling up of HIV self-testing should be implemented with national ownership and sustainable funding models. The use of diverse products, such as lower-cost blood-based self-tests, can be considered, to provide more options to clients, increase affordability and allow the distribution of more kits. Optimising service delivery models through meaningful community engagement and effective demand generation can further improve programme efficiency.

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