Effects of self-testing on HIV outcomes in west Africa

There has been tremendous global progress in efforts to end the HIV epidemic, with many countries likely to achieve the UNAIDS 95–95–95 targets. These targets aim to have 95% of people living with HIV aware of their status, 95% of people aware of their status accessing treatment, and 95% of people accessing treatment achieving viral suppression—targets achieved by numerous countries in southern and eastern Africa. However, progress has not been consistent across countries, with gaps by population subgroups (eg, men at high risk of HIV acquisition, adolescents, and key populations) who have low HIV testing and treatment coverage.

In west Africa, an estimated third of all people living with HIV are unaware of their HIV status. Key populations in this region (eg, men who have sex with men and female sex workers) have a higher proportion of incident HIV than the general population compared with other African settings.

This large proportion of people who are unaware of their HIV status in west Africa indicates wide inequity in obtaining the potential gains offered by decentralised HIV-testing programmes, including HIV self-testing. HIV self-testing, in which anybody can conduct an HIV test for themselves at a time and location of their choosing, has been recommended by WHO since 2016. HIV self-testing is an effective tool in the HIV response as it promotes discretion and autonomy, increases testing frequency, and is highly acceptable among key populations and those who do not regularly test for HIV. In southern and eastern Africa, HIV self-testing has been massively deployed; for example, through the Unitaid-funded Self-Testing Africa Initiative, which was initiated in 2015. As of July, 2022, 98 countries had developed national policies supporting HIV self-testing, with nearly half implementing national programmes.

One of the challenges as countries scale-up and optimise HIV self-testing has been modelling its population-level effects in increasing HIV diagnoses, reducing mortality, and averting HIV transmission, as well as its contribution to national prevention efforts. Not all self-test results will be reported, and routine data sources might not be sufficient to capture which testing modality was used for initial diagnosis—especially as people with reactive self-test results might wait before accessing confirmatory testing.

The Article by Romain Silhol and colleagues in this issue of The Lancet HIV is timely not only because it shows the population-level epidemiological effects of HIV self-test-distribution models in underserved countries in West Africa, but also because it shows how data collected from self-testing programmes can be used to model national HIV prevention gains if HIV self-testing services are scaled up regionally.

The AutoTest VIH, Libre d’accéder à la connaissance de son Statut (ATLAS) programme, funded by Unitaid, introduced and scaled-up HIV self-testing in Côte d’Ivoire, Mali, and Senegal, countries representative of the wide epidemiological challenges in the region. Silhol and colleagues fitted a deterministic compartmental model of HIV transmission to country-specific data for all three countries, originally developed in Côte d’Ivoire. Models simulated the effects on HIV transmission on the basis of actual HIV self-test kit distributions in the ATLAS programme during 2019–21 and the potential effects on transmission if HIV self-testing were scaled-up from 2022 onwards. Most of the data informing these models were available from routine sources, supplementing programme-distribution data.

The distribution of 380 000 HIV self-testing kits to people at increased risk of HIV acquisition in Côte d’Ivoire, Mali, and Senegal was estimated to have resulted in 700 (90% UI 500–900) additional HIV diagnoses in Côte d’Ivoire, 500 (300–900) in Mali, and 300 (50–700) in Senegal during 2019–21 among key populations and their partners, with the ability to avert 1900 (90% UI 1300–2700) new HIV infections and 600 (400–800) HIV-related deaths across the three countries, of which 38·6% (90% UI 31·8–48·3) of new infections and 70·1% (60·4–77·3) of HIV-related deaths would be among key populations during 2019–28. The authors also provide evidence indicating the value of secondary distribution of HIV self-testing for closing the gaps in testing coverage and increasing numbers of people who are diagnosed. Secondary distribution, during which recently diagnosed individuals or individuals at high risk of...
HIV distribute HIV self-testing kits to their partners and networks, remains one of the most promising approaches to HIV self-testing, reducing disparities in HIV diagnosis.

HIV self-testing continues to be important in preventing HIV transmission and disrupting the HIV epidemic, with relevance as a prevention tool in west Africa despite suboptimal national-testing coverage. Ongoing monitoring of HIV self-testing through national programme delivery can provide informative data to model population effects. In the future, considerations of costs should be included in models and the combined effects of HIV self-testing on transmission when used as a tool to initiate and maintain PrEP use should be explored, with a WHO guideline change recommending this delivery model.10

We look forward to seeing the described modelling analysis being applied to other contexts to provide governments with effective tools to measure the effects of HIV self-testing with further optimised distribution approaches.

We declare no competing interests.

*Karin Hatzold, Yasmin Dunkley
khatzold@psi.org
Population Services International, Cape Town 7806, South Africa (KH); Clinical Research Department, Faculty of Infectious and Tropical Diseases, London School of Hygiene & Tropical Medicine, Maun, Botswana (YD)