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Frontier Health Markets (FHM) Engage

HIV SELF-TESTING IN THE PRIVATE SECTOR

Comparing Tanzania, Kenya, South Africa, Zambia,
and Thailand

August 12, 2022

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Authors:

Dr. Andrew Corley, Metrics for Management

Dr. Yuen Wai Hung, Metrics for Management

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About FHM Engage

Pushing boundaries in market system development: energizing actors, elevating consumers FHM Engage seeks to redefine technical assistance by engaging diverse actors from within health markets to discover new insights for old challenges and to co-develop systems approaches. We work through consumer-centered design, market facilitation, adaptive learning, and coaching to effect lasting change to the health system.

Global Program Objectives

- Improved market environment for greater private sector participation in the delivery of health products and services.
- Improved equal access to and uptake of high-quality consumer driven health products, services, and information.

FHM Engage Core Partners

- Results for Development (co-technical lead)
- Pathfinder
- Zenysis

FHM Engage Partner Network

- ACCESS Health India
- Africa Christian Health Association Platform
- Africa Healthcare Federation
- Amref Health Africa
- Ariadne Labs
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- Total Family Health Organization
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Contents

About FHM Engage	ii
Acronyms	iv
Executive Summary	1
Background	2
Scope	2
Methodology	3
Review summary	4
Context.....	4
What is the current state of the HIV epidemic in each country, with a focus on testing and disparities?.....	4
Registration and Supply of HIV STKs.....	7
How are HIV self-test kits registered in each country; what tests are available; and how much do tests cost?	7
Distribution Channels of HIV STKs in the Private Sector	10
How are private service delivery channels involved in HIV self-test kit distribution?	10
How has the private sector promoted and improved usability of HIV self-test?.....	12
Which delivery modalities have been used to increase testing among target population groups?	13
Conclusion.....	18
References.....	19
Annex I. Data available in this report	22

Tables

Tables

Table 1: Monthly household median incomes by wealth quintile	9
Table 2: Channels of private sector HIV STK distribution by country	11
Table 3: Minimum age requirements for HIV testing in the five countries.....	15

Figures

Figure 1: HIV prevalence & incidence (ages 15-49) in the five countries.....	4
Figure 2: Proportion ever tested for HIV and received results	5
Figure 3: Proportion of men ever been tested for HIV and know their results by wealth quintile	6
Figure 4: Distribution of HIV STKs by age and sex in 2021	6

Acronyms

AGYW	Adolescent girls and young women
AIDS	Acquired immunodeficiency syndrome
ADDOs	Accredited drug dispensing outlets
ART	Antiretroviral therapy
DDOs	Drug Dispensing Outlets
FDA	Food and Drugs Authority
FHM	Frontier Health Market
HIV	Human Immunodeficiency Virus
HIVST	Human Immunodeficiency Virus Self-Testing
HIV STKs	Human Immunodeficiency Virus Self-Test Kits
HTS	Human Immunodeficiency Virus Testing Services
ICPN	Independent Community Pharmacy Network
LMICs	Low- and middle-income countries
MOH	Ministry of Health
MSM	Men Who Have Sex with Men
NACC	National AIDS Control Council
NACP	National AIDS Control Programme
PEPFAR	President's Emergency Plan for AIDS Relief
PSI	Population Services International
RDT	Rapid diagnostic tests
SAPHRA	South Africa Health Products Regulatory Authority
SMS	Short message service
STAR	HIV Self-Testing Africa Initiative
TMDA	Tanzania Medicine and Medical Devices Authority
UHC	Universal health coverage
UNAIDs	Joint United Nations Programme on HIV/AIDS
USAID	United States International Agency for Development
WHO	World Health Organization
ZAMRA	Zambia Medicines Regulatory Authority

Executive Summary

Tanzania's private health system's network of hospitals, health centers, and dispensaries has for many years been an important provider of family planning services; maternal care; HIV testing services; and under five childcare.¹ Despite its importance, Tanzania's private health system remains an underutilized model for HIV testing and treatment. An estimated 1.7 million Tanzanians live with HIV and the country continues to experience an annual incidence rate of around 1.5 per 1,000 population aged 15 to 49. In order to reduce the public health burden of HIV, testing services must be expanded. HIV self-testing has come to be recognized as an important method of extending testing services to those groups with historically low rates of HIV testing and status awareness. In Tanzania, these groups include men and adolescents.

With limited HIV self-testing services available through its private health market, questions remain around how to scale up HIV self-testing kit (HIV STK) distribution through Tanzania's private health market. The Frontier Health Market (FHM) Engage - a United States International Agency for Development (USAID) project – aims to strengthen health markets to improve health outcomes. FHM Engage focuses on supporting local actors to improve health markets' ability to have equitable provision of high-quality health services and products in mixed health systems. In Tanzania, FHM Engage will support the mission's priority of expanding HIV/AIDS commodities distribution, including HIV self-testing kits and pre-exposure prophylaxis, through country's private market. To facilitate the FHM Engage team in designing and delivering mission critical activities, this desk review was written with the objective to examine how Tanzania and four comparator countries – Kenya, Zambia, South Africa, and Thailand – have facilitated the development of private health markets for HIV self-testing. This report reviewed peer-reviewed and grey literature related to the private market expansion of HIV STK sales in these countries and was further informed by selected key informant interviews conducted with stakeholders knowledgeable about the extent of their private health markets' engagement in HIV STK sales.

This review found the five countries have varying levels of private market involvement in HIV self-testing kit sales. In Kenya and South Africa, multiple delivery points have been utilized in their extensive private markets, including physical and online pharmacies, vending machines, and private clinics/non-profit websites. Zambia, alternatively, possesses few private points of sale for testing kits. While oral-based HIV SKTs have been available in all five countries, Kenya, South Africa, and Thailand have both oral- and blood-based testing kits available for sale through their private sectors. Prices for tests also varied widely from country to country with oral-based testing kits being more expensive in the private for-profit sector. In almost all settings, the high cost of private market HIV STKs was seen as a significant barrier to further scale-up. Finally, this report found that innovative work has been conducted in several countries in improving linkages to follow-up testing and treatment for private market clients.

Future key informant interviews may help to address remaining questions around HIV STK distribution through private markets, including managing private sector supply chains and HIV STK training requirements for private health care providers.

Background

The private sector is an important source of health care and product provision in low- and middle-income countries (LMICs), and its significance to many countries' broader health systems is becoming increasingly recognized.^{2,3} In many regions across the world, the private sector delivers nearly half of all healthcare services.¹ Besides health service provision, there has been an increasing role of the private sector in the finance, supply, and provision of health care products, such as family planning commodities.⁴⁻⁶ However, the potential role and involvement of private sector in distributing other health commodities in LMICs remain unclear.⁷

In 2015, the Joint United Nations Programme on HIV/AIDS (UNAIDS) launched the 95-95-95 targets to accelerate action to end AIDS epidemic by 2030.⁸ The targets aim for 95% of individuals with HIV are aware of their status, 95% of those are on treatment, and 95% of those on treatment have virological suppression. To achieve the first 95 target, expanded access to diagnostics is crucial. The development of HIV self-testing offers the potential for greater convenience and privacy in HIV testing and has enabled improved access to testing services for traditionally hard-to-reach populations. Additionally, the adoption of mobile health technologies can improve linkages between HIV self-testing and follow-up testing and care and may help contribute to achieving the second 95 target.⁹ Enhancing access to HIV self-test and increasing the options for care linkage requires efforts beyond the public sector. As private sector distribution channels have been underutilized in distributing preventive healthcare products in LMICs, it is important to review the strategies and current practices in leveraging private sector to expand HIV self-test distribution and linkage to care.¹⁰

The Frontier Health Market (FHM) Engage is a United States Agency for International Development (USAID) project that aims to strengthen health markets to improve health outcomes in mixed health systems. FHM Engage focuses on strengthening local health markets to optimize public and private sector engagement to contribute to sustainable market efficiencies and increased access to family planning, maternal and child health, and other health services, products, and information. This will be achieved through two main result areas: 1) improved market environment for greater private sector participation in the delivery of health products and services, and 2) improved equal access to and uptake of high-quality consumer driven health products, services, and information.

In Tanzania, FHM Engage's activities will directly support two Mission objectives: 1) enhance the enabling environment for private sector and civil society organizations, and 2) increase economic opportunities. To facilitate the FHM Engage team in designing and delivering mission critical activities, Metrics for Management (M4M) is conducting a series of desk reviews exploring how Tanzania and selected comparator countries have leveraged their private sectors to expand access to the prioritized commodities and services. The current report focuses on HIV self-testing (HIVST) and details the current state of private health market for HIV self-test kits (HIV STK) sales in Tanzania, Kenya, Zambia, South Africa, and Thailand.

Scope

This report summarizes a desk review of private sector distribution of HIV STKs in Tanzania and four comparator countries, Kenya, South Africa, Zambia, and Thailand. It provides country-specific information on various issues surrounding private sector dispensation of HIV SKTs, including the types of HIV STKs available for distribution; the private channels of distribution present in each country; private sector HIV STK prices; descriptions of delivery modalities that may improve access to target populations; and notable policies countries have instituted to support and link HIV STK users to care. This report is intended to facilitate identification of guiding activities that will improve access to HIV STKs through private health market networks in Tanzania.

Methodology

Desk review methodology

This desk review explores HIV STK sales in Tanzania, Kenya, Zambia, South Africa, and Thailand. These latter four comparator countries were selected for analysis after initial investigations found that each country had relevant policy and report documents available online to gain an understanding of how each had approached integrating their private markets into its larger HIV STK distribution scheme. For this review, peer-reviewed and grey literature sources were searched for relevant documents. Documents reviewed included published national policy frameworks and guidelines related to HIV testing along with peer-reviewed academic literature and implementor organization grey reports addressing private sector distribution of HIV STKs. Policy documents and guidelines on HIV testing were searched through countries' Ministry of Health websites and general keyword searches. To identify private sector interventions from funding organizations, searches were conducted of several funding agencies' websites (the United States International Agency for Development; the United Kingdom Foreign, Commonwealth & Development Office; President's Emergency Plan for AIDS Relief (PEPFAR); the Joint United Nations Programme on HIV/AIDS (UNAIDS); Unitaid; the Bill and Melinda Gates Foundation; and The Global Fund), as well as non-profit organizations that have focused on private sector interventions (Pathfinder International and Population Services International). Relevant academic literature was identified through keyword searches on PubMed. In addition to literature sources, this review's findings were supplemented by interviews undertaken with stakeholders from Kenya and Thailand who are involved in national HIV prevention efforts in two comparator countries. All searches and stakeholder communication were conducted in English during July and August of 2022.

Limitations

Given the limited time frame and nature of desk reviews, the search strategy has several limitations. As the report is designed for providing background information on the topic, it does not contain comprehensive information on all relevant aspects of HIV SKTs distribution in the private sector. Information on certain topics was sparse and, in some cases, not available for all countries. Additionally, as the search was conducted in English, information that was only available in other local official languages was not included in the report. The report reflects the most updated documentation available related to each country's policies. However, these policies may not reflect the on-the-ground practice reality within the country. Future iterations of this report may broaden the methodology to include additional stakeholder interviews to expand its findings.

Review summary

Context

What is the current state of the HIV epidemic in each country, with a focus on testing and disparities?

In order to facilitate the understanding of the current practice of private sector distribution and guidelines in Tanzania and its comparator countries, it is important to contextualize the information with the HIV burden and testing patterns. As Figure 1 indicates, the five countries can be thought as being grouped into three prevalence categories: relatively low (Thailand), moderate (Tanzania and Kenya), and high (Zambia and South Africa) HIV prevalence. As countries tailor their testing strategies to their needs, it will be important to remain cognizant of countries' disease burden contexts when understanding each country's HIVST strategy.

As testing needs depend on the country's HIV epidemic, the overall proportion of the population reporting ever having been tested and receiving a result for HIV generally mirrors (Figure 2) countries' disease burden. A notable exception, however, is Kenya. While Kenya can be characterized as having a moderate HIV burden, by comparison to its regional neighbors, its population proportion reporting ever being tested for HIV and receiving a result is similar to that of Zambia and South Africa - countries with higher prevalences. As Tanzania's northern neighbor and a country with a similar HIV prevalence profile, it might be particularly useful to examine Kenya's policies and practices.

FIGURE 1: HIV PREVALENCE & INCIDENCE (AGES 15-49) IN THE FIVE COUNTRIES

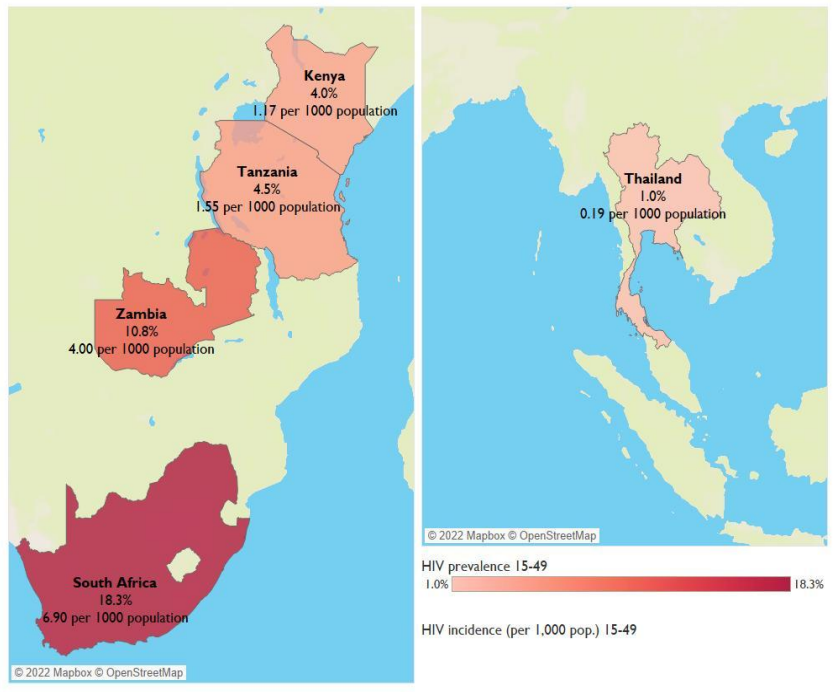
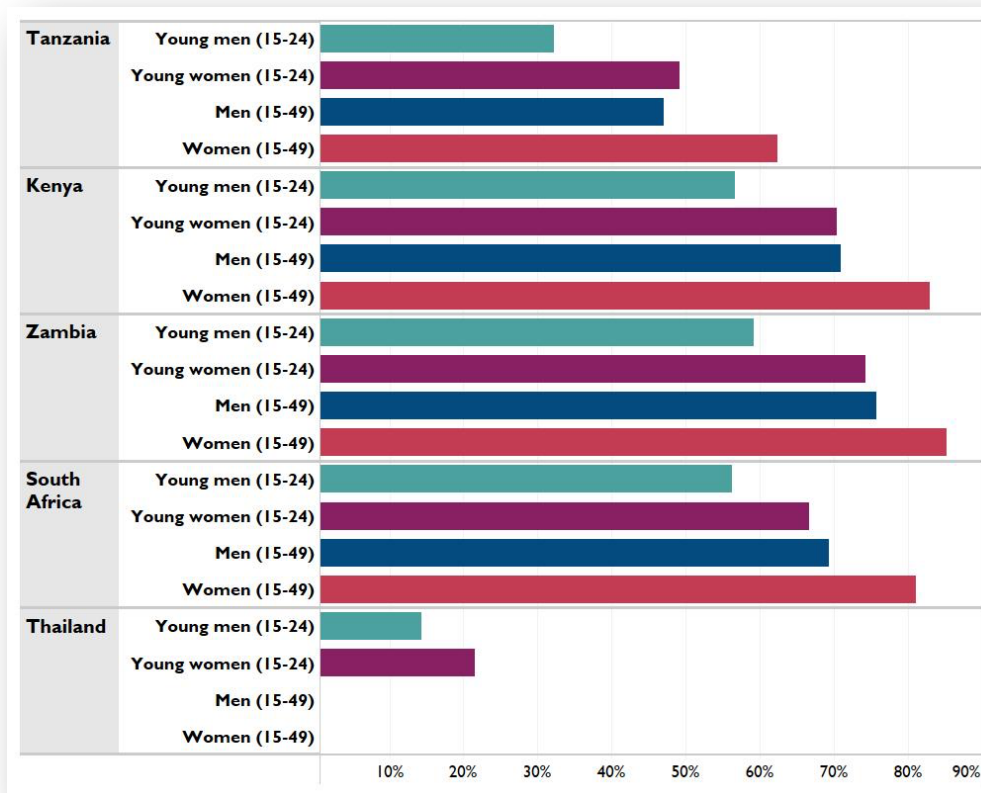


FIGURE 2: PROPORTION EVER TESTED FOR HIV AND RECEIVED RESULTS



Note: Thailand testing rates of all adults 15-49 unavailable

Figure 2 illustrates that men in all five countries have systematically lower rates of testing than women within the same age group, with young men reporting the lowest rates among all included age groups. As most sub-Saharan African countries implement routine HIV screening in prenatal care settings using an opt-out approach, high antenatal care uptake is associated with antiretroviral coverage and HIV testing in sub-Saharan Africa countries.^{11,12} Furthermore, some countries (including South Africa and Zambia) have been successful in eliminating wealth and rural-urban inequalities in accessing antenatal HIV testing.¹³ While the level of HIV testing is relatively similar across wealth quintiles among women (data not shown), Figure 3 illustrates the level of HIV testing among men in different countries by wealth quintile. In Zambia and South Africa, higher proportion of men among the top three wealth quintiles have been tested for HIV and know their HIV status than men in the lowest two wealth quintiles. In Tanzania and Kenya, greater rates of HIV status awareness are associated with greater wealth. In both countries, there is more than a 20% difference in status awareness between those in the lowest and highest wealth quintiles. Among men in the lowest wealth quintile in Tanzania, only about a third had been tested for HIV and knew their status, underlining the need for equitable access to HIV testing.

FIGURE 3: PROPORTION OF MEN EVER BEEN TESTED FOR HIV AND KNOW THEIR RESULTS BY WEALTH QUINTILE

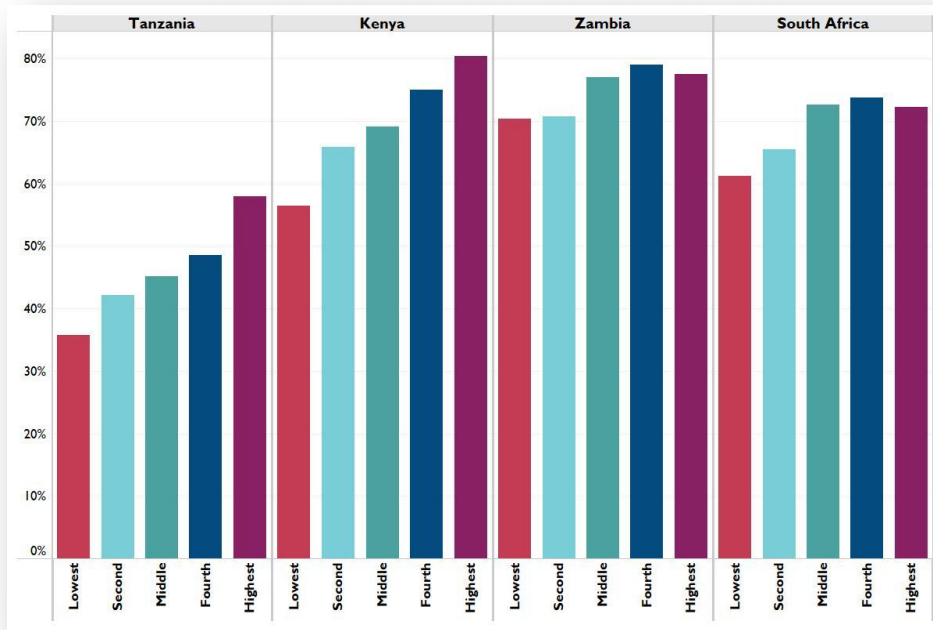


FIGURE 4: DISTRIBUTION OF PEPFAR-FUNDED HIV STKS BY AGE AND SEX IN 2021

Figure 4 illustrates how PEPFAR-funded HIV STKs in 2021 were distributed by age and sex segments. Similar to Figure 2, one can see that proportionately fewer self-tests were distributed to men overall than women and especially among younger men.



Registration and Supply of HIV STKs

How are HIV self-test kits registered in each country; what tests are available; and how much do tests cost?

World Health Organization

Section 2.2.1 National registration and regulations

“Establishing a clear and transparent national registration pathway for HIVST is important... To fast-track HIVST implementation, countries should consider having an expedited approval process for HIVST products.”

Section 2.2.2 Selecting and procuring HIVST products

“Plan to procure more than one type of HIVST kit. This is important to provide a back-up option in the event of product issues, to accommodate user preferences and to provide users with choice. Because some users may prefer oral self-tests and others may prefer blood-based self-tests, provisions should be made to procure and offer both options. This may facilitate uptake among different users and, thereby, impact HIVST implementation.”

Tanzania

Registration requirement HIV STKs must be approved and registered by the Ministry of Health, Community Development, Gender, Elderly, and Children through its Tanzania Medicine and Medical Devices Authority (TMDA). TMDA ensures that tests being registered for use in Tanzania have WHO pre-qualification, have undergone in-country validation, and have been locally registered with a lot-to-lot validation.¹⁴ While Tanzania’s TMDA has approved the use of both oral- (Oraquick HIV Self-Test) and blood-based kit (Mylan HIV Self-Test), and the National AIDS Control Programme’s (NACP) HIVST implementation framework permits the use of both types of HIV STKs, NACP has only approved the oral HIV STK to be distributed through the country’s public health system.¹⁴ Key informants have cited concerns around appropriate disposal as one of the main reasons that NACP has not yet approved the sale of any blood-based HIV STKs.

Product availability in private sector At present, HIV STKs are not widely available within the Tanzanian private for-profit market. The Tanzania HIVST framework states that wholesalers and distributors must obtain test kits from private importing agencies and licensed private pharmaceutical products’ channels. Research has examined pricing decisions for HIV STKs among local drug shops in Tanzania. In one study, HIV STKs were provided free of charge to selected drug shops who were then permitted to sell the kits for whatever amount they wanted.¹⁵ The study found that vendors’ HIV STK prices ranged from 1000 to 6000 TZS (median 3000 TZS; ~ USD 1.3). When assessing willingness-to-pay to restock HIV STKs, the study found the mean maximum willingness-to-pay to restock was 2000 TZS per kit. In another pilot study conducted by Population Services International (PSI) in Tanzania, the organization distributed free oral HIV STKs to pharmacies, which were then sold to consumers for a capped price of 3000 TZS (~\$1.3 USD) (Table 1). This price point of 3000 TZS, however, is close to the subsidized global wholesale price and would be an unprofitable price for importers, wholesalers, and points of sales in the absence of significant subsidies.^{15,16}

Kenya

Registration requirement HIV self-testing was introduced in Kenya in 2017 in order to complement existing testing services. HIV STKs must be listed by the Pharmacy and Poisons Board and validated by

the Kenya Medical Laboratory Technicians and Technologists Board. Informants have noted that the approval process can be long and difficult to understand. These approval barriers risk leading to fewer HIV STKs being approved for sale and, as such, reduced product variety. Kenya's National AIDS Control Council (NACC) would like to see an increase in the variety of tests available in the private for-profit market, so as to better meet consumers' preferences. There is ongoing dialogue between the Kenyan MOH, NACC, the Pharmacy and Poisons Board, and the Kenya Medical Laboratory Technicians and Technologists Board to streamline the approval process.¹⁷

Product availability in private sector Private for-profit sectors procure their tests through private importers and local distribution agents who typically have exclusive rights to distribute a certain type of test. In the retail sector, prices range from 250 to 1000 KES (\$2.1 to \$8.4 USD) (Table 1), with oral-based kits being slightly more expensive. A representative of NACC reports that consumers tend to prefer oral-based kits because they don't require a fingerstick. Generally, the private for-profit market HIV STKs are procured without subsidies. Prices to consumers often reflect a profitable price point for the private market actors.¹⁷

Zambia

Registration requirement The Zambian Ministry of Health (MOH) grants responsibility to regulate imported pharmaceuticals and products to Zambia Medicines Regulatory Authority (ZAMRA) through wholesale licensing, product registration, and post-marketing surveillance/pharmacovigilance.¹⁸ ZAMRA allows kits to be sold through pharmacies (primarily oral-based HIV STKs). In a study examining attitudes of key stakeholders towards Zambia's regulatory framework, the lack of an effective regulatory system and coordination between regulatory bodies was a concern for all respondents. Another key concern held by all was the potential entry of unregulated and poor-quality HIV STKs into the domestic market. Finally, respondents were concerned about user error when conducted by consumers.¹⁹

Product availability in private sector A survey of pharmacy prices showed that blood-based kits cost K20-40 (\$1.2-2.4 USD) and oral HIV kits were K100-250 (\$6.1-\$15.2 USD) (Table 1). The study's consumer survey showed that willingness-to-pay was generally highest among young women in Lusaka. The price range for most of the market segments was between K16.2 (\$1.0 USD) and 32.8 (\$2.0 USD).²⁰

South Africa

Registration requirement In alignment with WHO recommendations, South Africa has adopted the widespread distribution of HIV STKs since 2016. HIV STKs must be approved by the South Africa Health Products Regulatory Authority (SAHPRA), or other regulatory health authorities recognized by SAHPRA (e.g., members of the International Medical Device Regulators Forum) for private sector distribution.²¹

Product availability in private sector Private for-profit providers procure HIV STKs through manufacturers and distributors licensed with SAHPRA. Both blood-based and oral-based test kits are registered for use. Retail sector prices range from 100 rand (\$6 USD) to 300 rand (\$18 USD) per kit.²² Considering the median monthly household income among the lowest quintile in South Africa is similar to that of Kenya, HIV STKs retail prices may not be accessible for this sub-population (Table 1).

Thailand

Registration requirement In 2019, the Thai Food and Drugs Authority (FDA) announced that HIV STKs could be sold upon regulatory approval by the Thai FDA's Medical Device Control Division. Both blood-based and oral-based HIV STKs were subsequently approved by the Thai FDA to be commercially available for the public. As required for all medical devices, HIV STKs must have performance tests

conducted by a local, licensed test laboratory. Furthermore, since HIV STKs are used by lay people, the Thai FDA has labeling instructions that specify that all tests must indicate that self-tests may result in false-negatives and that in the event of a reactive test result users should seek diagnostic confirmation by a healthcare professional.

Product availability in private sector While both blood-based and oral-based HIV STKs have been available in the private for-profit sector, blood-based HIV STKs cost over 540 THB (\$15 USD), while oral-based HIV STKs cost nearly 1800 THB (\$50 USD).²³ In another USAID-funded project, LINKAGES Thailand, a willingness-to-pay study conducted with men who have sex with men (MSM) and transgender women concluded that the median price respondents were willing to pay for an oral HIV STKs was 300 THB (\$9.5 USD).²⁴ The product is fully subsidized in the public sector.²³

In addition to HIV STKs retail price in each country, Table I includes estimates for monthly household median incomes by wealth quintile as calculated using Metrics for Management’s Asset-to-Income Estimator (A2IE).²⁵ The A2IE considers a country’s income distribution, per capita income, and wealth rankings to approximate median household income by wealth quintile. This information can serve as a useful reference when considering HIV STK affordability in each comparator country.

TABLE I: RETAIL PRICES OF HIV STKS (IN USD) AND MONTHLY HOUSEHOLD MEDIAN INCOMES BY WEALTH QUINTILE

	Tanzania	Kenya	Zambia	South Africa	Thailand
HIV STK retail price per kit (USD)					
Oral-based HIV STK	NA (pilot for \$1.3)	\$2.1-\$8.4 (oral-based slightly more expensive)	\$6.1-\$15.2	\$6-\$18	\$50
Blood-based HIV STK	NA		\$1.2-2.4		>\$15
Household monthly income (median) by wealth quintile (USD)					
Lowest	\$ 138.5	\$ 115.6	\$ 52.5	\$ 104.4	\$ 524.5
Second	\$ 216.0	\$ 219.1	\$ 144.0	\$ 244.4	\$ 939.9
Middle	\$ 316.4	\$ 304.9	\$ 265.1	\$ 517.2	\$ 1,412.1
Fourth	\$ 437.0	\$ 379.1	\$ 437.9	\$ 1,108.6	\$ 2,000.3
Highest	\$ 673.3	\$ 660.5	\$ 1,119.3	\$ 2,485.4	\$ 3,380.5

Distribution Channels of HIV STKs in the Private Sector

How are private service delivery channels involved in HIV self-test kit distribution?

World Health Organization

Section 2.3.1 Strategic planning for HIVST service delivery

“Approaches can be largely facility-based or community-based, implemented through secondary distribution (for example, delivered by sexual partners), integrated with other related health programmes and interventions, or provided through pharmacies, vending machines, the Internet, or other public and private sector channels.”

Tanzania

Private for-profit There remains a limited commercial supply of HIV STKs; however, a number of pilot programs have been undertaken to inform the scale-up of private channels of HIV STK distribution.²⁶ Private market actors have shown strong interest in further developing the HIV STK market.

Kenya

Kenya’s operational manual for HIV self-testing delivery recommends that the selection of service delivery channels be based on the setting, context, and target population and should complement other existing HIV testing models, such as provider-initiated testing and counseling.²⁷

Private for-profit HIV STKs are widely available in physical and online pharmacies, and in vending machines located in supermarkets and universities.

Private non-profit HIV STKs have also been provided by non-profit operated clinics, including roadside clinics designed for hard-to-reach and key populations.²⁸

Zambia

Private for-profit HIV STKs are seen as having high potential for growth in the private health market. At present, there is limited availability commercially as cost recovery remains a key barrier. Along with pharmacies, unlicensed medicine shops without a pharmacist, where basic medical goods, OTC drugs, and other products are sold, also are known to participate in HIV STK sales.²⁰

Training requirement It appears that few educational requirements exist in order for private pharmacies to sell HIV STKs. Current dispensation requirements are ambiguous. While hospitals and clinics must undergo accreditation and would like for pharmacies to go through a similar process before being allowed to sell self-test kits, compliance with existing training standards is unclear.²⁰

South Africa

Private for-profit Private market for HIV STKs have been available through retail pharmacies in South Africa since 2018.²⁹ Products are also available through online pharmacies.

Private non-profit Through the HIV Self-Testing Africa Initiative (STAR initiative), HIV STKs have been provided in partnership with the Independent Community Pharmacy Network (ICPA) which has over 1100 member pharmacies. The STAR Initiative partners tested the feasibility of HIVST provision through

a group of 40 ICPA pharmacies with targeted demand creation activities during the COVID-19 pandemic. During the program, HIV STK could be obtained by redeeming a voucher or requesting one for free from the pharmacist. Besides the ICPA, free distribution of HIV STK has also been provided at specific retail pharmacies through collaboration with the National Department of Health.³⁰

Thailand

Private for-profit HIV STKs were approved for sale in the private market in 2019. HIV STKs are available in physical and online pharmacies. Some retail pharmacies also provide home delivery in urban areas.²³ In a study of preferred HIV STK delivery points by MSM and transgender women, pharmacies were most often selected as the preferred point of service. Within these groups, pharmacies are seen as a private and convenient option for receiving HIVST services.²⁴

Private non-profit HIV STKs have been offered to hard-to-reach populations in Thailand via an online HIV counseling and testing strategy operated by non-profit organizations. Online services were provided a video chatting platform preferred by the clients and were provided access to a web server application to schedule for appointment and access to post-test summaries.³¹

Training requirement Thailand’s National Guideline on the HIV Self-Screening Test describes two levels of HIV STK training. The first level is a two-day basic training program that covers basic facts about HIV transmission and treatment; discordancy; antibody-based testing; promotion of HIV STK screening; supervised and unsupervised HIVST; principles of consent and confidentiality; familiarization with HIV STK teaching and demonstration; interpretation of results; linkages to health facilities; and data collection tools. The four-day course covers the same topics along with more advanced topics related to counseling and partner screening.³²

TABLE 2: CHANNELS OF PRIVATE SECTOR HIV STK DISTRIBUTION BY COUNTRY.

Country	Private sector channels for HIV STK distribution
Tanzania	Latest pilot in physical pharmacies completed in 2022
Kenya	Physical pharmacies, online pharmacies, vending machines, roadside clinics (non-profit)
Zambia	Physical pharmacies, unlicensed medicine shops
South Africa	Physical pharmacies, online pharmacies, vending machines, online website (non-profit)
Thailand	Physical pharmacies, online pharmacies, online websites (non-profit)

How has the private sector promoted and improved usability of HIV self-test?

World Health Organization

Section 2.3.1 Strategic planning for HIVST service delivery¹

“Depending on the population...the support that is offered can be either directly assisted or completely unassisted.”

WHO guidelines differentiate between delivery approaches that provide direct assistance to HIV STK users and those that do not. Assisted approaches have the advantage of offering additional aid to those users who may require additional support before, during, and after product use. Assisted approaches include in-person assistance in one-on-one or group settings by trained personnel; internet-based or virtual methods; hotlines; pictorials or written media; or mobile messaging. Depending on the intensity of support, some of these methods can also be considered unassisted. Ultimately, when delivering HIV STKs through private channels, population-specific learning needs, the level of training of staff, time, and cost, are all factors that must be considered when deciding on the appropriate delivery approach.

Tanzania

Unitaid and PSI’s HIV Self-Testing Africa (STAR) program trialed private pharmacies in Tanzania as a potential distribution model for future scale-up. During project evaluation it was concluded that the model should be extended to include lower-level drug dispensing outlets, such as ADDOs, in order to further increase market penetration. It was also recommended to repackage HIV STKs sold in pharmacies to differentiate them from those provided in the public sector.³⁰

Kenya

To increase awareness and access to HIV STK, the Pharmaceutical Society of Kenya maintains a website on which users can locate pharmacies near them that sell HIV STKs and watch instructional videos on how to conduct blood- and oral-based HIVSTs.³³ Given the high mobile cellular subscription in the country, the Society also maintains SMS and phone support lines.

Additionally, PSI has increased private sector market for HIVST by bundling HIV STK with other sexual and reproductive health products, as well as campaigning through digital, community, and pharmacy to drive demand.

The Kenyan MOH and NACC have adopted a total market approach to HIV STK sales in which the private health sector delivers self-testing services to individuals who value the privacy and convenience of the private market and have the income necessary to pay for these services. This allows the commercial market to offload some demand from public sector services.¹⁷

Zambia

A frequent concern of unassisted delivery approaches is that customers would not understand how to perform the HIV self-test or, worse, commit errors that may lead to false-positive or negative results. In Zambia, Society for Family Health (PSI) found during the initial phase of a HIV STK pilot that participants were misinterpreting instructions and, as a result, not using the kit as intended. In response, the organization utilized human-centered design to develop Zambia-specific instructions for their Oraquick HIV STK. Project staff noted an immediate improvement in understanding by participants with these new context-specific instructions.²⁰

South Africa

Although blood-based HIV STKs have been available for sale in retail pharmacies for a number of years, initially sales were sluggish. One reason cited for this was that pharmacies were also stocking lower priced professional-use rapid diagnostic tests (RDTs) for HIV alongside HIV STKs with little differentiation in packaging. RDTs are designed to be used by trained health staff and have lower tolerance for user error. Ensuring private market actors are only selling HIV STKs designed to be used by lay people can help reduce confusion and increase users' confidence that they are able to correctly use tests.²⁹

In the private non-profit sector, the STAR project in South Africa used social media platforms such as Grindr, Tinder, Facebook, Instagram, Bumble, Google ads and GaySA Radio to promote the use of HIV STK and communicated the message of owning their individuality in taking charge of their health during the pandemic by finding out their HIV status.

Thailand

In Thailand, HIV STKs have been available in physical and online pharmacies. Many physical pharmacies also provide home delivery in urban areas. Delivery of HIV STKs is a market adaptation learned from COVID and Thailand's fairly strict social distancing requirements.²³

Which delivery modalities have been used to increase testing among target population groups?

World Health Organization

Section 3.1.1 Priority populations

"It is essential to differentiate HIV testing services to meet the needs of specific populations. HIVST has the potential to increase HIV testing coverage and frequency of testing among groups that are currently unreached... Depending on a country's context, there may be other country-specific populations that could also benefit from HIVST."

In its strategic framework for HIV self-testing scale up, WHO identifies priority populations

- Men
- Young people (aged 15 to 24 years)
- Couples and partners, including serodiscordant couples
- Pregnant and postpartum women in high HIV burden settings.
- Key populations, notably men who have sex with men, people who inject drugs, sex workers, transgender people, and people in prison.
- Any other populations considered as being at high-risk for HIV

Tanzania

In Tanzania, the STAR program used pharmacies as one of its distribution models to better reach high-risk men, adolescent girls and young women, and other key populations. Between February 2021 and February 2022 18,550 HIV STKs were distributed through 60 pharmacies in Mwanza, Dodoma, and Dar Es Salaam. Private pharmacies were found to be a promising distribution channel. However, program implementers concluded that additional marketing and awareness raising was critical to new demand creation.³⁰

Kenya

Given the higher incidence of infection among young people ages 15 to 24 and a lower proportion of testing among men than women, international and national aid organizations and the Kenyan government have taken a number of steps to improve access to testing services to these two target groups, young people, and hard-to-reach populations for HIV STKs. PSI, through their local partner Population Services Kenya, worked to promote HIV STKs during COVID-19 pandemic by fully subsidizing Oraquick oral-based HIV STKs for physical and online drug retailers, which allowed them to sell each HIV STK for 150 KES (\$1.26), about third of the normal retail price.²¹

Since 2015, PEPFAR funded a public-private partnership to reduce HIV transmission among vulnerable adolescent girls and young women (AGYW) in Kenya. As the implementation partner, PATH adapted the program during COVID-19 to create virtual safe spaces where AGYW can request oral-based HIV STKs to be delivered after pre-test counseling and risk assessment. AGYW had the option to conduct HIVST at home, which can be done on their own or through an assisted approach. HIV STKs have also been distributed to their male sexual partners.³⁴

For hard-to-reach populations, a non-profit organization (North Star Alliance) providing roadside wellness clinics conducted several randomized controlled studies on oral-based HIV STKs compared to standard provider-administered blood-based tests.^{28,35,36} One study found offering free oral HIV STKs to truckers increased HIV testing when compared to offering standard provider-administered blood-based test.²⁸ Two other studies found sending reminders through text messaging announcing the availability of HIV STKs at all roadside clinics to truckers and female sex workers who were not testing for HIV regularly were more likely to be tested than reminded for standard provider-administered test.^{35,36}

Zambia

In Zambia, men, adolescents, serodiscordant couples, and key populations are less likely to receive frequent testing services and have been identified as among the target population for HIVST.³⁷ Despite the recognition of adolescents being an important key population, Zambia's age of independent consent for HIV testing is 16, slightly older than other selected countries (except for those considered emancipated, or engaged in behaviors that put them at risk of contracting HIV) (Table 3).³⁸

Limited innovations have been available in private health market service delivery for HIV STKs. Private enterprises and distributors of oral HIV self-test kits in Zambia have attempted to distribute kits through local private sector channels like pharmacies but reported procurement costs as a key barrier to entry and limited public awareness to drive demand. Orasure, the manufacturer of Oraquick tests, provides a subsidized cost for kits going into the public sector, but not for the private sector, and the private/public price differentials are as high as 60-75%.²⁰ Although the lack of subsidization is common for private for-profit sector, the high cost may be particularly limiting considering the lower median household income compared with other countries (Table 1).

South Africa

In the private non-profit sector, the STAR project in South Africa targeted MSM, transgender individuals, young women (18-25 years) and older men (30-49 years) through social media platforms (described above) in response to the national lockdown during the COVID-19 pandemic. The project also generated demand through digital marketing techniques using search engine optimization for specific keywords related to online behaviors of the key populations, as well as Google Banner advertising on dating applications. Clients were directed to a webpage for placing an order for HIV STK, with the

options of both oral-based and blood-based to be delivered. Registration is required to provide individuals' demographic data, consent for follow up, and an address for delivery.

Thailand

While it is important to identify and market to key segments of the population in order to increase testing rates, enormous stigma against those living with HIV in Thailand remains. The key informant from Thailand noted the need for generalized marketing to limit stigmatization to key populations.²³ However, the cost of purchasing HIV STKs remains an important barrier to increasing private for-profit market distribution. Additional marketing may position HIV STKs for the regular monitoring that is required for individuals taking pre-exposure prophylaxis.

In the private non-profit sector, two implementation research studies compared different service delivery models for MSM and transgender women: conventional offline HIV counseling and testing, online pre-test counseling and offline HIV testing, and completely online counseling and supervised HIV self-testing. The online testing initiative was designed for MSM and transgender individuals in Asia and has engaged more than 3 million website visitors since its launch. Offline services were provided through community centers supported by non-profit foundations. Online participants received HIV SKTs and an online HIV self-testing video, and real-time guidance was provided for HIVST through a video chatting platform if preferred by the participants. For all modalities, post-test counseling for those testing positive emphasized providing the resources necessary to link clients immediately confirmatory testing services. The two studies found the highest proportion of both first-time testers, and HIV prevalence, was in the completely online group, compared to other modalities.^{31,39}

TABLE 3: MINIMUM AGE REQUIREMENT FOR HIV TESTING IN THE FIVE COUNTRIES.

Country	Minimum age requirement for HIV testing without parental consent
Tanzania	15 years old
Kenya	15 years old (Directly assisted HIVST is especially recommended for the under 18 years who will require additional support and counseling)
Zambia	16 years old; except for those who are married, pregnant, parents, head of households, or engaged in behaviors that put them at risk of contracting HIV
South Africa	12 years old (Directly assisted HIV self-screening is recommended for adolescents from 12-17 years old)
Thailand	Unclear minimum age requirement (National guideline states that adolescents younger than 18 don't need parental consent) ⁴⁰

Support and Linkages to Care

How do countries support and link to care for those who screen positive using HIV self-testing methods?

World Health Organization

Section 3.1.2 Where can HIVST be implemented?

“Linkage to confirmatory testing and treatment following self-testing may be facilitated where HIVST kits are distributed and/or where HIVST is performed. HIVST also has the potential to link users to prevention services, for example linking key populations and other populations at high ongoing risk to PrEP.

Possible ways to increase linkage following self-testing include:

- *Referral/appointment cards*
- *Community outreach and follow-up*
- *Telephone calls, text messages or social media counseling messages and reminders*
- *Compensation or financial incentives”*

Tanzania

While the private for-profit sector has not been distributing HIV SKTs routinely, the Tanzania HIVST framework states that mechanisms should be in place to support those persons whose HIVST results are reactive to have their results confirmed, whether at the point of issuance or the nearest health facility. Those confirmed positive should then be linked to care and treatment, in line with the HIV testing service guidelines. For individuals who test HIV negative from HIVST, they should be encouraged to share the results with a health care provider to go through the routine HIV screening procedures and HIV testing if eligible.

Kenya

To support individuals for testing and minimize any potential for harm, the Kenya national HIVST operations manual describes an emergency management system to provide testing support and referral to additional support systems. The guideline suggests that information on referral services can be made available through referral directories at outlets or through internet geo-location of health facilities, as well as enquiries through helpline. Linkage approaches may include vouchers, coupons, or rebates or online audio or video counseling services. Instructions on follow-up action after a reactive HIVST may be provided by internet and mobile applications; telephone helpline where users can call for pre and post-test counseling and linkage to HIV testing services (HTS); mobile phone text message services to provide information, reminders, and linkage messages; or through public gathering.

In the private non-profit sector, PSI in Kenya worked with system developers to advance a WhatsApp chatbot to support HIV STK users through usage, counseling support, reporting of results, and next steps. The chatbot links users to confirmative testing and treatment if needed, while offering advice on when to perform a test again if the clients have a negative result. Clients are asked if they would like to receive a follow-up after testing. Clients are ensured that their data would remain anonymous throughout the process.⁴¹

Zambia

While the Zambian consolidated guidelines for treatment and prevention of HIV Infection described and emphasized the importance of timely linkage to care and follow-up and the need for a package of differentiated interventions to be offered, specific description on types of support and linkage for individuals tested with HIVST was not included.³⁸

In a study using discrete choice experiment to identify preferences for linkage to HIV care services following a reactive self-test under the STAR initiative, Zambian respondents illustrated a preference for phone call as the support for linkage to care, and deterring factors included user fee for HIV testing services and waiting time for HIV testing services for confirmation testing.²⁵

South Africa

The South Africa National HIV self-screening guideline states that all HIV STK should have adequate pre- and post-test information included in the product package for the user, including linkages for all possible outcomes. Additional support and linkage information can be provided through flyers, a national AIDS helpline (that individuals can use before, during, or after self-screening for psychosocial and/or technical support and referral), videos, trained HTS providers, mobile phone text message (SMS) services and/or smartphone applications to encourage linkage following HIVST. Additionally, in person support can be provided through community-based follow-up by peer and/or outreach workers, community health workers, as well as through couples and partner self-screening. For individuals who present to a trained HTS provider for confirmatory testing, counseling will be offered after a reactive self-screening test.²¹

The STAR Initiative (providing free HIV STKs to clients of retail pharmacies) provided supporting package and tools to all clients, including instructions for call-in line and WhatsApp for Business, HIVST app, as well as a link to an online counselor for individuals requiring additional psychosocial support.³⁰

Thailand

Thailand's basic health system allows for citizens to access essential health services, including antiretroviral therapy (ART). Individuals can connect with the public sector for services upon completion of HIVST. To facilitate linkage, an online-based system operated by the Thai Red Cross AIDS Research Centre (a non-profit organization) provides online referral to HIV treatment sites for ART initiation, through enabling online registration with the linked HIV treatment facility, sharing clients' HIV results and related health records to fast-track access to treatment providers.³⁹

Conclusion

This desk review compares the state of private market development for HIV STKs in Tanzania with that of Kenya, Zambia, South Africa, and Thailand. HIVST holds the potential to address many of the testing gaps present in countries' HIV monitoring systems by improving access for population segments with historically low rates of testing. Additionally, with high levels of perceived convenience, privacy, and quality, private health channels offer a compelling model for HIV STK distribution that can meet the consumer preferences of target and key populations. Private health markets, and self-testing, also present the additional benefit of being able free up capacity within an oftentimes overstretched public health system.

In three out of our five comparator countries – Kenya, South Africa, and Thailand – both oral and blood-based HIV STKs have been approved for private market sale. Additionally, in Kenya and South Africa, tests were found to be widely available throughout their networks of physical and online pharmacies. Kenya and South Africa have even gone so far as to make kits available in vending machines positioned in locations frequently visited by target populations. These achievements were not unplanned, but rather the result of policy actions whose goal was to foster the development of private market HIV STK sales.

Private sector HIV STK pricing remains a barrier to further market development in many countries. While many public sector health systems procure HIV STKs at heavily subsidized prices, private actors often purchase tests at unsubsidized rates, except when private sector channels were also considered in accessing subsidized HIV STKs.^{16,42} However, purchasing price of subsidized products includes markups from retailers, which maybe beyond the price point accessible by potential consumers. As mentioned earlier, private health system providers possess a number of perceived strengths relative to their public counterparts. It would be useful to conduct further market analyses, including geospatial and willingness-to-pay, that further identify regions that possess existing private market distribution channels, residents with the capacity and desire to use private market health services, and relatively high proportions of key population segments. Conducting such analyses would help to clarify where private markets might best contribute to increasing HIV STK distribution in Tanzania.

Although this desk review provides a summary of various aspects in private sector distribution in comparator countries, some important questions remain to be answered. While conducting this desk review, the authors were unable to locate resources that provided detailed explanations of how importers and government institutions monitor HIV STK sales through private markets, and strategies of government regulating importers. Among countries that have approved the use of both blood-based and oral-based HIV STKs, information on delivery channels was not always differentiated by type of products and few described specifications on waste disposal in addition to following manufacturer's instructions. Potential challenges that countries encountered in adopting blood-based HIV STKs also did not surface in the desk review. Additionally, information on training requirements for HIV STKs distribution was limited and was only found for Thailand. Last but not least, studies regarding the state of linkages to care offered to consumers who purchase HIV STKs through private for-profit channels were scarce. As the current report has restricted scope due to the nature of a desk review, conducting future key informant interviews may help to elucidate these issues.

References

1. SHOPS Project. *Tanzania Private Health Sector Assessment*. Abt Associates; 2013.
2. Measuring the Size of the Private Sector: Metrics and Recommendations. In: *Private Sector Landscape in Mixed Health Systems*. World Health Organization; 2020:Ch.3; 44-65. Accessed July 20, 2022. <https://www.who.int/publications-detail-redirect/9789240018303>
3. McPake B, Hanson K. Managing the public–private mix to achieve universal health coverage. *The Lancet*. 2016;388(10044):622-630. doi:10.1016/S0140-6736(16)00344-5
4. Hallo De Wolf A, Toebes B. Assessing Private Sector Involvement in Health Care and Universal Health Coverage in Light of the Right to Health. *Health Hum Rights*. 2016;18(2):79-92.
5. Fanelli S, Salvatore FP, De Pascale G, Faccilongo N. Insights for the future of health system partnerships in low- and middle-income countries: a systematic literature review. *BMC Health Serv Res*. 2020;20(1):571. doi:10.1186/s12913-020-05435-8
6. Weinberger M, Bellows N, Stover J. Estimating private sector out-of-pocket expenditures on family planning commodities in low-and-middle-income countries. *BMJ Glob Health*. 2021;6(4):e004635. doi:10.1136/bmjgh-2020-004635
7. Campbell OMR, Benova L, Macleod D, et al. Who, What, Where: an analysis of private sector family planning provision in 57 low- and middle-income countries. *Trop Med Int Health*. 2015;20(12):1639-1656. doi:10.1111/tmi.12597
8. UNAIDS. *Understanding Fast-Track: Accelerating Action to End the AID Epidemic by 2030*. UNAIDS; 2015. https://www.unaids.org/sites/default/files/media_asset/201506_JC2743_Understanding_FastTrack_en.pdf
9. Pai NP, Karellis A, Kim J, Peter T. Modern diagnostic technologies for HIV. *The Lancet HIV*. 2020;7(8):e574-e581. doi:10.1016/S2352-3018(20)30190-9
10. Liu J, Prach LM, Treleaven E, et al. The role of drug vendors in improving basic health-care services in Nigeria. *Bull World Health Organ*. 2016;94(4):267-275. doi:10.2471/BLT.15.154666
11. Bain LE, Dierickx K, Hens K. Ethical issues surrounding the provider initiated opt – Out prenatal HIV screening practice in Sub – Saharan Africa: a literature review. *BMC Medical Ethics*. 2015;16(1):73. doi:10.1186/s12910-015-0068-y
12. Olakunde BO, Adeyinka DA, Olakunde OA, et al. Correlates of antiretroviral coverage for prevention of mother-to-child transmission of HIV in sub-Saharan Africa. *AIDS Care*. 2019;31(10):1255-1260. doi:10.1080/09540121.2019.1587364
13. Awopegba OE, Kalu A, Ahinkorah BO, Seidu AA, Ajayi AI. Prenatal care coverage and correlates of HIV testing in sub-Saharan Africa: Insight from demographic and health surveys of 16 countries. *PLoS One*. 2020;15(11):e0242001. doi:10.1371/journal.pone.0242001
14. National AIDS Control Programme. *The Tanzania HIV Self-Testing Implementation Framework*. NACP; 2020.

15. Chiu C, Hunter LA, McCoy SI, Mfaume R, Njau P, Liu JX. Sales and pricing decisions for HIV self-test kits among local drug shops in Tanzania: a prospective cohort study. *BMC Health Services Research*. 2021;21(1):434. doi:10.1186/s12913-021-06432-1
16. Unitaid. Access to HIV self-tests significantly expanded and costs halved thanks to Unitaid agreement. Unitaid. Accessed August 11, 2022. <https://unitaid.org/news-blog/access-to-hiv-self-tests-significantly-expanded-and-costs-halved-thanks-to-unitaid-agreement/>
17. Khasewa J. HIV self-test kit sales in the Kenyan private market. Published online August 1, 2022.
18. USAID. *Quality Considerations of Zambian Wholesalers and Regulatory Authorities to Increase Availability and Access to Quality Maternal, Newborn, and Child Health Products in Zambia*. USAID; 2020.
19. Dacombe RJ, Watson V, Nyirenda L, et al. Regulation of HIV self-testing in Malawi, Zambia and Zimbabwe: a qualitative study with key stakeholders. *Journal of the International AIDS Society*. 2019;22:e25229.
20. USAID. *Zambia Private Health Sector Assessment: SRH & HIV - Final Report.*; 2019.
21. Republic of South Africa Department of Health. *National HIV Self Screening Guidelines: 2018.*; 2018. <https://www.knowledgehub.org.za/system/files/elibdownloads/2021-03/HIV%20SS%20Book.pdf>
22. Jeranji T. HIV Self-Testing: Will uptake in SA finally take off? Spotlight. Published June 4, 2021. Accessed August 4, 2022. <https://www.spotlightnsp.co.za/2021/06/04/hiv-self-testing-will-uptake-in-sa-finally-take-off/>
23. Benjarattanaporn P. Private Market Sales of HIV Self-Test Kits in Thailand. Published online August 2022.
24. LINKAGES Thailand. We are ready!: Willingness to pay and preferred delivery point of service for HIV self-testing kits among MSM and transgender women in Thailand. Presented at: June 2019; Hong Kong. https://pdf.usaid.gov/pdf_docs/PA00W86X.pdf
25. Metrics for Management. *A2IE Development Methodology*. Published 2022. Accessed August 5, 2022. <https://m4mgmt.org/development-methodology/>
26. Obita W, O'Hanlon B. *Frontier Health Markets (FHM) Engage: Landscape Assessment of Public and Private Sector Actors in Priority Health Markets and Assessment of Dialogue Platforms and Coordination Mechanisms to Steward Priority Health Markets*. USAID; 2022.
27. Kenya Ministry of Health, NASCOP. *The Kenya HIV Testing Services Guidelines*. Published online 2016. Accessed August 1, 2016. <https://www.nascop.or.ke/hiv-testing-services/>
28. Kelvin EA, George G, Mwai E, et al. Offering self-administered oral HIV testing to truck drivers in Kenya to increase testing: a randomized controlled trial. *AIDS Care*. 2017;30(1):47-55. doi:10.1080/09540121.2017.1360997
29. Adams S, Aylward P, Little K, et al. *Private Sector HIVSS Landscape*. PSI; 2018.
30. Bandio R. HIV Self-Testing Africa: Private Pharmacy Distribution. Presented at: 2022.

31. Phanuphak N, Anand T, Jantarapakde J, et al. What would you choose: Online or Offline or Mixed services? Feasibility of online HIV counselling and testing among Thai men who have sex with men and transgender women and factors associated with service uptake. *J Int AIDS Soc.* 2018;21(Suppl 5):e25118. doi:10.1002/jia2.25118
32. Thailand Ministry of Public Health. National Guideline on the HIV SelfScreening Test. Published online February 2021.
33. Pharmaceutical Society of Kenya. Conduct a Test. BeSure. Published 2022. <https://www.besure.co.ke/Home/>
34. PATH. Ensuring Continuation of Essential Dreams Services in Western Kenya During COVID-19. Published 2020. Accessed August 10, 2022. <https://www.path.org/resources/ensuring-continuation-essential-dreams-services-western-kenya-during-covid-19/>
35. Kelvin EA, George G, Kinyanjui S, et al. Announcing the availability of oral HIV self-test kits via text message to increase HIV testing among hard-to-reach truckers in Kenya: a randomized controlled trial. *BMC Public Health.* 2019;19:7. doi:10.1186/s12889-018-6345-1
36. Kelvin EA, George G, Mwai E, et al. A Randomized Controlled Trial to Increase HIV Testing Demand Among Female Sex Workers in Kenya Through Announcing the Availability of HIV Self-testing Via Text Message. *AIDS Behav.* 2019;23(1):116-125. doi:10.1007/s10461-018-2248-5
37. Zambia Ministry of Health. *Zambia Consolidated Guidelines for Treatment and Prevention of HIV Infection.* Zambia Ministry of Health; 2020. <http://www.nac.org.zm/sites/default/files/publications/Consolidated%20Guidelines%202020.pdf>
38. Zambia Ministry of Health. *HIV Testing Services: National Guidelines.* Zambia Ministry of Health; 2020. https://www.moh.gov.zm/?wpfb_dl=30
39. Anand T, Nitpolprasert C, Kerr SJ, et al. Implementation of an online HIV prevention and treatment cascade in Thai men who have sex with men and transgender women using Adam's Love Electronic Health Record system. *J Virus Erad.* 3(1):15-23.
40. Department of Disease Control, Ministry of Public Health. Thailand National Guidelines on HIV/AIDS Treatment and Prevention 2017. Published online 2017.
41. PSI. Ramping Up HIV Testing in the Era of COVID-19. Self-Care Trailblazer Group. Published May 6, 2020. Accessed August 1, 2022. <https://www.psi.org/project/self-care/ramping-up-hiv-testing-in-the-era-of-covid-19/>
42. World Health Organization. New US\$ 1 price for HIV self-tests. Accessed August 11, 2022. <https://www.who.int/news/item/27-07-2022-new-1-dollar-price-for-hiv-self-tests>

Annex I. Data available in this report

Topic areas	Tanzania	Kenya	Zambia	South Africa	Thailand
Registration and supply of HIV STKs					
Registration requirement	✓	✓	✓	✓	✓
Product availability in private sector	✓	✓	✓	✓	✓
Price of HIV STKs in private sector	NA	✓	✓	✓	✓
Distribution of HIV STKs in private sector					
Private service delivery channels involvement – for-profit	✓	✓	✓	✓	✓
Private service delivery channels involvement – non-profit		✓		✓	✓
Training requirement	✓				✓
Private sectors promote use of HIV STKs	✓	✓	✓	✓	✓
Deliverable modalities to reach target populations	✓	✓	✓	✓	✓
Support and linkage to care					
Guideline information on linkage to care	✓	✓	✓	✓	
Programmatic support for individuals screened HIV positive		✓	✓	✓	✓

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1275 New Jersey Ave. SE, Ste 200,
Washington, DC 20003