MALAWI: DISTRICT HEALTH SYSTEM STRENGTHENING AND QUALITY IMPROVEMENT FOR SERVICE DELIVERY

INNOVATIVE APPROACHES BOOST HIV TESTING RATES

TECHNICAL BRIEF
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Background

Malawi has a population of 18 million, with an adult HIV prevalence of 10.6%.[1] Zonal adult HIV prevalence among 15-64 year olds ranges from 15.6% to 18.2% and is concentrated in the south.[1] There are zonal variations in the prevalence of viral load suppression among people living with HIV (PLHIV), indicating geographic variations in the coverage of HIV testing and treatment services.[1] For example, Blantyre City has the highest estimates of adult HIV prevalence (18.2%) and lowest prevalence of viral load suppression (59.5%), indicating the need for accelerated response in this district.

While Malawi has made remarkable progress toward achieving the UNAIDS 90-90-90 goals, achieving the first goal remains a challenge.[2] The Malawi HIV program estimated Malawi's progress on achieving the 90-90-90 goals at 88-78-86 by June 2017.[3]

The huge disparities seen in HIV prevalence by age, sex, and geographic distribution make the provision of one-size-fits-all interventions inadequate. Instead, Malawi needs targeted methodologies that are proven to be effective in achieving epidemic control. Success is not possible if some groups, such as youth or men, are left behind.

In 2015, the National AIDS Commission led Malawi in refocusing the National Strategic Plan for HIV and AIDS around the 90-90-90 targets.[4] The national strategies to achieve the first 90—90% of PLHIV knowing their status—re-focused HIV testing services (HTS) to targeting high-yield settings, addressing negative social norms regarding HIV testing, generating service demand, and facilitating testing for key and vulnerable populations. The strategies also include enhanced targeting of HIV testing geographically; boosting provider-initiated testing and counseling (PITC); referring families for testing and nutrition screening; referring adults and children to clinical services/HTS; and increasing demand for HTS.

As there was no evidence base for implementing this model in Malawi, examples from across Africa were used, including

THE DISTRICT HEALTH SYSTEM STRENGTHENING AND QUALITY IMPROVEMENT FOR SERVICE DELIVERY (DHSS) PROJECT (2012-2018) supported the Government of Malawi in implementing the National Strategic Plan for HIV and AIDS in line with the Country Operational Plan and supported implementation of the Health Sector Strategic Plan through the project's work in seven districts of Malawi: Nkhata Bay, Likoma, Blantyre, Chiradzulu, Thyolo, Mwanza, and Neno.

Funded by the President's Emergency Plan for AIDS Relief (PEPFAR) through the US Centers for Disease Control and Prevention (CDC) and implemented by Management Sciences for Health (MSH), DHSS contributed to Malawi's goal to become a healthy and prosperous nation free from HIV and AIDS. The project focused on district strengthening and key populations, using targeted evaluation, and providing technical support to the Ministry of Health. The main objective of DHSS was to improve quality, access, and coverage of priority HIV-related health services at priority sites in the seven districts by: identifying 90% of people living with HIV (PLHIV); initiating and retaining on antiretroviral therapy (ART) 90% of PLHIV identified; and achieving 90% viral suppression for ART patients.

models showing that community testing, mobile testing, self-testing, and outreach to key populations are successful strategies.[5] Based on evidence from other countries and taking into account the limitations of Malawi's over-stretched health system, the District Health System Strengthening and Quality Improvement for Service Delivery (DHSS) Project introduced several initiatives to improve HIV testing coverage and maximize the yield of new HIV-positive diagnoses to accelerate progress toward the first 90. This technical brief describes the interventions implemented by DHSS to maximize HIV case identification.

Interventions

To increase the number of people tested for HIV and knowing their status, DHSS developed and supported these strategies:

- **Recruited and deployed 190 HIV diagnostic assistants (HDAs) whose primary role in health facilities is to provide HTS.** HDAs are para-professional cadres trained on provision of HTS using the national curriculum. Prior to this, HTS was offered only by trained nurses and health surveillance assistants (community health workers) who had other responsibilities at the facilities and in the communities. This meant there were frequent shortages of staff to provide HTS and meet demand. HDAs provide health talks and HTS at each of the facilities. This was part of a task-shifting policy to address the shortage of health workers for which DHSS played a key role in advocacy.
- **Intensified PITC at high-yield service delivery points, such as clinics for antenatal care, tuberculosis, sexually transmitted infections, inpatient care, and outpatient care.** Yield analysis was conducted during monthly review meetings, enabling the project to prioritize and tailor interventions to specific service delivery points. To aid in prioritizing interventions, the Plan-Do-Study-Act quality-improvement methodology was applied, where health facility workers were trained and quality-improvement (QI) teams were formed in each facility.[6] These QI teams supported the implementation of different strategies and prioritizing activities. For example, the QI teams ensured HIV-exposed infants were paired with their mothers at maternity and postnatal care wards so the mother was more likely to bring the infant back at six weeks of age for virological testing. Synchronizing the mother's antiretroviral therapy (ART) appointment with the baby's HIV-exposed infant management appointment increases the number of exposed infants who are tested and linked to care.
- **Targeted community-based outreach testing at hotspots, centers for orphans and vulnerable children (OVC), prisons, and workplaces, as well as moonlight testing.** DHSS mapped the districts to identify key hotspots, such as areas where men were more likely to gather, and OVC centers, in order to reach men and their partners and children. From this mapping exercise, the team identified a list of hotspots and OVC centers and supported mobile HTS. Mobile HTS was implemented four times a week at key hotspots, OVC centers, and workplaces, and twice a week as moonlight testing around locations such as bars and busy markets where men congregate. An ART provider, nurse, and two counselors used a van to provide services. HIV-infected clients received a one-month supply of ART on the same day as testing and were requested to report to the ART clinic within two weeks for further counseling and support.
- **Index case contact testing.** To increase the yield of HIV-infected individuals, the project introduced index case contact testing in 90 facilities through the provision of family referral slips (FRS) and the establishment of family testing days (FTDs). All clients accessing HTS and those registered at the ART clinic received an FRS, which is a note to the spouse or sexual partner and family members of the index client inviting them to come to the clinic for HTS within two weeks. FTDs were also established in each facility, where clients who were already registered at the HIV clinic or those newly tested as HIV infected were asked to bring their spouses, sexual partners, and children under the age of 12 for HTS. FTDs were typically conducted on Saturdays from 8.30 a.m. – 1.30 p.m., though a few facilities had FTDs on weekdays. During FTDs, services were provided by using the standard Ministry of Health HTS registers. On weekdays, clients who tested HIV infected received same-day pre-ART counseling and were initiated on ART. Clients who tested HIV infected on the weekend were asked to return the following Monday for pre-ART initiation counseling and treatment.

FRS and FTD mobilization was done by expert clients, HDAs, and other HTS providers who conducted motivational talks on the importance of partner testing during ART clinic days and at all testing points. Psychosocial support groups within the catchment area of each facility also conducted mobilization. In this case, peers within the groups encouraged members to ask their spouses and sexual partners to go to the facility for HTS. In some instances, the groups organized index case testing in the community after mobilizing members. No additional tools were used during this intervention, apart from the standard operating procedures, the HTS job aides, and the standard Ministry of Health HTS register. Data were collected routinely for program monitoring and reporting. The project conducted trend and comparative analysis over time to assess efficacy of the interventions.

Results

Overall, the introduction of these interventions increased the number of people accessing HTS quarterly by 120%, from 66,977 (October – December 2014) to 146,894 (July – September 2017) (Figure 1). The most significant increase was noted after the introduction of HDAs in June 2015.

The introduction of interventions aimed at intensifying case finding resulted in an increased number of people newly identified as HIV infected by 24% (October 2014 – September 2016) and by 21% (October 2016 – September 2017) (Figure 2). The results also showed an overall trend of declining HIV positivity rates, which is mainly due to the wide implementation of Option B+ and treatment coverage in the general population. The declining rates make it even more challenging to identify the remaining cases within the districts.

From the different initiatives implemented, DHSS observed differences in the reach of the interventions to improve case finding. Most people were tested through PITC, followed by index case testing, with the least number of people reached with testing through prisons (Figure 3).

In order to prioritize the interventions further, DHSS conducted a comparative analysis of HIV positivity rates across testing methods (Figure 4). Index case testing had the highest HIV yield (22%) and the outreach and OVC testing interventions had the lowest (1%).

Lessons Learned

- Overall, the range of interventions introduced by DHSS dramatically increased the number of PLHIV that were tested and knew their status.
- The introduction of HDAs allowed for the deployment of new testing initiatives and resulted in doubling the number of people accessing HTS. The strategy of using lay cadres such as HDAs is a pragmatic response to health workforce shortages. It aimed to increase the effectiveness and efficiency of all available personnel in order to serve more people. DHSS increased the number of HIV testing points and the number of people accessing HTS after deploying HDAs.

Figure 1: Number of people receiving HTS at DHSS-supported facilities

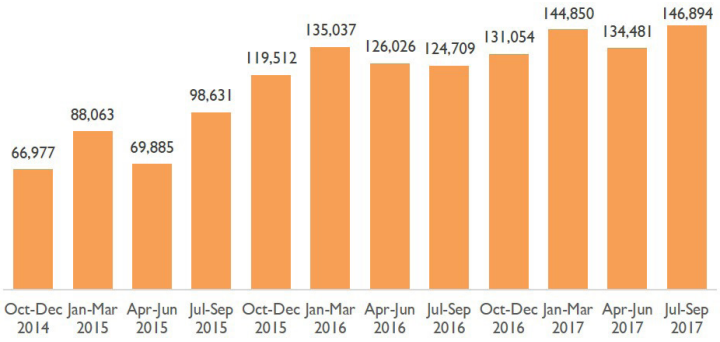

Figure 2: Number of people newly identified as HIV infected

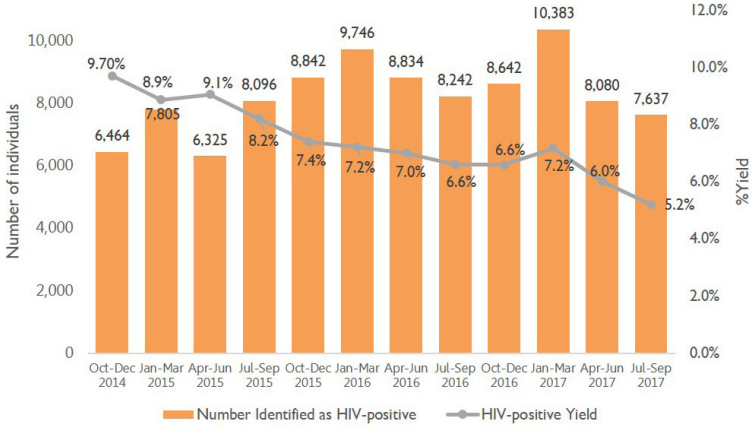

Figure 3: Number of people tested through different interventions

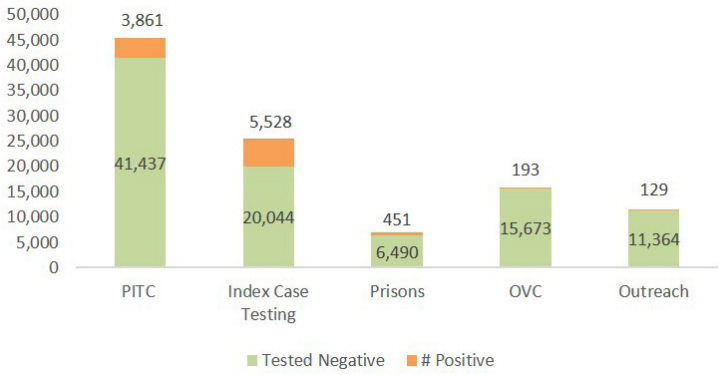

Figure 4: HIV-positivity rates for the different interventions

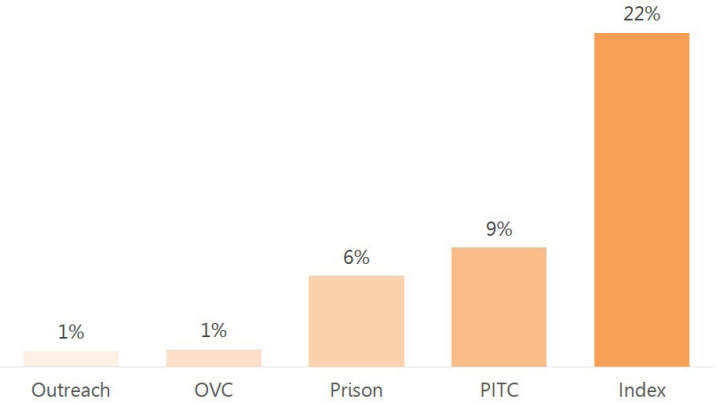

Photo by Cindy Shiner

- Among the five interventions, index case testing was most successful in improving case identification. The index testing HIV yield was 22% and significantly higher than those of PITC (9%), prison (6%), OVC (1%), and outreach (1%). The focus on testing sexual partners and children of those on ART or newly tested HIV infected is the strength of index case testing. The approach requires limited resources compared to outreach services as it is facility-based, and the dedicated FTDs allowed for testing saturation for any case identified.
- While PITC interventions had a lower yield (9%) than index case testing, the approach proved to be effective in reaching an increased number of individuals who were HIV infected. The outreach and OVC methods had the lowest volume tested and yield produced.
- Results affirm that, as Malawi progresses toward reaching the first 90 target, with focused interventions like index case testing and testing key populations, those attending health services and those at risk are more likely to identify HIV-infected individuals than testing in the general population or community.

Conclusions

To reach the remaining PLHIV who are unaware of their status, client-centered, scalable, efficient, and effective testing modalities are needed. Maximizing index case testing, which has shown a high diagnostic yield among all age groups and is facility-based and hence likely to be cost-effective, has shown to be a key strategy for improving case identification in Malawi.

Index case testing is a smart way to achieve HTS saturation as it uses the transmission tree principle. However, at present, some factors affect optimization of the strategy. The policy in Malawi limits index case testing to those individuals who were approached by the index case (also known as passive contact tracing). The management tools do not adequately capture the link between the index case and the referred individual, and access to HTS may be limited to some family members or contacts of the index case. These limitations can be overcome by enacting policies that allow active contact tracing and using tracking information.

PITC has also shown high diagnostic yield and, like index case testing, the strategy is facility-based. A limitation of the PITC approach is reliability of overburdened nurses and clinicians to screen and initiate HIV testing; refining PITC screening tools for lay cadres is one option for overcoming this challenge.

In conclusion, the combination of strengthened and scaled up index case testing and PITC can fast-track progress toward achieving the first 90 target in Malawi as the country moves toward epidemic control.

This summary brief was prepared by Aziz Abdallah, Sarah Birse, and Elke Konings.

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6. Developing a plan to test a particular change (Plan), carrying out the test (Do), observing and learning from the results (Study), and determining what modifications should be made to the test (Act).

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