



AIMING FOR THE THREE 90s: STRENGTHENING MALAWI'S RESPONSE TO HIV AND AIDS

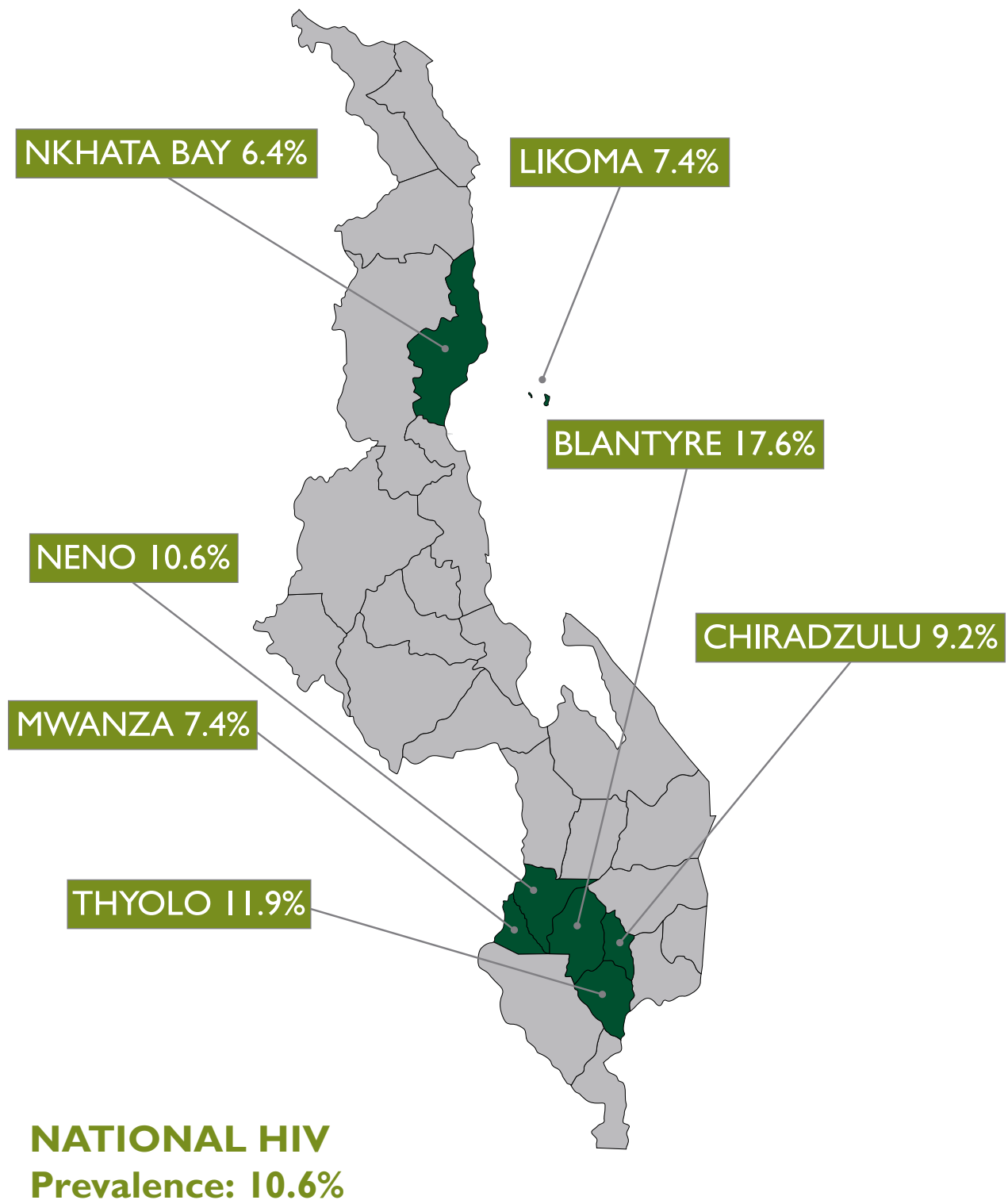


The District Health System Strengthening
and Quality Improvement for Service Delivery (DHSS) Project

2012–2018



FIGURE I. HIV PREVALENCE IN EACH OF THE SEVEN DISTRICTS SUPPORTED BY DHSS IN MALAWI



*District Source: National Statistical Office and ICF. Malawi Demographic Health Survey 2015-16.
National Source: Population Reference Bureau (2016). World Population Data Sheet. ICAP 2016. Malawi Population-based HIV Impact Assessment (MPHIA) 2015-2016. Summary sheet: preliminary findings, December 2016.*

Cover Photo: Moving Minds Multimedia

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OVERVIEW



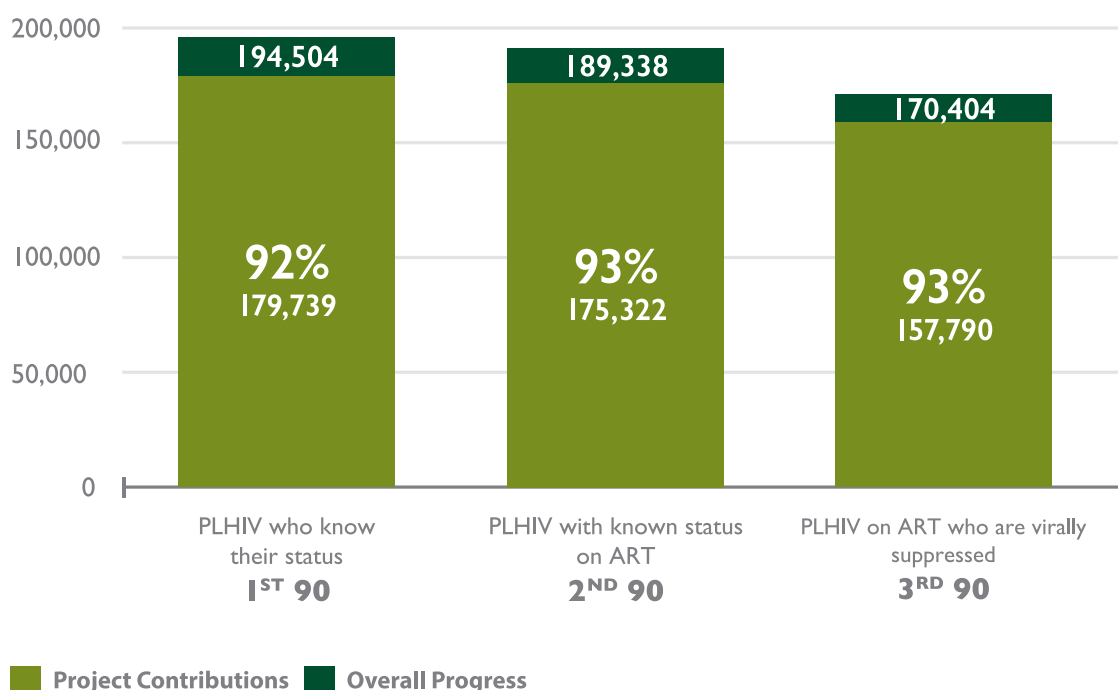
Malawi, a landlocked Southern African country, has made dramatic health gains over the past 20 years despite being one of the world's poorest nations. With substantial support from its international partners, the country achieved Millennium Development Goal 4 to reduce by two-thirds, between 1990 and 2015, the under-five child mortality rate. The nation reduced maternal mortality by nearly 50% between 1990 and 2013, and the contraceptive prevalence rate for married women increased from 7.4% in 1992 to 58.6% in 2010.¹ Additionally, the rate of new HIV infections fell by more than half between 2004 and 2014. But with two-thirds of Malawi's population under the age of 25 and a total fertility rate of 4.4, the population is forecast to double to 35 million by 2040 and demands on the health care system will be that much greater.²

There are more than one million Malawians (HIV prevalence of 10.6%) living with HIV.³ Nearly 85% of people live in rural or hard-to-reach areas of the country and the sparsely located health facilities are unable to meet their needs. Malawi's health system is overburdened and lacks adequate space and a sufficient number of staff to provide quality HIV services, contributing to poor adherence to life-saving antiretroviral therapy (ART) and retention in care. With the rollout of the President's Emergency Plan for AIDS Relief (PEPFAR) 3.0 in 2014, HIV programming shifted toward achieving sustainable control of the HIV epidemic and reaching the Joint United Nations Programme on HIV/AIDS (UNAIDS) global 90-90-90 targets: 90% of people living with HIV (PLHIV) diagnosed, 90% of diagnosed PLHIV on ART, and 90% of PLHIV currently on ART virally suppressed.⁴

This ambitious pivot came in the second year of the District Health System Strengthening and Quality Improvement for Service Delivery (DHSS) Project, which partnered with the Government of Malawi to implement this new 90-90-90 strategy. The project, funded by PEPFAR through the US Centers for Disease Control and Prevention (CDC) and led by Management Sciences for Health (MSH), began working in 2012 to strengthen health service delivery in seven of Malawi's 28 districts. Through improving the quality of service delivery and supporting the Ministry of Health to evaluate and improve national HIV programming, DHSS made a number of notable achievements in its five years of operation. The project served 14% of Malawi's population, or about 2.4 million people, of whom 11% (270,000) were estimated to be infected with HIV in September 2017.^{4,5}

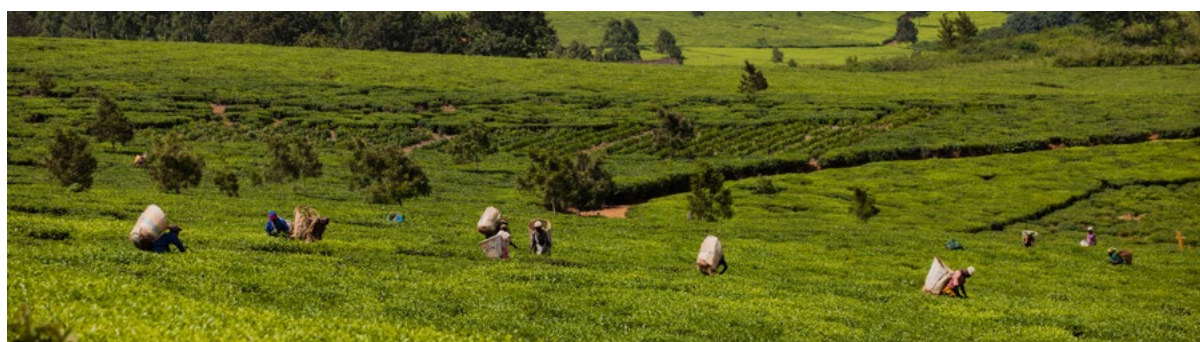
KEY RESULTS

FIGURE 2. PROJECT CONTRIBUTION TO 90-90-90 PROGRESS IN SEVEN DISTRICTS



Malawi is making strides toward the 90-90-90 targets, though achieving the first 90 remains a challenge. The great impact of the project's interventions toward this progress can be seen in Figure 2. In the target districts, DHSS contributed 92% or more of each achievement while supporting only 72% of the ART clinics (Figure 2). One in four Malawians living with HIV resides in the project's target districts, yet almost a third of them do not know they are infected and can unknowingly transmit the virus to their sexual partners or to their children

in pregnancy. By the end of September 2017, a total of 194,504 PLHIV knew their HIV status, of which 92% (179,739) were provided services at project-supported facilities. Of the 189,338 clients on ART in the seven DHSS districts in 2017, 93% (175,322) received services at the project-supported facilities, a sharp increase from 61% in 2012. Project-supported facilities contributed to 93% (157,790) of individuals virally suppressed in the district, increasing their chances of staying healthy, living longer, and reducing the possibility of infecting someone else.



WORKING TOWARD THE 90-90-90 TARGETS

FIRST90

By 2020, 90% of all people living with HIV will know their HIV status

INDEX CASE TESTING CHANGES A FAMILY'S COURSE

Grace Mathunda often used to fall ill. Her second child also was unwell and became so weak that he stopped going to school. So when Mathunda, 32, became pregnant again she went to a health center in Blantyre and was tested for HIV. The result was positive.

Due to Malawi's policy of Test and Start, which was rolled out by the Ministry of Health in 2016, Mathunda was put on ART and enrolled in the Prevention of Mother-to-Child Transmission program which resulted in her third child being born HIV negative.

To increase the number of people tested for HIV, the DHSS Project developed and supported a package of case-finding strategies, including index case testing. With this strategy, the first family member identified as HIV infected (index case) is given a family referral slip for other members of the family to be tested.

When Mathunda heard about family testing days she decided that her other two children and husband should find out their status as well. Her second son tested positive and her first child and her husband were negative. Mathunda's HIV-infected son was started on ART.

As a result of testing, life has changed considerably for Mathunda and her family. She said her husband is supportive and shows more care than before, and she and her children are healthy.

"My second-born child is now stable and able to attend school," she said. "We are a happy family now and able to fend for ourselves. We enrolled him in the Teen Club [for HIV-infected adolescents] at the health center where he is supported by his friends, and they encourage each other to live a positive and productive life."

Of the 194,504 PLHIV living in the seven DHSS districts who knew their status, 92% (179,739) learned their HIV status through testing at the 95 project-supported facilities through a combination of the following approaches:

FIGURE 3. HIV YIELD BY TESTING APPROACH (SEPTEMBER 2016 TO SEPTEMBER 2017)

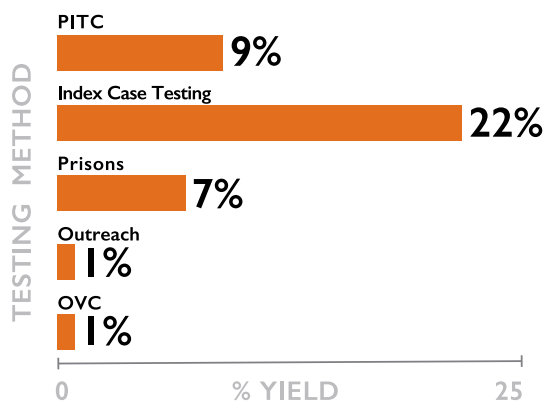
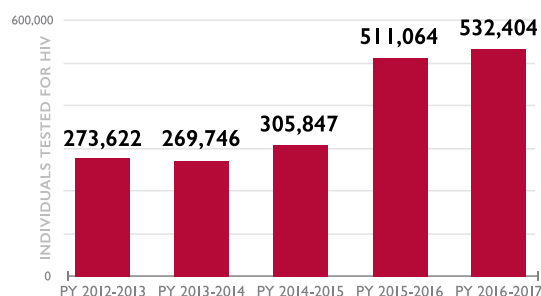


FIGURE 4. INDIVIDUALS TESTED FOR HIV (2012 - 2017)



A HEALTH DIAGNOSTIC ASSISTANT TESTS A CLIENT FOR HIV



Photo: Moving Minds Multimedia

Intensified provider-initiated testing and counseling (PITC) at high-yield service delivery points, including clinics for antenatal care (ANC), tuberculosis (TB), sexually transmitted infections, and in/outpatient care. The yield achieved through PITC was 9%.⁶

Integration of prevention of mother-to-child transmission services into ANC, including universal HIV testing for pregnant women. Through this method of PITC, the number of pregnant women receiving confirmation of their HIV status in project-supported facilities increased from 84% in 2012 to 99% in 2017.

Early infant diagnosis, using DNA/PCR testing of babies of HIV-infected mothers at 2 months of age and rapid antibody testing at 12 and 24 months, with direct enrollment into ART for those who are HIV infected. The project introduced HIV-exposed infant (HEI) registration at delivery instead of referring the mother and her baby to the HIV clinic. Mothers and infants were paired for follow-up visits. By registering the exposed infants immediately at birth and synchronizing the mother's appointments for ART with the baby's HEI management schedule, this mother-infant pair approach increased the number of HEIs remaining in the system and getting tested. Testing by 2 months improved from 11% in April 2012 to 71% by September 2017 and testing by 12 months improved from 15% to 73% in the same period.

Index case contact testing through use of family referral slips to increase case identification through family testing days. Providers used these slips to identify the spouse and/or sexual partners and family members of the clients for testing. Family testing days occurred on Saturdays for convenience and included HIV testing services (HTS) and motivational talks on the importance of partner testing. This approach produced a yield of 22%.

Targeted community-based testing through mobile HTS at key hotspots, including prisons (7% yield), centers for orphans and vulnerable children (1% yield), and outreach programs (1% yield) (Figure 3). Evening, or moonlight, outreach was supported at bars, markets, and other places where men congregate.

Recruitment of 190 para-professional health diagnostic assistants (HDAs) for provision of HTS in health facilities to meet increasing demand. This helped to address a shortage of trained nurses and health surveillance assistants (HSAs), Malawi's cadre of community health workers.

WORKING TOWARD THE 90-90-90 TARGETS

SECOND90

By 2020, 90% of all people diagnosed with HIV infection will receive sustained antiretroviral therapy

EXPERT CLIENTS SERVE AS POSITIVE ROLE MODELS FOR NEW PATIENTS

When Chrissy Lupande's first husband fell ill and died, she suspected that the cause was AIDS. But he had not been tested for HIV and neither had she. Later, she remarried and became pregnant. When she went for ANC she was tested for HIV and the result was positive.

She carefully followed instructions to take antiretrovirals regularly and the baby was born HIV negative. Her other two children are free of the virus as well. Although her husband also tested negative, he left her after learning of her status.

As a positive role model in the fight against HIV, Lupande, 36, began working as a volunteer at Chimaliro Health Center in Thyolo District in 2008. Eight years later, DHSS trained her to become an expert client and provided a small monthly allowance.

She was one of 239 expert clients trained and supported by the project to ensure that people identified as HIV infected were linked into care and continued ART. Expert clients have openly disclosed their HIV status, serve as models for ART adherence, and provide psychosocial support.

"I don't see any problem that I should be ashamed of my status," Lupande said. "I am able to fend for my children and I live a happy, healthy life." Lupande supports herself and her children by doing small-scale business and farming.

She said being open about her status has been her greatest weapon in fighting stigma and discrimination. She is well known at the health facility where she works and people appreciate her positive attitude.

"I always smile to my clients," she said. "They have to feel welcomed when they come here."

As of September 2017, of the 179,739 known PLHIV in the 95 project-supported facilities who knew their status, 98% (175,322) were on treatment (Figures 5 and 6). This impressive result was achieved through implementation of the following interventions:

FIGURE 5. SECOND 90 PROJECT ACHIEVEMENT

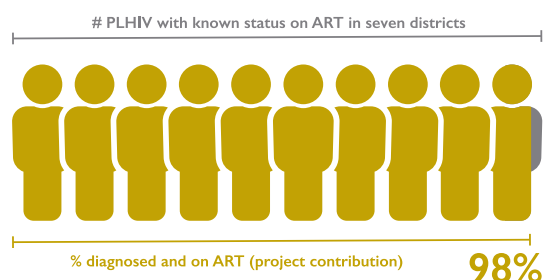


FIGURE 6. FIRST-TIME ART INITIATION

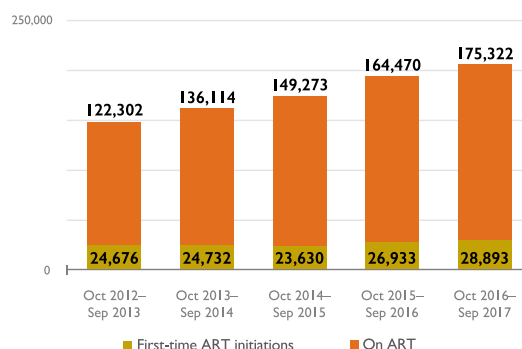


FIGURE 7. OPTION B+ SUCCESS

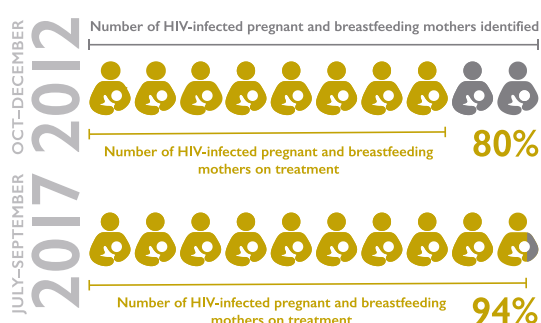
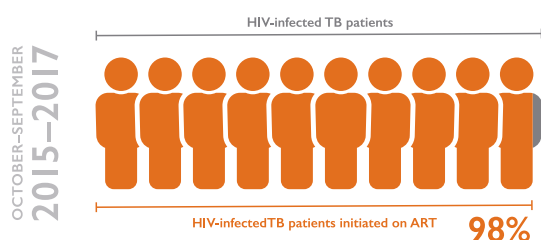


FIGURE 8. TB/ART INTEGRATION



Training and support of 239 expert clients to ensure that people identified as HIV infected were linked into care, received adherence counseling, and were tracked if they missed appointments. Expert clients are HIV infected themselves, enrolled at a health facility, adherent to treatment, have disclosed their status to the community, and motivate others as models for ART adherence. As such, expert clients alleviated already burdened health providers and offered psychosocial comfort that regular clinicians could not provide to newly diagnosed clients.

Implementation of Option B+, a strategy that Malawi kicked off in 2011 to start HIV-infected pregnant and breastfeeding women immediately on ART regardless of their CD4 count.⁷ At project-supported health facilities, the proportion of HIV-infected pregnant women on ART was 94% (2,467 of 2,616) in 2017, up from 80% (2,112 of 2,632) at the end of 2012 (Figure 7). However, follow-up of infants and initiation of infected babies on treatment was still lagging. Because of the synchronized appointment schedule, the project's mother-infant-pair approach (described under the First 90) increased the number of infected babies started and remaining on treatment from 67% (372/558) in 2012 to 79% (368/464) in 2017.

Same-day ART initiation to increase linkage to care through implementation of Test and Start, a Ministry of Health policy rolled out in 2016. Through this strategy, clients were initiated on ART immediately—if they were ready—or as soon as possible after diagnosis of HIV infection.

TB/HIV integration in the 95 project-supported health facilities to ensure that the proportion of newly identified HIV-infected TB patients started on ART remained high (Figure 8).

WORKING TOWARD THE 90-90-90 TARGETS

THIRD90

By 2020, 90% of all people receiving antiretroviral therapy will have viral suppression

TEEN CLUBS HELP RETAIN ADOLESCENTS IN CARE

At the age of 15, after repeatedly getting sick and missing school, Mercy Banda was tested for HIV. The outcome confirmed her worst fears.

"I cried when I was told that I was HIV infected," she said. "I did not think I could live with the virus."

It was a difficult diagnosis to accept as an adolescent. Mercy believed she was born with the virus because her parents had died when she was young. She lives with her older sister and is not aware of any other family member having HIV. Despite her diagnosis, Mercy did not want to begin ART.

Meanwhile, Gift Chitukula, an HDA at Makhetha Clinic in Blantyre District where Mercy was diagnosed, visited the teen regularly to encourage her to start treatment. Chitukula was one of 190 HDAs recruited by the DHSS Project to provide HTS in project-supported health facilities.

Despite Chitukula's visits, Mercy resisted treatment. It wasn't until February the following year that she agreed to begin ART.

That same month she joined the teen club at the clinic. DHSS created and supported 24 teen clubs in five districts to help retain adolescents in care. Mercy said that being with other HIV-infected teens made her feel less isolated and more supported. The teen club gave her a more positive outlook.

Now that she is on ART and healthy she no longer misses school and dreams of further study to become a nurse.

"I work hard in class to achieve my dreams," she said. "Last term I came eighth out of 65 students. I have benefitted a lot from the teen club as we encourage each other to work hard in school and also find time to play to keep healthy."

Of the 48,756 ART patients eligible for and receiving a viral load test in the seven project districts, 90% (43,867) were virally suppressed (Figure 9). To achieve viral suppression, DHSS both promoted adherence to ART and increased coverage of viral load testing services through the following interventions:

FIGURE 9. THIRD 90 PROJECT ACHIEVEMENTS

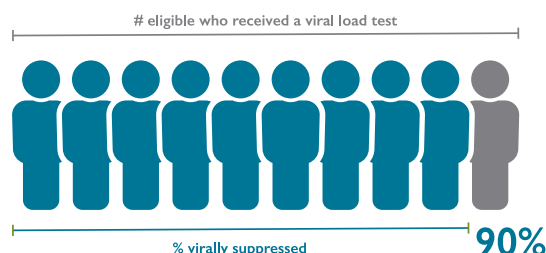


FIGURE 10. TEEN CLUB SUCCESS IN BLANTYRE AND THYOLO (2015 – 2017)

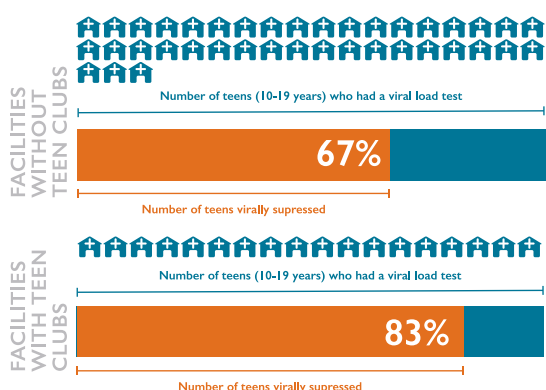
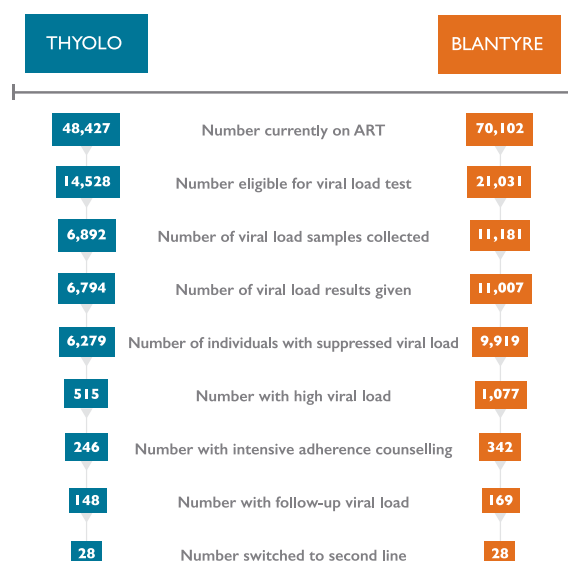


FIGURE 11. VIRAL LOAD TESTING CASCADE FOR FACILITIES IN BLANTYRE AND THYOLO DISTRICTS



Support for implementation of viral load

monitoring registers to document routine viral load, high viral load, and progress on adherence counseling. These registers facilitated a higher quality of patient monitoring and follow-up, as well as defaulter tracking.

Defaulter tracking to ensure continued treatment and support. All clients with a high viral load were prioritized, tracked, and brought back to the clinic by expert clients and HSAs for intensive adherence counseling. Viral load coverage improved from 40% (39,563 of 98,682) to 46% (48,756 of 105,193) between September 2015 and September 2016, with viral suppression improved from 88% (34,996 of 39,563) to 90% (43,867 of 48,756) during the same period.

Creation and support of teen clubs to provide differentiated care and adherence support for adolescents in 24 facilities in Nkhata Bay, Mwanza, Likoma, Blantyre, and Thyolo districts. Data were collected at 18 of the 24 teen clubs, serving 1,646 adolescents, all in Blantyre and Thyolo. More HIV-infected teens remained in care, and viral suppression was achieved among 83% (822 of 991) of the teen club members compared to 67% (827 of 1,241) of teens on ART at a health facility without a teen club (Figure 10).

Mentorship and targeted provider orientations of staff at the 95 project-supported health facilities on how to conduct viral load tests and monitor the outcomes, and on the appropriate collection, storage, and packaging of viral load samples.

Viral load testing cascade supported in health facilities in Thyolo and Blantyre districts (Figure 11). In Thyolo, a total of 6,892 clients had a viral load test, 92% of which achieved viral suppression, while in Blantyre a total of 11,181 clients had a viral load test, with 90% achieving viral suppression.

HEALTH SYSTEM STRENGTHENING

STRENGTHENING HEALTH SYSTEMS TO IMPROVE SERVICE DELIVERY

CERVICAL CANCER SCREENING SAVES LIVES

Fanny Gondwe, 32, bears testimony to the positive impact that cervical cancer screening and treatment have had on the lives of women who seek care at health facilities that carry out the procedures.

Most facilities in Thyolo District had no cryotherapy machines—used to treat cervical cancer by freezing cancerous lesions. If women tested positive for cervical cancer they had to seek treatment 50 km away at Queen Elizabeth Central Hospital in Blantyre. But most women could not afford to travel to Blantyre for treatment and Queen Elizabeth Central Hospital already had an enormous caseload, requiring long waits. These factors discouraged women from seeking treatment, putting their lives at risk.

Realizing the difficulties women faced in accessing cervical cancer screening and treatment, the DHSS Project procured five cryotherapy machines, one for each district hospital supported by the project: Thyolo, Chiradzulu, Mwanza, and Neno, as well as Ndirande health center in Blantyre. The project also trained health care workers in visual inspection with acetic acid, an inexpensive way to screen for cervical cancer in low-income settings. DHSS also trained the health care workers how to use the cryotherapy machines.

Gondwe, a mother of two, is thankful that she was screened and treated in Thyolo.

“I was encouraged by my grandmother after realizing that my mother had died of [cervical cancer] just like her sister,” Gondwe said. “I had to break the circle and went for testing. I knew I would be treated right there at Thyolo District Hospital.”

The project strengthened the health system at the facility level with a focus on infrastructure, equipment, management of health information, and human resources for health.

INFRASTRUCTURE

Renovations to improve access to and quality of services. Forty-nine facilities received upgrades to create functional ART and HTS rooms. Containers were customized into extra rooms in six facilities in Blantyre and Thyolo to increase space for HTS. Incinerators were installed for waste management and infection prevention at 13 high-need health facilities. Other renovations, including fixing doors and windows and room partitioning to improve patient flow and privacy, were carried out at supported health facilities.

The Umodzi ART clinic at Queen Elizabeth Central Hospital in Blantyre underwent significant renovation. DHSS finalized major renovation of the building and provided furniture and medical equipment. The improvements made to Umodzi Clinic are an important contribution to increasing the number of individuals tested, and started and retained on treatment in Blantyre.

EQUIPMENT

To improve defaulter tracking and supply chain management, the project procured 10 motorbikes for high-burden and hard-to-reach facilities in Nkhata Bay and Blantyre districts.

To improve communications within and between districts and the national level, the project provided two computers, one printer, and Internet services to the district health office in each of the seven supported districts. In addition, DHSS equipped high-burden health facilities with mobile phones in Blantyre (26), Chiradzulu (12), Thyolo (24), Nkhata Bay (9), Neno (9), and Mwanza (3) districts.

To enable effective delivery of services, the project provided medical equipment to facilities. Equipment included sterilizers, stethoscopes, thermometers, oxygen concentrators, blood pressure machines, caesarian section sets, and fetoscopes. In addition, DHSS supported **cervical cancer screening** at five facilities in Chiradzulu, Thyolo, Blantyre, Mwanza, and Neno districts through the procurement of cryotherapy machines and other equipment and technical support, including training of clinicians. Between 2015 and 2017, a total of 5,027 women were screened for cervical cancer, of which 159 tested positive through visual inspection with acetic acid and 80 received cryotherapy treatment.⁸

HEALTH MANAGEMENT INFORMATION SYSTEM

Facility data reviews by clinical mentors were supported in all 95 facilities, including performance reviews of all facilities and development of **mentorship** and **action plans**.

HUMAN RESOURCES FOR HEALTH

Throughout the life of the project, efforts were made to mitigate staff shortages and increase the capacity of trained providers in clinics and health facilities. One method was to promote **task shifting to expert clients and HDAs** in order to extend psychosocial support to clients that otherwise could not be provided by overburdened clinicians. The project recruited and deployed 239 expert clients and 190 HDAs. Additionally, 676 HDAs and HSAs were trained on dried blood spot and viral load sample collection. DHSS also provided support for **in-service training of health care workers**, through which 1,775 providers learned about the revised ART, TB, and prevention of mother-to-child transmission guidelines.

The DHSS project financed a **training and bonding program** for promising young nurse midwife technician or medical assistant students to complete clinical training at Malawian institutions. Students were bonded before initiating the training through a contract committing them to work at rural health facilities near their homes for three years following completion of their education. The project trained 87 students to become nurses and medical assistants to provide relief duties in hard-to-reach areas.

Through **supportive supervision and mentorship visits** to health facilities at least once per week, HTS supervisors supported HDAs and HSAs, and clinical mentors supported ART providers. Additionally, the project trained district coordinators to conduct integrated HIV supervision to all facilities every quarter and participated in Ministry of Health Department of HIV and AIDS quarterly supervision visits.

CONCLUSION AND WAY FORWARD



CERVICAL CANCER SCREENING AT THYOLO DISTRICT HOSPITAL

Malawi has come a long way in the fight against HIV—but much work remains to be done to achieve the First 90 goal as the country moves toward epidemic control. The experience of the DHSS Project has shown that a few key interventions can make an enormous difference.

FIRST 90

Compared to outreach testing, the highest yield came from targeted PITC and index case contact testing—results that strongly support prioritizing investments in these two interventions. Voluntary active partner notification services should be considered in Malawi, as it has proven to be very successful in other countries. Voluntary active partner notification refers to when consenting HIV-infected clients are assisted by a trained provider to disclose their status or to anonymously notify their sexual and/or drug injecting partner(s) of their potential exposure to HIV infection. The provider then offers HIV testing to these partner(s). Assisted partner notification is done using contract referral, provider referral, or dual referral approaches.

The introduction of lay counselors such as HDAs and expert clients helped to alleviate some of the medical staff shortages that plague many of the health facilities in Malawi, allowing professional cadres, such as nurses and clinicians, to focus more on clinical management. As a result, more clients can be reached. The Ministry of Health and health facilities will need to support, train, and deploy more of these types of lay counselors to continue providing targeted HTS and index case testing.⁹

SECOND 90

Same-day ART initiation was feasible and acceptable to both clients and providers; it helped to reduce the loss to follow-up that is otherwise experienced when clients have to wait longer and return to the health facility before initiating treatment. Same-day ART initiation can be made available by ensuring that lay counselors provide ART pre-initiation counseling immediately after patients receive a positive test result and escort the patient to the ART clinic.

A simple reorganization of some services can greatly improve patient retention in the system, particularly infants and children. The introduction of mother-infant pairs, registration of HEIs at birth, and utilization of expert clients were all successful strategies implemented by the project and will help to achieve greater retention in care and alleviate some of the burden among clinicians and nurses.

THIRD 90

Through the implementation of viral load and high viral load registers, combined with supervision and mentorship, more clients can be monitored for viral load testing eligibility and achieve suppression. Greater investment by facilities and implementers in training, mentorship, and supervision, as well as making viral load testing equipment available at each high-patient-load health facility will help to achieve the 90-90-90 targets.

Teen clubs were both popular with HIV-infected adolescents and successful at retaining them in care. About 50% of new HIV infections in Malawi occur in 10- to 24-year-olds.¹⁰ Teen club services and clinics responded to adolescents' needs holistically; they thereby retained them in the health system, and helped achieve viral suppression through peer support and increased ART adherence. Implementers should invest heavily in the teen club approach to reach adolescents and meet their unique health needs. Achieving greater viral suppression among adolescents living with HIV is a huge achievement and critical for the future of Malawi as youth make up such a large portion of the population.

As the successes of the DHSS Project have demonstrated, the combination of strengthened and scaled-up index case testing and PITC, with same-day ART initiation, continued engagement of expert clients, and expansion of viral load testing will fast-track Malawi's progress toward epidemic control.

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District Health System Strengthening and Quality Improvement for Service Delivery (DHSS) Project. For more information, please contact Aziz Abdallah, Project Director aabdallah@msh.org

