

AIDSRelief Ethiopia

Impact of a Horizontal Approach in Vertical Program: The experience of AIDSRelief Ethiopia in strengthening laboratory diagnostic capacity

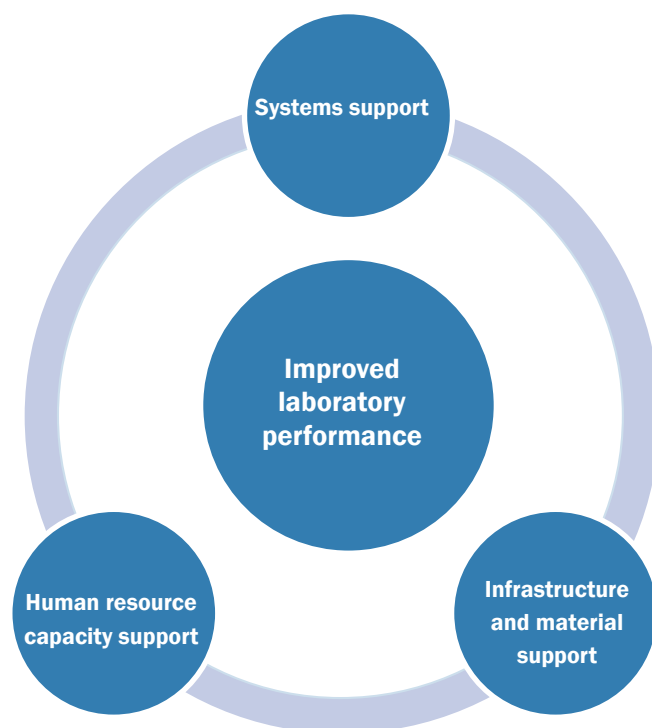
Background

Unprecedented investments in HIV/AIDS-related programming in many resource-limited settings have resulted in major improvements in the diagnostic capacity of medical laboratories that support HIV care and treatment initiatives. In Ethiopia, the Federal Ministry of Health (FMOH) is working to leverage the improvements of diagnostic services related to HIV/AIDS to enhance the quality of all services provided by the medical laboratory by tapping into resources established by the President's Emergency Plan for AIDS Relief (PEPFAR). AIDSRelief's global technical expertise and vast field experience gained by supporting 229 medical laboratories in Nigeria, Uganda, Kenya, Zambia, Tanzania, and Rwanda has allowed the Ethiopia program to not only improve HIV-related laboratory services, but also to help realize the integrated laboratory system strengthening approach envisioned by both AIDSRelief and the FMOH. Indeed, the laboratory support provided reflects AIDSRelief's belief that improving the quality of laboratory operations at primary health facilities is essential for strengthening the entire health system.

Approach

In late 2009, the AIDSRelief Consortium began supporting six health facilities in West Showa Zone, Oromia Region, Ethiopia, in the context of the PEPFAR supported HIV care and treatment program. One of the key HIV-related interventions of the program was to support laboratories in providing essential HIV services and thus, strengthen the overall capacity of the laboratories. Prior to providing any direct support, obtaining a better understanding of capacity gaps was necessary. To this end, AIDSRelief developed proprietary Laboratory Quality Improvement Tools (LQITs) to allow quick identification of service gaps through a questionnaire and direct observations. An assessment of the six Ethiopian facilities using the tools identified a number of critical gaps, including limited testing services, unknown accuracy of test results, testing procedures that were not to AIDSRelief standards, potentially hazardous specimen collection and waste disposal procedures, poor awareness of standards and accreditation, lack of instruments, lack of quality assurance systems in place at health facilities and poor paperwork management practices. AIDSRelief adopted a multi-faceted strategy to improve laboratory performance in these areas: systems support, infrastructure and material support, and human resource capacity support.





Providing Systems Support: AIDSRelief developed and distributed standard operating procedures materials, laboratory request forms, job aids, and other materials to assist laboratories in becoming aware of and improving compliance with accepted laboratory standards. Through discussions with facility administration and health care financing units, and the pharmacy unit, AIDSRelief also helped develop plans to optimize laboratory supply chain systems.

Providing Infrastructure and Material Support: The effectiveness of laboratory services at health facilities had been hampered by a lack of sufficient equipment and reagents. To help fill this gap, AIDSRelief supported renovation and refurbishing of the laboratories at one hospital and five health centers. The renovation at the hospital has allowed initiation of independent Microbiology, Immunology, Clinical Chemistry, Parasitology, & Hematology departments that are equipped with emerging technologies. AIDSRelief procured and distributed reagents and crucial laboratory equipment. To reduce the likelihood of adverse environmental and health impact of laboratory and other healthcare wastes—which were often simply tossed into open-air waste pits on-site—AIDSRelief supported the construction of incinerators at two facilities.

Providing Human Resource Capacity Support: In addition, AIDSRelief invested in increasing the number of appropriately trained laboratory staff—personnel essential for the efficient delivery of high quality medical services—through training sessions and a mentoring/coaching approach recommended by the FMOH for in-service training of laboratory professionals. In addition to the laboratory personnel trained from the six AIDSRelief-supported health facilities, the program also trained laboratory personnel in nine additional Ethiopian Catholic Church hospitals and health centers, maximizing its reach and resources. Monthly technical support visits were provided with the goal of driving Continuous Quality Improvement (CQI) activities at all six medical laboratories supported. Using AIDSRelief LQIT, each laboratory was graded at the end of every quarter to determine whether the laboratories were continuing to develop and maintain quality in malaria and TB microscopy services while receiving technical support by the AIDSRelief in-country laboratory team. This on-site mentoring by the AIDSRelief in-country laboratory team helped sustain new practices, strengthened routine work activities, and ensured that appropriate technical skills were applied over time.

Successes

Improved laboratory performance: AIDSRelief-supported sites have added new laboratory tests, which have resulted in improved HIV care and treatment services. Data trends over the course of the AIDSRelief program show an improvement in both HIV-specific and general laboratory services on a number of benchmarks. For example, prior to the AIDSRelief program, HIV test results were returned at the next appointment, which could be up to a month after the test was taken; since project implementation, test results are now provided on the same day. The quality of AIDSRelief efforts are demonstrated in a recent baseline assessment undertaken as part of the World Health Organization, African Office (WHO-AFRO) accreditation process for medical laboratories, whereby one of the labs supported and renovated by AIDSRelief received the second highest baseline score out of the 39 medical laboratories in Ethiopia moving towards accreditation.

Improved work environment: Lab workers at supported facilities reported significant improvements in the work environment—and also in staff morale—as a result of these interventions. Lab personnel have also reported that equipment provided for HIV has also benefited the larger population. For example, the renovation at the hospital laboratory has allowed the creation of independent Microbiology, Immunology, Clinical Chemistry, Parasitology, and Hematology departments that are equipped with emerging technologies.

The Continuous Quality Improvement (CQI) approach fostered quality TB & Malaria diagnostic services: At the time of the baseline assessment, the malaria diagnostic score was unsatisfactory (below 65%) at all six laboratories, while the TB diagnostic score was unsatisfactory at five and good (between 75% and 84%) at one health center laboratory. By the sixth quarter of the project, all six medical laboratories scored above 85% for both TB and malaria microscopy, indicating an excellent performance in both areas. Moreover, none of the scores has decreased over time, proving that maintaining quality standards at primary level medical labs was achievable.

An integrated approach to external quality assurance (EQA) ensured accurate results: AIDSRelief established an EQA protocol whereby from among all the samples collected on-site, each HC laboratory sent to St Luke hospital on a weekly basis two TB slides, two malaria slides, and two blood samples for a comparative analysis. Similarly, the hospital laboratory preserved the same amount and type of specimens to send to each HC laboratory for retesting. This approach was devised to assess the diagnostic performance of the facilities. Results have demonstrated a relatively high test-retest performance. For example, during a one-month period in late 2011—after several quarters of AIDSRelief support to laboratories—a total of 192 specimens were rechecked between hospital and HC laboratories. The analyses demonstrated more than 95 percent agreement between the test and the retest, indicating a high level of accuracy. The AIDSRelief results have proved that secondary labs, such as St. Luke hospital, could play vital role in assuring lab qualities at primary level HCs, without depending on remotely located regional laboratories to provide this support. Because of AIDSRelief's EQA successes, national and regional-level EQA providers should consider the approach. AIDSRelief also recommends a step down approach by setting up a similar EQA model between the health centers and the health posts; the program is working with five HCs in turn, providing the same EQA service to the 28 health posts in their catchment areas to improve Malaria rapid test diagnostic performance therein.

Conclusion

By providing systems, material and infrastructure, and human resources support to six laboratories, AIDSRelief worked to ensure timely access to the diagnostic services available at the hospital, adequate quality of blood specimens obtained at health facilities and a reasonable balance of quality and turn-around time. Because accurate diagnoses are important to providing appropriate care to individuals, the laboratory program was a critical step in achieving the larger AIDSRelief project's goals in Ethiopia. Through the various initiatives taken as described above, the program has successfully used the opportunities to strengthen the laboratory systems of these facilities under its HIV care and treatment program.