

# Upgrading Laboratories towards WHO-AFRO Laboratory Accreditation

A “step-wise” approach to laboratory quality improvement in the Amhara, Tigray, and Afar regions of Ethiopia

## Background

The World Health Organization (WHO) recognizes quality laboratory services as key to improving global health and reaching Millennium Development Goals. Strengthening the breadth of laboratory services accessible to clients, and ensuring that results are accurate, reliable, reproducible, and rapid enough to be useful, is crucial to improved health outcomes.

Until recently, however, the majority of Ethiopian public health laboratories delivered suboptimal service and were not in a position to contribute to a quality health system. Many performed poorly, hindered by dilapidated infrastructures, and poor development and implementation of quality management systems (QMS), including inadequate participation in external quality assessment (EQA) programs.

Now, through strong commitment and leadership by the Federal Ministry of Health (FMOH) through the Ethiopian Health and Nutrition Research Institute (EHNRI), and the concerted effort of local and international partners, this has begun to change. In recent years, public health laboratories in Ethiopia have begun to implement national and international QMS to provide quality laboratory services. As part of this effort, I-TECH Ethiopia’s laboratory team, together with EHNRI and local partners, is supporting a select group of laboratories to achieve international accreditation through the WHO-AFRO step-wise laboratory accreditation process.

## The WHO-AFRO Laboratory Accreditation Program A “step-wise” approach to quality improvement

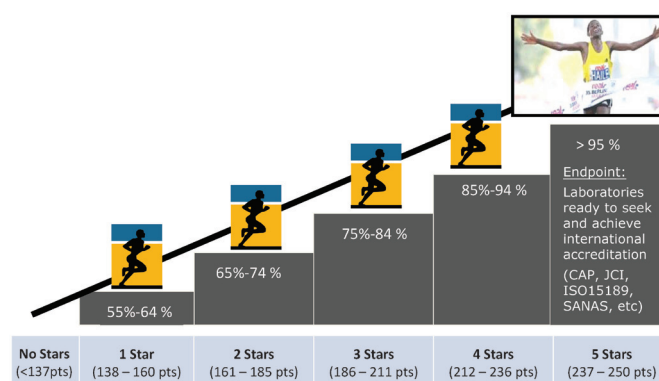
The establishment of a formalized system to improve public medical laboratories throughout Africa occurred in several steps. In 2008, in Mozambique, African Caribbean and Pacific Group of States leaders joined in the Maputo Declaration. As part of a larger set of health goals, the declaration included global efforts to strengthen laboratory systems and services in resource-limited countries. Later that year, in Senegal, the WHO African Regional Office (AFRO) laboratory network called for the establishment of a “step-wise” accreditation process. In July 2009, in Kigali, Rwanda, WHO-AFRO, together with US partners and a group of health experts and policymakers from 13 African countries, launched the WHO-AFRO step-wise laboratory accreditation program.

The program uses a five star rubric (Figure 1) and clearly defined goals to evaluate the quality of service and

competence of laboratories as they progress toward international quality standards. External authorities monitor improvements through a series of evaluations using a comprehensive, standardized accreditation checklist. Based on performance, each laboratory is awarded a star rating. Through this tiered accreditation process, laboratories gradually improve the quality of their performance. The improvement goals used in this accreditation process, often referred to as the “Twelve Pillars of Laboratory Quality Improvement” (Figure 2), define clear components of a quality laboratory system.

The program also includes training and support for laboratories through the SLMTA (Strengthening Laboratory Management Towards Accreditation) principles.

The WHO-AFRO step-wise progress goals meet standards used worldwide, but the step-wise approach recognizes that improvement takes time and often occurs in increments, especially in resource-limited settings. The five-step quality improvement process prepares laboratories for international accreditation. The WHO AFRO step-wise accreditation process does not replace existing accreditation frameworks. Rather, it provides an interim pathway to the realization of international laboratory standards.<sup>1</sup>



**Figure 1:** The WHO-AFRO step-wise laboratory accreditation process is provided through a one- to five-star tiered accreditation approach, based on an annual onsite inspection of laboratory operating procedures and practices. (Adapted from original graphic by Gershy-Damet et al.<sup>2</sup>)

## Laboratory Quality Improvement and Accreditation in Ethiopia

A strong network of laboratories has the potential to dramatically improve Ethiopia’s health systems and the care available to people in need. Currently, there are only

1. Standards include CAP, College of American Pathologists; ISO, International Organization for Standardization; JCI, Joint Commission International; SADCAS, South African Development Community Accreditation Service; SANAS, South African National Accreditation System.  
2. Guy-Michel Gershy-Damet et al. The World Health Organization African Region Laboratory Accreditation Process. *Am J Clin Pathol.* 2010;134:393-400.

two internationally accredited laboratories in Ethiopia: one public (a disease-specific polio laboratory accredited by WHO) and one private (accredited by Joint Commission International). Therefore, upgrading the quality of public health laboratories through accreditation is critical.

In Ethiopia, the National Laboratory Accreditation committee (NLAC) was established by the EHNRI from the National Laboratory Technical Working Group (NLTWG) in December 2009 to support public health laboratories to adapt and implement the WHO-AFRO laboratory accreditation program. The committee formally introduced the program, along with an implementation guideline and checklist for laboratory quality improvement. The NLAC supports Ethiopian public health laboratories with periodic mentorship and quality improvement assessment according to the SLMTA operational requirements. It also conducts quality system management trainings and institutes quality improvement measures to help laboratories achieve the 12 Pillars of Laboratory Quality Improvement.



**Figure 2:** The 12 Pillars of Laboratory Quality Improvement form the backbone of the WHO-AFRO step-wise laboratory accreditation program.

### I-TECH Ethiopia and Partners

#### *Working together to upgrade laboratories towards WHO-AFRO step-wise laboratory accreditation*

The I-TECH Ethiopia laboratory team is already working with local partners (regional health bureaus, regional health and research laboratories, hospitals, and health centers)

and the EHNRI to strengthen the capacity of 49 public health laboratories in the Amhara, Tigray, and Afar regions. This work includes sustainable upgrades to infrastructure and technology, mentorship and training of mentors, developing systems to promote continuous quality improvement, and trainings that develop the skills and confidence of laboratory professionals.

Now, the laboratory team, in collaboration with EHNRI, the NLAC, the Centers for Disease Control and Prevention (CDC), regional health bureaus, and regional health research laboratories, has also committed its efforts to supporting ten laboratories—seven hospital laboratories and three regional health research laboratories in the Amhara, Tigray, and Afar regions—to attain WHO-AFRO accreditation standards within two years. To do so, each laboratory will need to systematically improve the quality of performance and services it provides.

In Ethiopia, following the step-wise quality improvement approach, NLAC will review laboratory improvement progress based on the standardized WHO-AFRO quality improvement checklist. The level of improvement at each laboratory will be scored by an external accreditation authority (WHO-AFRO or designated authority). Laboratories will be rated from one to five stars based on their step-wise quality improvement. Laboratories that achieve the five star rating (demonstrate outstanding performance) will be strongly encouraged to enroll in an established international accreditation scheme.

Strengthened laboratory services have wide-reaching benefits for Ethiopia's health system improvement goals. Increased access to effective and reliable diagnostic services will support better care for patients, improve the health system, and support achievement of the Millennium Development Goals.

Accreditation also brings Ethiopia's laboratories closer to the international community of laboratory experts, allowing laboratory professionals and leaders to contribute to and learn from global expertise on effective laboratory procedures, challenges, and best practices.

*For more information on I-TECH Ethiopia's WHO-AFRO step-wise laboratory accreditation efforts, please contact Dr. Wubshet Mamo, Clinical Laboratory Director, I-TECH Ethiopia, at <[wubshetm@itech-ethiopia.org](mailto:wubshetm@itech-ethiopia.org)>.*

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