

# Strengthening Laboratory Services and Systems in Resource-Poor Countries

John N. Nkengasong, PhD

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Medical and public health laboratory services are a critical component of a country's national health system, as they are central in disease diagnosis, prevention, surveillance, treatment, and outbreak investigations. However, laboratory services and systems in resource-poor countries have been neglected and need to be strengthened to meet the goals of several major global health programs, including the Global Fund to Fight AIDS, Tuberculosis, and Malaria (GFATM); the United States President's Emergency Plan for AIDS Relief (PEPFAR); the Millennium Development Goal for health; and the International Health Regulation. These goals require all countries to have the capacity to assess, detect, and report to the World Health Organization (WHO) any potential public health risk. This should be supported by reliable and accurate laboratory results to ensure a timely and effective response. Strengthening laboratory services and systems in resource-poor countries will require better coordination and collaboration among donors and partners, with strong leadership of each country's Ministry of Health. Recognizing these challenges, representatives from 33 countries in Africa, Asia, and Central America; from major institutions including the World Bank, the GFATM, WHO AFRO, and WHO Geneva; from some Universities involved in implementing the PEPFAR program (Harvard University, Columbia University, University of Maryland); and from professional organizations (American Society for Microbiology, American Society for Clinical Pathology, Association of Public Health Laboratories, Clinical and Laboratory Standards Institute) met in Maputo, Mozambique, in January 2008 and issued the Maputo declaration for strengthening laboratory services and systems in resource-poor countries. The declaration calls on resource-poor countries to develop national laboratory strategic plans and policies that will guide efforts to strengthen laboratory services and systems as an integral part of the overall health system.

A series of articles published in this issue of the *Journal* provide an overview of several important aspects that are

critical to strengthening laboratory systems in resource-poor countries. The articles begin by highlighting global health programs that combat major diseases of public health importance, such as malaria, tuberculosis, and AIDS. These are followed by perspectives on the challenges and opportunities laboratory services and systems face in supporting global health programs. These then discuss the critical role and need of a national laboratory strategic plan and policy as a vehicle to coordinate efforts to develop a unified laboratory system in resource-poor countries. Examples of countries, such as Ethiopia, that have successfully developed and implemented a laboratory plan are highlighted. Because one key aspect of a laboratory plan and policy is standardization of testing, commodities, and equipment, perspectives and practical ways with which some countries have standardized testing are described. Lastly, a WHO manual for providing laboratory testing at district health settings is presented.

As a major part of health system strengthening, the time is now for countries to develop comprehensive laboratory strategic plans and policies. With increased funding for global health programs, the international community should move away from supporting the development of disease-specific silo laboratory systems and embrace an approach that focuses on strengthening recognized key elements that cut across diseases, including practical quality management systems such as the WHO AFRO step-wise laboratory accreditation scheme, equipment maintenance systems, supply chain management systems, laboratory information systems, specimen referral systems, and training and retention systems. This approach will enable resource-poor countries to maximize their resources and sustain laboratory systems that can be used to combat multiple diseases.

*From the International Laboratory Branch, Global AIDS Program, Centers for Disease Control and Prevention, Atlanta, GA*