

15. Laboratory Reference and Diagnostic Services, and Support for Quality Improvement												
Basic			Developing			Advanced			Leading Edge			
1	2	3	4	5	6	7	8	9	10	11	12	
Strategic Direction	The NPHI sometimes seeks support for lab capacities it deems important. However, most of its strengths reflect priorities of funders. It creates strategic linkages with other labs on an ad hoc basis, for example, in emergencies.			The NPHI is beginning to address the highest priority issues, both by enhancements at the NPHI and through linkages with other labs. The NPHI is better able to respond to country priorities, but its funding and priorities are still largely controlled by donors.			The NPHI's labs can perform those assays most critical for the public's health. They work with clinical facilities, other labs, epidemiologists, and other groups to ensure highest priority tests are performed and the data are used.			The NPHI's labs fulfill current needs and are preparing for the future, e.g., through strong lab networks, subnational capacity development, ensuring surge capacity, and working across sectors (e.g., on One Health and other multisectoral issues).		
Systems	The NPHI recognizes the need for improved SOPs and systems for specimen transport, especially from remote areas, and tracking and safe handling of specimens in the lab. Due to lack of comprehensive systems, specimens sometimes get lost in the lab or lose identifying information, and lab accidents occur regularly.			Specimen transport systems are improving. Staff are generally aware of SOPs for worker safety, conducting assays and QA/QC. A paper or electronic lab information management system (LIMS) is starting to be implemented. The NPHI is starting to have systems to deal with emergencies, e.g., related to procurement and surge staffing.			Systems for specimen transport to the NPHI and safe and efficient handling of specimens in the NPHI's labs generally work well. The NPHI has systems to ensure lab and worker safety. The NPHI has a modern LIMS to track specimens and support data management. Systems for responding during emergencies can handle all but the largest ones.			The NPHI's labs use cutting-edge systems to maximize worker safety and work quality. Movement through the specimen lifecycle, from receipt to sharing of results, is efficient. The NPHI can rapidly scale-up during emergencies and has systems, e.g., linkages with outside organizations, for procurement and testing, that can be used to manage even the largest events.		
Resources	Issues with the NPHI's utilities, e.g., electricity and water supply, sometimes hamper lab work. NPHI lab groups that have significant donor funding tend to have adequate resources, whereas some high-priority NPHI labs have limitations.			Reagents and other supplies are usually available, but shortages sometimes occur. NPHI labs are getting new equipment and technologies and staff are receiving critical training, but the NPHI cannot conduct some critical tests.			The NPHI's labs have adequately trained staff, infrastructure, and resources to accurately test most specimens, including in surge situations. The NPHI has developed linkages so that tests the NPHI can't do are conducted elsewhere.			The labs have resources, infrastructure, and linkages with outside organizations to handle large emergencies without significantly compromising quality or disrupting routine work. The NPHI routinely upgrades equipment and helps staff enhance skills.		
Quality	The NPHI can sometimes conduct high-quality testing, often with donor support. For many tests, the NPHI struggles to perform the volume of tests required, and results may be inaccurate. It recognizes that labs throughout the country have quality issues but has not taken steps to address those.			Some NPHI labs have initiated structured lab improvement processes, e.g., implementing aspects of quality management systems (QMS). However, the quality of lab work and reliability of results varies across the NPHI's labs.			All NPHI labs have embraced QMS. Where appropriate, labs have completed certification or accreditation processes. The NPHI is initiating efforts to improve the country's overall lab quality, e.g., through proficiency testing programs.			QMS policies and procedures are implemented comprehensively and consistently. The NPHI pioneers new lab methods, some of which become widely adopted. Lab results are considered "gold standard" both in-country and throughout the world. The NPHI provides leadership in building lab quality throughout the country.		
Engagement	The NPHI engages with subnational and other labs on an ad hoc basis. It is establishing relationships with priority groups to receive specimens, e.g., for sentinel surveillance or to confirm outbreaks.			The NPHI is starting to formalize relationships with a range of groups to ensure it gets specimens for priority work and to get tests done that are not within the NPHI's capacity. The NPHI can support limited training of subnational labs.			The NPHI has formalized relationships with labs and clinical facilities throughout the country. It creates linkages among laboratories to address gaps in national capacities. It provides substantial training and other assistance to subnational labs.			The NPHI's labs work closely with facilities and organizations throughout the country. It provides leadership and support to a range of lab networks. Its training and other supports for subnational levels help ensure the national public health lab system is maximally functional.		
Impact	Except for lab results that are part of donor-driven programs, the NPHI's lab results are rarely used to guide public health policies or programs because test results often are not timely or reliable.			The NPHI can identify situations where the lab's work was helpful, for example, in confirming outbreaks. However, labs outside the NPHI are called on to provide services because of limitations in the NPHI's lab capacity and quality.			The NPHI and other organizations often use the NPHI's lab results to inform public health program and policy decisions. The NPHI's efforts have had demonstrable impact on quality in some non-NPHI labs in the country.			The NPHI can quantify the impact of its lab efforts, related to diagnostics, surveillance, development and assessment of new lab tests, and improving lab quality in the country and the world.		