

11. Laboratory Systems												
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 capacities reflect the priorities of funders. The NPHI's labs create strategic linkages with other labs on an ad hoc basis, for example, in emergencies.			The NPHI is starting to address the highest priority lab issues, both by strengthening its own labs and through linkages with other labs. The NPHI's labs are better able to respond to country priorities, but donors still largely control funding and priorities.			The NPHI's labs can perform tests that are essential for the public's health. They work with clinical facilities, other labs such as at universities, epidemiologists, and others to ensure the highest priority tests are conducted and the resultant data are used effectively.			The NPHI's labs not only meet current needs but also prepare for the future, for example, by building strong networks, developing subnational capacity, ensuring surge capacity, and collaborating across sectors (for example, on One Health).		
Systems	The NPHI recognizes the need to develop SOPs and systems for specimen transport, tracking, and safe handling. Due to a lack of comprehensive systems, specimens sometimes get lost or lose identifying information. Lab accidents occur regularly.			Specimen transport systems are improving. The NPHI has some SOPs for conducting assays and reporting results, but these are outdated and not always followed. The NPHI has started paper or electronic lab information management systems (LIMS). It is developing systems for responding to emergencies, such as rapid procurement and surge staffing. Safety measures are increasing, and accidents are decreasing.			The NPHI has systems and SOPs for all critical functions, including specimen transport, performance of tests, and ensuring all appropriate parties receive the results. A modern LIMS tracks specimens and supports data management. The NPHI's lab systems support effective emergency response. Health and safety guidelines are generally followed, and accidents are infrequent.			The NPHI's labs use innovative systems to maximize work quality and efficiency. Movement through the specimen lifecycle, from receipt to sharing of results, is smooth. The NPHI's systems and linkages can manage even the largest emergency events. A culture of safety helps ensure that accidents are very rare, and when they do occur, they prompt investigation and measures to prevent future events.		
Resources	Lack of equipment and reagents and issues with the NPHI's utilities, such as electricity and water supply, often hamper lab work. Labs funded by donors tend to have adequate resources, whereas many other high-priority NPHI labs have limitations.			Reagents and other supplies are usually available, although shortages sometimes occur. Some critical NPHI labs are getting new equipment and technologies, and staff are receiving training, but the NPHI still cannot conduct some essential tests.			The NPHI's labs have adequately trained staff, infrastructure, and resources to accurately test most specimens, even during surges. The NPHI tries to maintain linkages with other labs to test specimens that are not within the NPHI's capacities and to help with surges.			The NPHI's labs have resources, infrastructure, and staff with advanced training. They can manage large emergencies without significantly compromising routine work. The NPHI maintains linkages with other labs for specialized assays and help during emergencies. The NPHI routinely upgrades equipment and helps staff enhance skills.		
Quality	When supported by donors, the NPHI can conduct high-quality testing. However, the ability to conduct many critical tests is limited and quality is poor. The NPHI is unable to address lab quality issues in subnational or other labs.			Some NPHI labs have initiated structured lab improvement processes, such as aspects of quality management systems (QMS). However, the quality of lab work and reliability of results varies across the NPHI's labs and is typically limited in groups without donor funding.			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, for example, through proficiency testing programs.			The NPHI implements QMS policies and procedures comprehensively and consistently. It develops new lab methods, some of which become the gold standard. The NPHI's lab results are highly trusted, nationally and internationally. The NPHI leads efforts to build lab quality and capacity throughout the country and provides training and other assistance internationally.		
Engagement	The NPHI engages sporadically with subnational and other labs. It is establishing ongoing relationships with some groups, for example, for sentinel surveillance.			The NPHI is formalizing relationships with a range of groups to ensure it gets specimens for priority work and to conduct tests it cannot perform. The NPHI supports limited training for subnational labs.			The NPHI has formal relationships with labs and clinical facilities throughout the country. It creates linkages to address gaps in national capacities. It provides substantial training and assistance to subnational labs.			The NPHI's labs work closely with facilities and organizations nationally and globally. Its training and other help for subnational and other labs contribute to a highly functional national public health lab system.		
Impact	Except for those from donor-funded programs, the NPHI's lab results are rarely used to guide public health policies or programs because they are neither timely nor reliable.			The NPHI can identify instances where its lab's work contributed to addressing public health issues, for example, by confirming outbreaks.			The NPHI's lab results often inform public health program and policy decisions. The NPHI has helped improve the capacity and quality of subnational and other non-NPHI labs.			The NPHI can quantify the impact of many of its lab efforts, including in surveillance and emergency response, development and assessment of new lab tests, and improving lab quality nationally and internationally.		