



**AfricaCDC**

Centres for Disease Control  
and Prevention

**Safeguarding Africa's Health**

# National Public Health Institutes in Africa

Development  
Framework 2.0

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# National Public Health Institutes in Africa

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Africa CDC is a continental autonomous health agency of the African Union established to support public health initiatives of Member States and strengthen the capacity of their public health institutions to detect, prevent, control and respond quickly and effectively to disease threats.

## Safeguarding Africa's Health

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# Acronyms

<b>Africa CDC</b>	Africa Centres for Disease Control and Prevention
<b>AMR</b>	Anti-Microbial Resistance
<b>AU</b>	African Union
<b>CoE</b>	Centre of Excellence
<b>EOC</b>	Emergency Operation Centre
<b>FETP</b>	Field Epidemiology Training Program
<b>GIS</b>	Geographic Information System
<b>HIMS</b>	Health Information and Management System
<b>IANPHI</b>	International Association of National Public Health Institutes
<b>LMIS</b>	Laboratory Management Information System
<b>IHR</b>	International Health Regulations
<b>IT</b>	Information Technology
<b>MERL</b>	Monitoring, Evaluation, Reporting and Learning
<b>MoH</b>	Ministry of Health
<b>MS</b>	Member State(s)
<b>NDMA</b>	National Disaster Management Agency
<b>NPHI</b>	National Public Health Institute
<b>PHEOC</b>	Public Health Emergency Operation Centre
<b>RCC</b>	Regional Coordinating Centre
<b>TWG</b>	Technical Working Group
<b>US-CDC</b>	United States, Centres for Disease Control and Prevention

# Foreword

The Africa Centres for Disease Control and Prevention (Africa CDC) is a specialized technical institution of the African Union (AU), entrusted with the mission of supporting African Member States to protect and improve the health of their populations. By providing critical expertise in the prevention, detection, and response to both endemic and epidemic diseases, Africa CDC plays an essential role in enhancing the continent's public health infrastructure.

As outlined in its 2023–2027 Strategic Plan, Africa CDC is committed to driving progress in public health across the continent by fostering the establishment and strengthening of National Public Health Institutes (NPHIs). These institutes serve as the cornerstone of national health systems, enhancing evidence-based decision-making and supporting the implementation of effective public health programs. NPHIs are a priority pillar within Africa CDC's strategic framework, central to ensuring that Member States are equipped to address current and emerging health threats.

In alignment with the AU's call for a New Public Health Order, Africa CDC emphasizes the need to strengthen public health institutions through five critical pillars: building robust health institutions, developing a skilled health workforce, expanding local manufacturing capacities for health security commodities, mobilizing domestic resources, and promoting partnerships based on mutual respect and action. Strengthening NPHIs is a key component of this agenda, as these institutions are crucial in both enhancing the capabilities of existing health systems and in providing the infrastructure needed in countries without formalized public health institutes.

As the continental body responsible for advancing Africa's health agenda, Africa CDC has the political, legal, and technical responsibility to set standards and guide the implementation of public health policies and frameworks. In collaboration with the International Association of National Public Health Institutes (IANPHI) and the U.S. Centers

for Disease Control and Prevention (US-CDC), Africa CDC has developed a comprehensive suite of tools to support the establishment and strengthening of NPHIs across Africa. This includes a National Public Health Institutes Development Framework, a Monitoring Scorecard, and a Legal Framework—all aimed at guiding Member States in their efforts to create institutions that are capable, accountable, and responsive to the needs of their populations.

In its first edition of the *Framework for the Development of NPHIs in Africa*, Africa CDC has outlined the core functions, operational models, and legal mandates necessary for NPHIs to thrive. This edition provides detailed guidance on essential components such as infrastructure, human resources, equipment, logistics, governance, and monitoring and evaluation (M&E). These elements are crucial for the successful establishment and sustainable operation of NPHIs, which are envisioned as Centres of Excellence for public health in Africa.

This document, now enriched with additional insights into the characteristics of NPHI Centers of Excellence, intended to serve as a strategic resource for Member States. I strongly encourage countries to utilize this framework to build and strengthen their National Public Health Institutes, ultimately driving improvements in health outcomes across the continent and contributing to the achievement of Africa's broader development goals, as articulated in the AU's Agenda 2063.

It is my sincere hope that this document will catalyze meaningful action toward strengthening public health systems in Africa, ensuring that our continent is better prepared to meet current and future health challenges.

I thank you.

H.E Dr Jean Kaseya  
Director General, Africa CDC

## Executive Summary

National Public Health Institutes serve as the structural nucleus of the Africa CDC in Member States working to prevent, detect, and ensure adequate response to public health emergencies and support capacity building to reduce disease burden in Member States and the continent.

Africa CDC provides support, in collaboration with multiple other stakeholders, to strengthen the capacities of NPHI to perform critical public health functions. With fully established and functional NPHIs, countries can coordinate and network to respond promptly to epidemic-prone diseases and efficiently manage resources.

NPHIs are national-level institutions that lead and coordinate public health functions, including surveillance, emergency preparedness and response, public health research, and public health workforce development. The key attributes include commitment to transparency and accountability, use of evidence for decision-making, development of the workforce, and ensuring financial sustainability. While the Ministry of Health is usually the lead for policy decisions related to health, the NPHI plays a critical role in generating, synthesizing, and interpreting data, and using this information to make recommendations, to support the Ministry to make informed policy and program decisions.

As of December 2023, the number of Member States with fully established NPHIs was 23(42%), with 19 (34%) in the process of having one, and 13 (24%) not having started the process of establishing an NPHI. Even fully established NPHIs, however, require strengthening and a continuous process of improvement.

Africa CDC advocates for an NPHI that is a single entity responsible for the coordination and implementation of core public health functions including surveillance, laboratory

diagnosis, outbreak investigation and response, workforce development, public health research, program monitoring, and evidence-based policy direction. However, a modified approach can serve as an option, where several government agencies that are responsible for various public health functions create a network or platform to improve coordination and the leveraging of scarce resources across various agencies.

In its first edition of the *Framework for the Development of NPHIs in Africa*, Africa CDC has outlined the core functions, operational models, and legal mandates necessary for NPHIs to thrive. This edition provides detailed guidance on essential components such as infrastructure, human resources, equipment, logistics, governance, and monitoring and evaluation (M&E). These elements are crucial for the successful establishment and sustainable operation of NPHIs, which are envisioned as Centres of Excellence for public health in Africa.

This document, now enriched with additional insights into the characteristics of NPHI Centers of Excellence, intended to serve as a strategic resource for Member States



## 1.0. Introduction

The Africa Centres for Disease Control and Prevention (Africa CDC) is designed to work through its network of Regional Coordinating Centres (RCCs), which provides a mechanism that enables the Member States (MS) and other key public health stakeholders to collaborate and directly engage regularly. The RCCs bring into reality an “Africa CDC without walls” that supports the Member States at the point of need. The NPHIs serve as the structural nucleus of the Africa CDC in Member States, working to prevent, detect, and ensure adequate response to public health emergencies and support capacity building to reduce disease burden in the continent. Africa CDC’s report as of December 2023 indicates that 23 (42%) MS have fully established NPHIs, 19(34%) are in the process of having one, and 13 (24%) have not started the process of establishing one. Furthermore, the results have shown that even fully established NPHIs have varying degrees of each core competency. In the absence of a fully established and functional NPHI, countries face challenges with coordinating and networking in responding to epidemic-prone diseases and efficiently managing resources.

Africa CDC provides support to Member States to strengthen their different levels of establishment. In addition, Africa CDC has designated some functional NPHIs as regional Centres of Excellence to provide technical support to other Member States to strengthen the establishment of their NPHIs. The ultimate objective is to have fully established and functional NPHIs in all Member States.

In its first edition of the *Framework for the Development of NPHIs in Africa*, Africa CDC has outlined the core functions, operational models, and legal mandates necessary for NPHIs to thrive. This edition provides additional guidance on essential components such as infrastructure, human resources, equipment, logistics, governance, and monitoring and evaluation (M&E). These elements are crucial for the successful establishment and sustainable operation of NPHIs, which are envisioned as Centres of Excellence for public health in Africa. Moreover, the new edition includes information regarding the characteristics of regional NPHI Centers of excellence.

## 2.0. Establishment and Capacity Building of National Public Health Institutes

### 2.1 Establishment of National Public Health Institutes (NPHIs)

NPHIs are science-based governmental organizations that serve as focal points for the efforts of countries to protect national health security and improve health systems. “Strong health systems are essential for health security, and better health security is associated with more health systems that are more resilient. Building health systems for health security requires developing, strengthening and maintaining IHR capacities and the components of health systems as well as other sectors on which health systems

depend. The basis for achieving health systems for health security is having resilient communities that are involved in projects, interventions, or activities that address issues affecting their well-being, including before and during health emergencies. Health security relies on the effective implementation of the core capacities of the IHR (2005).”<sup>1,2</sup> NPHIs are national entities responsible for coordinating and implementing the IHR core capacities.<sup>3</sup> The key attributes include commitment to transparency and accountability, use of evidence for decision-making, development of their workforces, and ensuring financial sustainability. While the Ministry of Health

(MoH) is usually the lead for policy decisions related to health, the NPHI plays a critical role in generating, synthesizing, and interpreting data, and using this information to make recommendations in order to support the Ministry to make informed policy and program decisions.

### 2.1.1 Types of National Public Health Institutes

There are two types of NPHIs: a single entity and a network of institutions. In a single entity, fundamental public health functions are coordinated under one leadership. The network of institutions differs from the single entity in that the public health functions for the network of institutions fall under more than one operationally and technically independent institution. Africa CDC advocates for establishing single entities.

### 2.1.2 Core Functions of National Public Health Institutes

There are 10 core public health functions based on Africa CDC's framework for the development of NPHIs in Africa.<sup>4,5</sup> The descriptions for each core functions are detailed in **Appendix A**.

1. Population Health and Health-Related Indicators
2. Public Health Laboratory and Surveillance Systems, and Emergency Preparedness and Response
3. Disease Prevention and Health Promotion
4. Advocacy, Communication, and Social Mobilization
5. Policies and Plans that Support Individual and Community Health Efforts
6. Health Protection and Support for Regulation and Enforcement
7. Evaluation and Promotion of Equitable Access to Services
8. Public Health Workforce Development
9. Evaluation, Prevention, and Control of Public Health Issues in Clinical Settings
10. Research in Public Health

However, six of these functions are critical to defining the functionality for NPHIs. These are surveillance and disease intelligence;

emergency preparedness and response; laboratory systems and networks; information system; public health research; and health workforce development.

A fully functional NPHI is an institution established with a legal framework by either an act of parliament, a Cabinet decree, or a presidential decree, depending on the country's legal system, to lead and coordinate critical public health functions. Moreover, a fully functional NPHI exercises operational and technical independence.

### 2.1.3 Steps to Create a National Public Health Institute

The establishment of an NPHI should follow a stepwise approach that is defined and documented. The MoH shall provide effective leadership for this process or delegate this authority through formally structured existing processes. This content is taken from Appendix B of the Africa CDC's Framework for Development of National Public Health Institutes in Africa. It includes ideas about sequences and steps that countries have used to create NPHIs. The sequence of steps will vary by country, and multiple steps may occur simultaneously.

#### Leadership Commitment and Country Ownership

Following the regional and continental resolutions of the authority of Heads of State, MS must express commitment, declaring the establishment of NPHIs a priority. NPHI establishment, capacity development, and strengthening take time and are constantly evolving and therefore require government commitment that results in dedicated and sustainable financial resources to support NPHI functions. MS are encouraged to identify and appoint a champion for the establishment and capacity-building process. Successful NPHI creation also requires leadership to lead the planning, resource mobilization, change management, and other work required to create the NPHI.

#### Conduct Stakeholder Meetings and Outreach

It is critical that all impacted groups have a chance to participate in the discussion and have their visions and concerns heard and considered. The communication effort should start early. Though communication efforts may initially be focused, the amount and extent of communications should expand in scope and depth as the NPHI begins to take

shape. A good way to create a shared vision and momentum among key partners is to hold a stakeholder meeting that encourages active discussion, including situation analyses, needs assessment, and the mapping of a plan for the establishment of an NPHI. Key stakeholders and partners should continuously be engaged throughout the development and operationalization of the NPHI for coordinated implementation of public health programmes and mobilization of resources.

### **Establish a Technical Working Group (TWG)**

Creating a Technical Working Group (TWG) consisting of individuals from multi-sectoral and multidisciplinary organizations can help support and coordinate the discussions around NPHI formation. MoH leadership is crucial in providing guidance and support to ensure that the process stays on track and obtains adequate resources.

Accountability involves an organization taking responsibility for its actions and the readiness to be open, transparent, and accepting to observe and evaluate its performance. The willingness to be evaluated on performance helps an institution assess gaps and to avoid declining or stagnant performance. Understanding and instituting accountability practices are essential to the good governance of the NPHI. Managing and aligning all the governance processes with the vision, mission, aims, objectives, and strategic directions of the NPHI will ensure optimal performance and, consequently, the achievement of the desired impact.

### **Determine Needs**

Suggestions for questions to start the discussion about NPHI creation are in Appendix B of the Africa CDC Framework for Development of National Public Health Institutes in Africa 2.0. These include justification for NPHI establishment as well as its scope, potential benefits and costs. This stage also involves defining the core functions to be included as part of the NPHI, recognizing that additional functions may be added over time. Key success factors, which should be addressed up front, include the need for one or more high-level champions who ensure that the process continues to have momentum and designated leadership to oversee the day-to-day aspects of the process.

### **Develop a Roadmap for NPHI Establishment**

When a decision is made to establish an NPHI, it is important to describe the process that will be used and the timeline. It is important to establish communication from the beginning, both with people who could be directly impacted by the creation of the NPHI and with partners and others who will be working with or supporting the NPHI. This process includes the development of a roadmap that describes 1) the actions that will need to be done; 2) the resources that are required and where they will be obtained; 3) the key stakeholders who be involved; and 4) the timeline for the implementation of the activity. With adequate government support and buy-in, the commitment and capacity of the designing team, and effective stakeholder engagement, the establishment of NPHI may take 2–5 years.

### **Define the Core Functions of the NPHI**

This is a first step towards defining what public health functions will be included in the NPHI – in what areas it will play a leadership or critical role, and where its impact will be in terms of influencing other groups, e.g., by producing evidence-based recommendations. Defining the core functions of an NPHI should involve senior leadership of the MoH. The Africa CDC NPHI framework 2.0 can be used to discuss which core functions to consider.

### **Map Existing Functions**

Once the core functions are determined, it is often useful to assess and map all public health functions. Where these functions are currently being performed by other institutions, define how the restructuring will be beneficial, including the downsides and costs. In some cases, consideration may be given to whether a network of organizations may be an appropriate first step to creating an NPHI. In a country where autonomous/semi-autonomous institutions conducting one or more of the core public health functions exist, the NPHI can be established as a network of institutions.

### **Develop a Strategic Plan**

Developing a strategic plan is a critical step to developing an NPHI. Strategic planning involves a systematic process of defining an NPHI's vision, mission, goals, and strategies

to achieve those goals. This process aligns national priorities for the NPHIs and identifies necessary resources. It assesses how NPHI plans align with existing or developing health sector plans and identifies key performance indicators.

### **Mobilize the Needed Resources and Investment Required**

As part of the strategic planning, or through a separate process, it will be critical to clearly articulate the resources that will be coming to the NPHI and the critical gaps, as well as ways to address identified gaps. This analysis can also be part of a business plan and efforts to leverage existing resources outside of the NPHI, within the Member States. Resource plans need to consider short-term start-up costs, as well as long-term costs and return on investment, and should include consideration of sustainability. Another important issue is to identify the leadership who will actualize the proposed functions of the NPHI if the person who has led the development process will not remain in the leadership position.

### **Develop Required Legal Framework**

A legal framework for an NPHI is a document or series of documents agreed to by the highest government levels that formally establish an NPHI. Clearly defined legal authority will enhance institutional and individual accountability. The accountability tools include legislation, decrees or other legally binding documents that describe the NPHI vision and mission, mandates, and key functions, power, and authority, which include those of public health functions and who have the authority to act in the event of public health crises. Additional details, including leadership structure, administrative and financial accountability, and reporting, are often considered specific domains of the NPHI legal framework or act. More information about establishing legal frameworks for NPHIs can be found in the Africa CDC publication “Providing a Legal Framework for a National Public Health Institute (NPHI)”<sup>6</sup> and in IANPHI’s Best Practices document on “Legal Mandates and Governance of NPHIs”.<sup>7</sup>

An articulated Governance Structure is also very critical to the establishment of NPHIs.

This defines the NPHI’s relationship to the Minister of Health, the important issue of whether the NPHI is a line agency that reports to the Minister of Health or exists as a parastatal, or has aspects of both. If the NPHI is a line agency, the Director of the NPHI will usually report to the Minister of Health. If the NPHI is an autonomous parastatal/organization, there should be a Board of Directors whereby the Director of the NPHI reports to the Board, and the Board in turn reports to the Ministry. An Environmental and Social Impact Assessment also needs to be conducted, and extensive consultation is required to ensure that the new legislation does not overlap or adversely impact other existing legislation within the MS.

### **Inaugurate the NPHI**

The launch of the NPHI should be treated as a significant event. During this event, the public and relevant stakeholders shall be informed about the existence of the NPHI, what it will do, and how it will redefine the public health landscape.

## **2.2 Capacity Building for National Public Health Institutes**

Strengthening the capacities required to perform and maintain public health functions is a priority. Institutional capacity building is the totality of processes to improve an institution’s structures, abilities, and resources towards optimizing performance and achieving its goals. Institutional capacity building, therefore, entails several core elements.

### **2.2.1 Developing a Business Case for All-Stakeholder Buy-in**

Establishing a fully functional NPHI requires a sustainable dedication of resources. Although many of these resources may already exist in the government, consolidating them and providing the infrastructure to ensure efficient functioning of the NPHI will require buy-in from leadership and from the organizations and individuals impacted by the restructuring. Therefore, a business case, including an assessment of return on investment, can be useful to justify resources or expenditures to all stakeholders. Helping managers and staff



adapt to the changes and understand the new opportunities is critical. Leadership skills are pivotal in steering organizations through change, ensuring that transitions are managed and leveraged for continuous improvement and enhanced public health outcomes. It is a communication to stakeholders that expresses the current situation, the goal, the benefits of the new project and the disadvantages, costs, and risks of the current situation, as well as the future vision and organizational capacity to deliver the project outcomes. Ensuring input from the relevant stakeholders will facilitate the release of dedicated resources that are essential to building institutional capacity.

### 2.2.2 Infrastructure Planning

Given the complex and dynamic nature of the NPHI functions, NPHIs must develop and design an appropriate infrastructure to ensure the achievement of public health functions and efficient service delivery. The infrastructure may include the workspace, an emergency operations centre, public health laboratory, medical countermeasures, data health observatories, and logistics management system, and training and tele-conference facilities. Other resources include surveillance and data management tools, technological resources including hardware and software, information and technology support, integrated and uninterrupted power supply, and potable water.

### Workspace

The workspace is a critical frame that brings together staff, tools, and resources collaboratively to get work done. The arrangement of the workspace can significantly affect the productivity and morale of staff and ultimately contribute to organizational performance. Thus, the NPHI leadership should pay due diligence to workspace provision from inception. There is no “one size fits all” workspace. However, the various workspace types include dedicated workstations for individuals, breakout spaces that are open to everyone, co-working spaces that provide offices for different persons across units, conference rooms, break rooms, cafeterias, parking spaces, and efficient IT facilities. The benefits of such facilities include excellent networking opportunities, collaboration across units, divisions, and

departments, which facilitate idea generation and enhance productivity. Moreover, accessibility, safety, and security should be considered when selecting an NPHI’s workspace location.

### Public Health Emergency Operations Centre (PHEOC)

Given its mandate, the NPHI shall operate a well-equipped and effectively functioning public health emergency operations centre (PHEOC). Public health emergencies can occur at any time, posing significant threats to communities or countries; thus, the primary role of PHEOC is to coordinate and manage the response to these threats and to reduce their impact. PHEOC is a command centre that brings health personnel and other stakeholders together strategically using One Health and the whole community approach to facilitate communication, resource allocation, and strategic planning during an emergency. Ensuring the effectiveness of a PHEOC requires adequate resources such as trained personnel who are skilled in emergency management, epidemiology, risk/crisis communication and logistics; communication systems for seamless information exchange among stakeholders (internet, connectivity, secure data sharing platforms, and reliable phone lines); sufficient funding for staffing, training, equipment, and IT infrastructure; and availability of Standard Operating procedures, guidelines, plans, and checklists to support the operationalization of the PHEOC and guide emergency response coordination.

It shall be the responsibility of the NPHI via the PHEOC to manage health emergencies. Whenever it is indicated, MS are encouraged to establish a network of PHEOCs and facilitate communication pathways with other MS and regional institutions like Africa CDC.

### Public Health Laboratory Network and Systems

The National Public Health Laboratories (NPHLs) focus on the provision of specialized diagnostic services like molecular testing, antimicrobial resistance (AMR) testing, genomic sequencing and bioinformatics, links up with disease surveillance, and undertakes research and disseminates findings. NPHL also provides emergency response support

for health emergency management. Given this essential role, NPHIs should make a concerted effort to establish and strengthen the national laboratory network in terms of policy, governance, and regulatory level capacities. Depending on the country's context, NPHIs should establish and effectively manage a network of public health laboratories where testing and research are conducted. Maintaining a robust, interoperable laboratory information system that is integrated with other health information management platforms is also imperative.

The Africa CDC Regional Integrated Surveillance and Laboratory Network (RISLNET) will ensure coordination of surveillance and laboratory confirmation of detected pathogens of public health significance by leveraging the capabilities of laboratory structures operating between Member States in each region.

### **Workforce Development**

Workforce development is critical to ensuring competence of the NPHI and of the country's public health systems. In this regard, the country's public health workforce should be tracked, and continuous professional development planned for the NPHI staff. A Field Epidemiology Training Program (FETP) should be in place, and the NPHI should have a public health workforce strategy/plan for the country and a national database of public health workers. In addition, laboratory leadership, public health informatics, and public health emergency management should be prioritized. NPHIs with strategic oversight from the MoH shall have an autonomy over human resource management (adequate numbers, right competence, right position, discipline, remuneration, workforce retention, and career pathways). NPHIs should develop a multi-faceted approach to strengthen the public health workforce, including strategies to assess and fill identified gaps. The NPHI should also invest in sustainable initiatives that ensure continuous quality improvement of training and innovations for its workforce and building capacity in the health service. The NPHI should work closely with the Ministries of Health, Higher Education, Civil/Public Service, and other relevant stakeholders in the country for the training, accreditation/certification, retention, and career path development of the public health

workforce.

### **Medical Countermeasures**

The NPHI must design and operate a medical countermeasures system. Medical countermeasures are products that can protect people from biological, chemical, radiological, or nuclear threats. They include vaccines, drugs, diagnostics, and devices. Medical countermeasures are essential for public health emergencies like pandemics, bioterrorism, environmental disasters, or nuclear accidents. They can prevent, treat, or diagnose diseases and injuries caused by these threats. Medical countermeasures can also reduce the morbidity and mortality of affected populations and enhance the resilience of health systems. One of the critical aspects of an effective response is the timely and adequate supply of essential medical resources, such as personal protective equipment, vaccines, drugs, and ventilators. However, managing the supply chain in such situations is complex and uncertain due to factors such as demand surges, supply shortages, transportation disruptions, and coordination issues. NPHIs should continuously operate a robust procurement system to ensure the availability of these products.

### **Logistics Management System**

NPHIs must develop and maintain capacities for a robust supply chain management system that aims to optimize the capacities for the procurement, supply, and distribution of medical resources in a crisis. This involves collecting and analysing data on the current and projected needs, conducting a gap analysis and forecasting the availability of resources, identifying and prioritizing the most critical and vulnerable populations, and coordinating with multiple stakeholders, such as health authorities, suppliers, distributors, and health facilities. A supply chain management system also requires a robust logistics infrastructure that can ensure the storage, stock management, and timely delivery of resources to the point of care. A well-designed and well-implemented supply management system can improve the efficiency and effectiveness of the public health response. All these processes should take into consideration the customs procedures and requirements.

## Health Information Management System

The effective functioning of NPHIs necessitates a comprehensive Health Information Management System and IT infrastructure. Health Information Systems (HIS) include electronic health records, public health databases, and data management systems. Interoperability and integration with other health organizations, diagnostic and surveillance data sharing are also considerations. NPHIs should maintain an effective network infrastructure to ensure reliable and continuous connectivity. Consider using both wide area networks for national data exchange and local area networks for internal communication. Ensuring data security and privacy through encryption, access control, and firewall systems is paramount. Other essential components include Laboratory Information Management Systems (LIMS), emergency notification systems, capacity building, backup and disaster recovery plans, collaboration tools, and research analytics tools. Additionally, NPHIs should have National Observatories for health trend monitoring and GIS for spatial analysis. The specific choice of IT systems should align with the country's healthcare ecosystem and public health priorities.

### 2.2.3. Developing and Enhancing Institutional Policies and Procedures

Developing and enhancing institutional policies and procedures enable the organization to operate effectively and efficiently. Policies and procedures help to understand and define the professional standards expected of employees. They also ensure consistency in decision-making and operational procedures, leading to better quality service and accountability. Institutional policies and procedures are often related to human resources, financial management, procurement, risk management, quality management, supply management, reporting, and all public health functions consistent with the NPHI mandate. For example, during epidemics or health threats, guidelines will determine standard employee decisions and actions that demonstrate competence and commitment to professional excellence. Such expertise and experiences will generate new knowledge that will be documented as NPHI property and retained as part of the knowledge management of the institution

and made accessible across the institute. It is essential to have a regular review of policies and procedures.

### 2.2.4. Monitoring, Evaluation, Accountability, and Learning

Monitoring, evaluation, accountability, and learning (MEAL) are related processes and procedures that are crucial to understanding which components of programmes are functioning well and which ones need improvement. It also enables the evaluation of the overall effectiveness of interventions. MEAL is crucial and must be integrated into the ongoing internal management functions of the NPHI. The MEAL framework demonstrates to stakeholders that the NPHI is accountable.

Maintaining and strengthening the NPHI capacity demands managing and aligning employee efforts towards measured performance, with personnel contributing to achieving the organization's goals. Performance management is the process of ensuring that employees meet their goals and expectations and providing feedback and support to improve their performance. NPHIs are encouraged to create a shared vision, mission, and aim for the organization and help every employee understand and recognize their part in contributing to them and instituting processes that enhance individual and organizational performance. Providing opportunities for personal learning and skills development, determining the desired performance and how it can be measured, providing consistent feedback to employees, and recognizing and rewarding exceptional performance are some of the measures that are critical to the design and management of an effective performance management system. To effectively manage performance, NPHI managers must use various tools and techniques to help them plan, monitor, evaluate, and improve employee performance. Examples of standard performance management methods are goal setting, providing regular feedback, coaching, appraisals, recognition, and rewards. Performance management is not a one-time event but an ongoing process that requires continuous communication and collaboration between managers and employees. Using appropriate performance management tools,

managers can help employees perform at their best and achieve organizational success. The Africa CDC NPHI Scorecard and IANPHI/ U.S. CDC Staged Development Tool (SDT),<sup>8</sup> among other relevant tools, help NPHIs assess the developmental stage of their organization and its functions and create plans for further growth and development.

### **2.2.5. Collaboration and Partnerships**

Forging strategic relationships is crucial to the successful performance of NPHIs. Internal and external collaboration will facilitate the One Health approach across ministerial departments including the animal, environmental, and health sectors. Although NPHIs have technical and operational autonomy, the MoH provides strategic oversight and guidance to the NPHI.

The MoH focuses on setting and developing health policies, strategies, and programs to build and capacitate the healthcare system. This includes building hospitals and primary healthcare units, providing vaccines and therapeutics, and regulating healthcare service delivery. NPHIs generate and disseminate scientific information to guide health policy and programs, coordinating public health functions at national and sub-national levels to ensure the wellbeing of the population and national health security.

The NPHI leadership must form strategic alliances with other government agencies, national and international organizations, donors, the scientific community, technical networks, and the community. Such partnerships enhance collaboration, promote efficiency, foster mutual interest, and confer a long-term benefit of technical support and resource mobilization, which leads to the building and sustainability of strong institutional capacity.

### **2.2.6. Sustainability**

NPHI sustainability is critical and includes the following core elements: a well-defined strategic plan, dedicated domestic financing, and a legal framework. It is a best practice to integrate considerations for sustainability into each step of the NPHI development process. NPHIs are encouraged to have multi-year strategic plans, which describe the current and future activities and needs of the NPHI. Strategic plans serve as the basis

for forecasting the resources and planning that are needed to securing these resources. For most NPHIs, government appropriations constitute a significant source of support, and developing approaches to working with the MoH, Ministry of Finance, and other ministries and legislative bodies is critical to an NPHI's long-term sustainability. The full implementation of an NPHI's mission and objectives requires access to dedicated funds allocated from the treasury, which will minimize donor dependency. For long-term sustainability, NPHIs should adopt innovative financing strategies such as laboratory testing services, delivery of training, etc. Establishing an NPHI Foundation is best practice.

### **2.2.7. Avoiding Potential Threats to Success and Sustainability**

MS governments and NPHI leaders are encouraged to avoid potential threats to the success and sustainability of NPHIs. As a result, NPHIs shall maintain a risk register to identify, analyse, and track existing and potential threats to control future organizational threats. A qualitative study examined the enabling factors for and the barriers to the success and sustainability of national public health institutes in Cambodia, Colombia, Liberia, Mozambique, Nigeria, Rwanda, and Zambia.<sup>9 10</sup> Most participants identified three potential threats that are capable of reducing the NPHIs' capacity to perform as desired: reliance on partner funding to maintain activities, frequent changes in NPHI leadership or political landscape, and frequent staff attrition and turnover. Sustainable government funding would enable NPHIs to deploy resources quickly, resulting in effective emergency response.<sup>6</sup> Furthermore, NPHIs should ensure that they have adequate and timely access to emergency contingency funding for scaling-up response, which may help to reduce reliance on donor funding. NPHIs are encouraged to detail an employee value proposition that includes the attraction, development, and retention of a competent workforce.



## 3.0. Regional NPHI Centres of Excellence

An NPHI Centre of Excellence (CoE) is recognized as having advanced capacity and best practices in at least one key public health function and would serve as a reference centre in the region. The selection of Regional Centres of Excellence (CoEs) will consider organizational capacity, strong leadership and governance, the geographic location, language, the population being served, and expertise in key priority areas. Considering the above, regional NPHI CoEs will need to be designated to enhance the administrative, human, and technical capability and the infrastructural capacities of other NPHIs.

### 3.1 Characteristics of NPHI Centres of Excellence

Designating CoEs involves careful consideration of various criteria to ensure that they possess advanced capacity and best practices in core public health functions. CoEs will serve as regional hubs for advancing public health knowledge, expertise, and capacity-building efforts. These CoEs play a vital role in strengthening the overall public health infrastructure and response capabilities within their respective regions. Criteria for designating a CoE should include the following:

**Demonstrated Expertise:** The CoE should possess demonstrated expertise and excellence in at least one of the following core public health functions: surveillance and disease intelligence; emergency preparedness and response; laboratory systems and networks; information systems; public health research; and health workforce development.

**Strong Leadership and Governance:** The CoE should have strong leadership and governance structures in place to effectively guide its operations. This includes having experienced and knowledgeable leadership, clear decision-making processes, and transparent accountability mechanisms.

**Geographic Location and Population Served:** The CoE's geographic location should be strategic, ideally positioned to serve a significant

population within its region. It should also consider the specific health needs and challenges of the population it serves.

**Human Resource Capacity:** The CoE should have sufficient human resources to support local and regional operations, with a demonstrated mechanism by which to draw on surge capacity. This includes having well-trained staff and access to relevant resources and technologies.

**Technical Capability:** The CoE should demonstrate technical capability in its specialized area(s) of focus. This includes having access to cutting-edge research, innovative methodologies, and best practices in public health interventions.

**Infrastructure:** The CoE should possess adequate infrastructure to support its activities, including laboratory facilities, data management systems, communication networks, and other essential resources interlinked with the PHEOC. Infrastructure should be modern, well-maintained, and equipped to handle the demands of its specialized functions.

**Collaborative Partnerships:** The CoE should have established collaborative partnerships with other NPHIs, academic institutions, governmental agencies, non-governmental organizations (NGOs), and international partners. These partnerships enhance the CoE's capacity for knowledge exchange, resource sharing, and collaborative research initiatives.

**Capacity Building and Training Programs:** The CoE should have a track record of capacity building and training programs to enhance the skills and knowledge of public health professionals within its region. This includes providing mentorship, technical assistance, and educational opportunities to support professional development.

**Evidence of Impact:** The CoE should be able to demonstrate tangible evidence of its impact on public health outcomes within its region. This may include successful disease control initiatives, contributions to research and

innovation, or improvements in public health infrastructure and systems.

**Commitment to Continuous Improvement:** The CoE should be committed to continuous improvement and learning. This entails regularly evaluating its performance, seeking feedback from stakeholders, and adapting its strategies and approaches to address evolving public health challenges.

### 3.2 Roles of the regional Centers of Excellence:

The Centre will serve as a hub for knowledge exchange, technical assistance, and capacity building, helping NPHIs in the region improve their effectiveness in managing public health challenges and emergencies. To better align the role of the Regional NPHI Centre of Excellence with the core functions of National Public Health Institutes (NPHIs), we can categorize the Centre's support based on the typical core functions of NPHIs.

**Surveillance & Monitoring:** The Centre will support National Public Health Institutes (NPHIs) in enhancing their disease surveillance systems by establishing standardized practices for monitoring and data collection across the region. This will involve developing common guidelines and frameworks for the consistent gathering, analysis, and reporting of epidemiological data. In addition, the Centre will deliver specialized training programs to build the capacity of surveillance personnel, ensuring they are proficient in modern surveillance techniques, outbreak detection, and data interpretation. By strengthening data collection systems and improving reporting protocols, the Centre will help NPHIs incorporate new technologies and improve the timeliness and accuracy of information sharing. This also includes ensuring seamless data flow between local, national, and regional health authorities, facilitating coordinated responses during health crises.

**Health Information Systems (HIS):** The Centre will assist NPHIs in strengthening their health information systems to enhance the management, analysis, and dissemination of health data. This includes upgrading IT infrastructure and supporting the integration of health data from various sectors into

unified systems. The Centre will also promote interoperability between NPHI data systems across countries, enabling real-time health data exchange to support better monitoring of health trends, resource sharing, and coordinated responses. A key priority will be to ensure data privacy and security, providing training to NPHI staff on data protection protocols and compliance with international standards, such as GDPR or local equivalents, to safeguard sensitive health information.

**Laboratory Services:** The Centre will support NPHIs in improving their laboratory capacity by assisting with the upgrading of diagnostic tools, providing access to advanced technologies, and enhancing laboratory infrastructure. This will ensure that NPHIs are capable of performing accurate and timely diagnostic tests, which are essential for detecting and controlling infectious diseases. The Centre will offer training programs and certification courses for laboratory staff, focusing on diagnostics, quality control, and safety protocols to elevate diagnostic capabilities, particularly in handling emerging pathogens. Additionally, the Centre will facilitate access to cutting-edge diagnostic tools and methodologies, enabling NPHIs to conduct high-quality testing for diseases like Ebola, Zika, COVID-19, and other infectious threats.

**Public Health Research:** The Centre will help NPHIs build their public health research capacity by supporting the design, conduct, and dissemination of impactful research. This includes providing infrastructure support, training in research methodologies, and promoting evidence-based policy development. The Centre will encourage regional and international collaboration, facilitating joint research projects and the sharing of findings on key public health issues. This will foster a network of researchers who can pool resources, share expertise, and address common health challenges. In addition, the Centre will assist in upgrading research facilities, providing access to advanced research tools, and training staff in data analysis techniques to enhance the quality and scope of public health research across the region.

**Emergency Preparedness & Response:** The Centre will collaborate with NPHIs to strengthen their emergency preparedness by helping

them develop comprehensive emergency plans and response protocols. This includes improving coordination mechanisms to respond effectively during outbreaks or health crises. The Centre will organize simulation exercises and real-time drills to test readiness, ensuring that health workers can quickly mobilize and execute response plans. It will also help build rapid response teams trained to react immediately to health emergencies, ensuring a workforce that is always prepared for unforeseen crises. Additionally, the Centre will assist in developing logistical systems for resource management, ensuring that medical supplies, equipment, and personnel are available and can be rapidly deployed in emergency situations.

**Workforce Development:** The Centre will focus on building a skilled and competent public health workforce across the region through training, certification, and continuous professional development (CPD). This includes identifying skill gaps, offering tailored educational programs, and certifying professionals in key areas of public health. To address specific training needs, the Centre will conduct skills assessments across member states to ensure that NPHI personnel are equipped with the most relevant and up-to-date skills. The Centre will also offer certification programs in areas such as epidemiology, laboratory diagnostics, and public health management, providing a framework for ongoing professional growth and ensuring that the workforce remains effective in responding to public health challenges.

**Policy Development & Advocacy:** The Centre will assist NPHIs in developing and refining public health policies by providing evidence-based guidance and facilitating collaboration on key health priorities. This will include helping countries align their national policies with regional and global health objectives, such as the Sustainable Development Goals (SDGs) and International Health Regulations (IHR). The Centre will foster cross-border collaboration on policy issues, creating platforms for NPHIs to share experiences, challenges, and solutions. This will promote more consistent policy approaches to common health threats, such as infectious diseases and non-communicable diseases. Additionally, the Centre will act as a hub for knowledge exchange, ensuring that NPHIs have access to the latest public health research, policy innovations, and best practices, helping to shape responsive and effective public health strate

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# Appendices

## Appendix A: NPHI Core Functions

The following describes the NPHI Core Functions (CFs), providing examples for each. Note that these examples are not exhaustive and that some CFs can overlap in their implementation.

### CF1. Population health and health-related indicators

This CF is about ensuring that information about the overall health status in the country, and about specific conditions and sub-populations, is easily accessible and understandable. In many countries, health observatories are being established to consolidate and synthesize public health and other data and indicators. These observatories make data available to a range of users and often publish reports and provide easily understandable graphics, dashboards, and other materials to encourage the use of data for decision-making.

This CF includes:

- Describing and communicating about
  - *Rates and trends of health indicators, including mortality*
  - *Rates and causes of disabilities and chronic conditions*
  - *Health status of sub-populations of particular concern*
- Encouraging use of population health and health-related indicators for policy and program development and assessment

### CF2. Preparedness, detection, and response to emergencies and disasters. This includes surveillance and laboratory services.

This CF is among the largest and includes a range of activities essential for the detection, confirmation, and response to emergencies. Ideally, countries will take an all-hazards approach in CF 2, but at the very least, they should be engaged in One Health efforts. They play critical roles in global health security efforts and responses to the International Health Regulations (IHR). In some countries, the National IHR focal point is the NPHI. Surveillance activities are not limited to infectious diseases, but also include non-communicable diseases (NCDs), injuries, and violence. CDC: NPHI Core Functions

This CF includes:

- Preparing for emergencies, including developing SOPs and preparedness and response plans, training on incident command, tabletop exercises and simulations
- Detecting outbreaks and emergencies quickly and

responding as needed

- Ensuring appropriate response capacity at all levels (national, regional, district, community)
- Conducting surveillance for priority conditions (data collection, analyses, interpretation, policies/recommendations)
- Ensuring laboratory capacity to detect and confirm conditions of concern, with the capacity appropriate for each level of the public health system (e.g., national, regional, district). Strong laboratory networks are critical for surveillance and for ensuring access to necessary diagnostic testing
- Establishing Emergency Operation Centres (EOCs) to coordinate information and resources for emergency response, as well as manage critical public health functions during non-emergency periods.
- Participating in the development and dissemination of key messages to the public in response to public health events
- Developing partnerships with non-health entities (e.g., Ministries related to environmental health, animal health, and trade; academic institutions; NGOs; etc.) to conduct vulnerability and risk assessments and to coordinate the response to and mitigate various health-threatening issues

### CF3. Disease prevention and health promotion

Almost all NPHIs have some disease prevention and health promotion efforts related to, for example, maternal and child health, immunization, and nutrition. A comprehensive NPHI has breadth in both the types of activities it conducts (e.g., providing multi-faceted programs in collaboration with partners) and in the issues it covers (which might range from immunization to non-communicable disease prevention to injury prevention) related to this CF.

This CF might include:

- Ensuring primary prevention, such as through evidence-based support for vaccination programs
- Ensuring secondary prevention, such as evidence-based screening programs
- Conducting multi-faceted educational and social communication activities aimed at promoting healthy behaviours and environments

#### CF4. Advocacy, communication, and social mobilization

Communication and social mobilization are approaches to engaging civil society in helping the NPHI achieve its goals.

This includes:

- Developing material and resources specifically for use by community organizations and other civil society groups
- Soliciting civil society input into programs and policies
- Developing messages based on target audiences, using a variety of media for the greatest reach
- Building coalitions with civil society and private partners

#### CF5. Policies and plans that support public health efforts

This CF involves using data to guide and support the development of evidence-based policies and plans, and to recommend evidence-based approaches that policymakers, communities, and partners can use to improve health.

Activities under this CF include:

- Articulating strategic approaches to addressing priority health issues of the country
- Formally synthesizing research results, e.g., through systematic reviews or other processes, and tailoring findings to be relevant to the country's context
- Ensuring the widespread dissemination and encouraging the uptake of evidence-based public health efforts

#### CF6. Health protection, and support for regulation and enforcement capacity

- Ensuring technical capacity for risk assessments and actions needed for environmental, occupational and food safety
- Having the capacity to generate or contribute to drafts of new laws and regulations aimed at improving public health, as well as promoting healthy environments
- Providing evidence-based recommendations regarding health protection and strengthening of regulations and enforcement related to protecting health

#### CF7. Evaluation and promotion of equitable health services

- Identifying barriers to health access, including those that impact certain subpopulations disproportionately

- Identifying preventive health needs among populations that may encounter barriers to receiving health services

#### CF8. Public health workforce development

- Identifying public health workforce needs and developing programs, such as field epidemiology training programs (FETPs), or working with universities and other partners to address them
- Linking with schools at various levels to ensure the development of a pipeline of future public health professionals
- Articulating core competencies for public health positions at all levels of the public health system

#### CF9. Evaluation, prevention, and control of public health issues in clinical settings

- Conducting surveillance for health-care related issues of national importance, such as hospital-acquired infections and antimicrobial resistance, and participating in efforts to address these issues
- Working with professional organizations and clinical networks to ensure that preventive health care is provided

#### CF 10. Research in public health

Research priorities are often determined by donor interests and the availability of funds, leaving many critical questions unanswered. The NPHI should define the research needed to answer questions critical to improving the country's public health and work to ensure that these research needs are addressed.

- Working with the MoH and internal and external partners to identify the highest priority research questions and ensuring that these are addressed
- Conducting monitoring and evaluation projects and research to identify ways to improve the public health system, including emergency response and surveillance, and to prevent public health problems from occurring (e.g., by conducting research as part of an outbreak investigation)
- Ensuring that research results are used to inform policy development, program decisions, resource prioritization, and service delivery
- Supporting operational research on new research methodology and the use of innovative technologies for improving public health



## Appendix B: Questions to Guide NPHI Development

This appendix includes questions that leaders and staff may want to consider early on, as they start initial planning to develop an NPHI.

### Overview Questions

- What are the reasons an NPHI is being considered?
- What are the perceived benefits to having an NPHI?
- What are the perceived negative aspects of creating an NPHI?
- Is there already a body that brings together relevant public health functions but is not recognized as an NPHI?
- What would change as a result of NPHI creation?
- What is the desired timeline for the NPHI creation?
- What is the current organizational structure of the Ministry of Health and how will NPHI relate to the MoH?

### Functions of the NPHI

It can be helpful to first identify which Core Functions are to be considered as part of the NPHI so that the initial discussions can be focused on the highest-priority issues.

- What are the priority functions envisioned for the NPHI?

For each priority function:

- What groups currently have national-level responsibility for this function?
- If multiple organizations have responsibility,
  - \* How are efforts divided?
  - \* How are efforts coordinated? Is there an existing public health entity that brings together relevant governmental public health operations but is not recognized as a NPHI?

### Enabling factors and potential barriers:

- Is there a high-level champion (e.g., Minister, Director General, Secretary General) who can be responsible for championing the NPHI and garnering strong political will to sustain the creation process?
- Is there a strong dedicated leader with experience in public health management who has the capacity to lead and execute the formation of an NPHI?
- Are there existing legislative frameworks, decrees, laws, or other documents that grant authority for an NPHI to carry out public health core functions?
  - \* If not, what legal framework is needed?
  - \* What are the enabling factors for and barriers to

- obtaining a legal framework?
  - \* What other legislative frameworks, decrees, laws, or other documents exist that grant authority to the MoH or other ministries that address public health functions?
- \* Is there a plan to create a parastatal institution?
  - \* If so, what are the enabling factors for and barriers to achieving this?
  - \* Would seeking parastatal status be part of the initial NPHI creation, or would it be pursued once the NPHI has been created?
  - \* What would be the impact on the timeframe for NPHI creation?
  - \* How would the ability of the NPHI to influence MoH decision-making be assured?
- What are opinions about an NPHI among MoH and other potentially impacted entities?
  - \* How much do they understand about NPHIs?
- What external partners are interested in having an NPHI created, and which are concerned?
  - \* What are their reasons for supporting or having concerns about NPHI creation?
  - \* How can these barriers be minimized?

### Resource needs and availability

- Human resources
  - \* What people and salaries are available to become part of the NPHI?
  - \* Are there funds for additional staff?
  - \* What human resource gaps are most critical to fill?
- Physical resources
  - \* Is there a space identified for the NPHI (building or offices)?
  - \* If multiple units will be combined yet they will remain in different locations, and what will be done to enhance collaborative work?
  - \* Is there a plan for eventual co-location?
  - \* Are there immediate needs, e.g., for renovation of other physical changes?
- Funds to support NPHI activities
  - \* What funds are available to support NPHI activities? These might come from existing activities that would become part of the NPHI.
  - \* Are there funds for new activities?
  - \* Which new activities are most important to find funding for?
  - \* What are the plans for resource mobilization?
- Donor interests
  - \* Are there specific areas likely to be of interest to specific partners that link to national priorities?
  - \* What form of support is available (e.g., financial or technical)?

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