



MINISTRY OF HEALTH

National Public Health Laboratory



STRATEGIC PLAN 2016 - 2020

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ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
AFRO	Africa Regional Office
AMREF	African Medical and Research Foundation
APHL	Association of Public Health Laboratories
ART	Antiretroviral Therapy
CDC	U.S. Centers for Disease Control and Prevention
CHAI	Clinton Health Access Initiative
DSRU	Division of Disease Surveillance and Response Unit
DHIS	District Health Information System
DQA	Data Quality Assessment
EAPHLN	East African Public Health Laboratory Network
EQA	External Quality Assessment
GDP	Gross Domestic Product
GIS	Geographical Information System
HIV	Human Immunodeficiency Virus
ICT	Information Communication and Technology
IHR	International Health Regulations
IDSR	Integrated Disease Surveillance and Response
ISO	International Organization for standardization
KEBS	Kenya Bureau of Standards
KEMSA	Kenya Medical Supplies Authority
KEMRI	Kenya Medical Research Institute
KENAS	Kenya Accreditation Service
LIMS	Laboratory Information Management System
M&E	Monitoring and Evaluation
MoH	Ministry of Health
MSH	Management Sciences for Health
NASCOP	National AIDS & Sexually Transmitted Infections Control Program
NCC	Nairobi City County
NGO	Non-Governmental Organization

NICD	National Institute of Communicable Diseases
NMARL	National Malaria Reference Laboratory
NPHL	National Public Health Laboratory
PT	Proficiency Testing
PCR	Polymerase Chain Reaction
QA	Quality Assurance
QMS	Quality Management System
SLIPTA	Stepwise Laboratory Improvement Process Towards Accreditation
SLMTA	Strengthening Laboratory Management Towards Accreditation
SOP	Standard Operating Procedure
SWOT	Strength, Weaknesses, Opportunities & Threats
TB	Tuberculosis
TOT	Training of Trainers
UN	United Nations
USAID	United States Agency for International Development
WB	World Bank
WHO	World Health Organization

FOREWORD

The aim of Division of National Public Health Laboratory (NPHL) 2016-2020 Strategic Plan is to define the NPHL strategic direction to achieve its core mandate of delivery of safe, reliable, quality laboratory services that meets national health priorities and international requirements and standards. This will in turn lead to protecting the health of Kenyans against new and reemerging health threats.

NPHL is a public health facility comprising of four (4) reference laboratory units that provide referral services linking national, international and county laboratories. In its current form, the NPHL is mandated to perform specialized testing for priority infectious and non-communicable diseases, laboratory-based disease surveillance, and to provide quality assurance for the public health laboratory network. In its new role as a division under the Department of Preventive and Promotive Health, NPHL has a clear mandate that grants it stability and helps establish the right leadership with a functional management team. The implementation of this strategic plan will enhance and strengthen the planning and resource mobilization efforts for the institution.

In the recent years, partnership with donors and other stakeholders has seen increased funding and subsequently improved capabilities of NPHL. This is particularly true in development of laboratory infrastructure, ICT, equipment and human resource development. Although MOH has continued to provide more funding to support laboratory services, this funding is not adequate to support all the functions thus calling for supplementation through donor funding. Initiation of partnership agreements with institutions of higher learning for training is expected to strengthen advancement in technology and skills development.

A well-established M&E system and ICT infrastructure has strengthened knowledge management through data acquisition, processing and information sharing. However, there exists a gap due to lack of a central database regarding location of medical laboratories and their service provision capacities across the counties as well as lack of ICT policy to guide efficient and secure use of information systems. Kenya faces risks of bioterrorism; emergence of new diseases that occur with severe consequences; and growing antimicrobial resistance of pathogens. The current national Quality management system (QMS) lacks adequate policy guidelines to assure quality laboratory practices. There is need to uphold safe practices and biosafety/biosecurity measures to ensure safety of workers, the public and the environment as well as compliance with international standards.

Currently, NPHL has an improved physical infrastructure to support its functions. New laboratory facilities were recently constructed and are being utilized. Five new satellite public health laboratories have been constructed through funding from the World Bank to serve as referral diagnosis and surveillance laboratories. These laboratories are located in Busia, Trans Nzoia, Wajir, Kilifi and Machakos counties. The chronic problem of equipment down time needs to be addressed by assuring that there are adequate maintenance contracts in place and biomedical engineering technologists are trained.



Dr. Kioko Jackson K. OGW
Director of Medical Services

ACKNOWLEDGEMENT

The development process of this strategic plan was done through consultations with stakeholders. The process was organized through clearly defined working groups reflecting the five thematic areas namely: Laboratory Services; Monitoring & Evaluation, ICT & Communication; Laboratory Quality Management and Biosafety/ biosecurity; Leadership, governance, partnership, financing and human resource; and Infrastructure, equipment, supplies and logistics. MoH staff provided the required leadership to these groups.

The outputs from the groups were harmonized, summarized before being consolidated to produce the first draft. This draft was shared internally and externally with stakeholders who provided invaluable inputs which have been duly incorporated into this final document.

This task would not have been accomplished without the support from the Director of Medical Services and the Head of the Department of Preventive and Promotive Health. I wish to thank all the members of the Technical Working Group and the hired consultant for the development of this plan for the good job done.

The development of this plan was made possible through the financial assistance from the Defense and Threat Reduction Agency (DTRA), U.S. Department of Defense to the Centers of Disease Control and Prevention (CDC-Kenya) and through the Association of Public Health Laboratories (APHL) as the leading implementing partner. Other partners who provided technical assistance to the process included CDC-Atlanta and MSH-Kenya to whom we are very grateful.



Mr. Mamo Umuro

Head, National Public Health laboratory



A laboratory technologist examines samples collected for parasitic infection

Chapter I

Introduction

The Government of Kenya has entrenched strategic planning as a mechanism to improve efficiency and effectiveness in public service delivery. This 5 year strategic plan defines the strategy or direction of National Public Health Laboratory (NPHL) and describes how the NPHL will support the implementation of the Ministry of Health (MoH) strategic plan and achieve the goals of the Kenya Health Sector Strategic and Investment Plan (2014-2018)¹.

Rationale for NPHL Strategic Plan

The NPHL through this strategic plan will plan, develop, implement and sustain sufficient capabilities and capacities to ensure the health of the population and meet mandated international requirements that protect against major disease risks and outbreaks.

The plan will serve as an instrument for identifying deliverables for the performance contracting mechanism and key performance indicators for objective annual staff appraisal. Further, the plan is an instrument through which the NPHL will communicate with all its stakeholders and provide a framework for resource planning and mobilization to achieve its functions and objectives.

The overarching goal of Kenya Vision 2030² is to be a globally competitive and prosperous nation with a high quality of life. The Health Sector has articulated how it will provide an efficient and high quality health system with the best standards to improve the livelihoods of Kenyans, in the Health Policy (2014-2030)³. With a bias towards health promotion and preventive care, the health policy defines six objectives to guide the prioritization of investments in order to achieve the policy goal. The policy objectives are:

1. Eliminate communicable diseases
2. Halt and reverse the burden of non-communicable diseases and mental disorders
3. Provide essential care
4. Reduce the burden of violence and injuries
5. Minimize exposure to health risk factors
6. Strengthen collaboration with private and other sectors that have an input on health.

An effective and efficient national public health laboratory system is essential for achievement of these policy objectives particularly the elimination of communicable diseases, provision of essential healthcare and containing the burden of non-communicable diseases. Public health laboratories also have an important role in surveillance, detection, response and control of disease threats and outbreaks; as well as effective planning, implementation, monitoring and evaluation of public health programs.

Linkages of NPHL Strategic Plan to National and International Frameworks

The NPHL operates within the guidance of various policy and strategy intents of Kenya government including the Kenya Health Policy (2014 – 2030)³ outlining drive of the country towards attaining the overall health aspirations of the people of Kenya informed by the Kenya's Vision 2030², the Constitution of Kenya (2010)⁴ and the global health commitments included in the IHR (2005)⁵ and the WHO/AFRO Maputo Declaration 2008⁶ on strengthening of laboratory systems.

In this context the World Health Organization (WHO) through its African Regional Office (WHO/AFRO) developed the Integrated Disease Surveillance and Response (IDSR, 1998)⁷ strategy, an integrated approach to streamline disease surveillance and response.

The specific goals of this strategy are to strengthen county-level surveillance and response for priority diseases, to integrate surveillance with laboratory support, and to translate information generated from surveillance and laboratory data into specific public health actions², which are also three key NPHL areas of mandate. Further, WHO adopted the International Health Regulations in 2005, which came into force on June 15, 2007 and required all states parties to meet minimum national core capacities for surveillance and response.

The laboratory capacity requirements to comply with the IHR mandate are described in Laboratory Capacity Requirements for International Health Regulations and Their Implementation in the WHO African Region (2013)⁸ and define six pillars of core laboratory services capacity;

1. Coordination of laboratory services,
2. Capacity for priority diseases and events,
3. Quality management systems,
4. Specimen collection and transportation,
5. Biosafety and biosecurity,
6. Laboratory-based surveillance and public health actions.

Process of developing NPHL Strategic Plan 2016-2020

The process of developing this strategic plan involved several steps. The plan was built on a draft strategic plan that had been under development by NPHL. This was followed by desk review of key Ministry of Health Policy documents including the National Health Policy³, National Health Sector Strategic and Investment Plan (KHSSP 2013-2017)¹, and program specific strategic plans such as the Kenya AIDS Strategic Framework (KASF 2014/15 -2018/19)⁹. This was followed by key informant interviews on the current situation at NPHL.

The informants included NPHL staff and key external stakeholders. The process culminated in a three-day workshop. Interviews with the NPHL staff as well partners and a three days stakeholders' workshop generated the strength, weaknesses, opportunities and threats (SWOT) analysis to NPHL capacity to execute its mandate. Stakeholders input and outputs from the SWOT analysis were used to develop goals, objectives, strategies and activities. A draft Plan was then developed and shared with internal and external stakeholders.

The major stakeholders and their roles are depicted in Table below.

NPHL Stakeholders and Roles

Stakeholders Name	Role
Ministry of Health	<ul style="list-style-type: none"> • Planning and Financing • Human Resource Management • Procurement of supplies and equipment • Policy and infrastructure development • Logistics
World Bank	Financing in: <ul style="list-style-type: none"> • Lab networking • Cross border disease surveillance • Training and capacity building • Infrastructure improvement • Operations research • Performance Based Financing • Human Resource support
Centers for Disease Control and Prevention (CDC)	<ul style="list-style-type: none"> • Direct financial support <ul style="list-style-type: none"> ◦ Procurement of equipment and reagents ◦ Infrastructure development and improvement • Provision of technical assistance • Capacity building • EQA Support
USG/PEPFAR	<ul style="list-style-type: none"> • Servicing and maintenance of equipment • Commodity distribution • Infrastructure development and improvement
WHO	<ul style="list-style-type: none"> • Reporting improvement • Technical assistance
APHL	<ul style="list-style-type: none"> • Strengthening Laboratory information system • EQA support
KEMRI	<ul style="list-style-type: none"> • Supplies of consumables (Laboratory media) • Specimen referral

Stakeholders Name	Role
Global Fund	<ul style="list-style-type: none"> • Infrastructure development and improvement Financing • Procurement of equipment and reagents • Human Resource support
Management Science for Health	<ul style="list-style-type: none"> • Data tools development and review • Support policy development
CHAI	<ul style="list-style-type: none"> • Support reporting systems development
University of Maryland	<ul style="list-style-type: none"> • Laboratory Management Strengthening • Laboratory Monitoring and Evaluation Strengthening
AMREF	<ul style="list-style-type: none"> • Support capacity building • EQA support
KEMSA	<ul style="list-style-type: none"> • Supplies, forecasting and quantification
Kenya Bureau of Standards	<ul style="list-style-type: none"> • Standards development • Calibration of equipment
National Referral Hospitals	<ul style="list-style-type: none"> • Specimen referral networks
County Laboratories	<ul style="list-style-type: none"> • Specimen referral • Data sharing
Ministry of Public Works	<ul style="list-style-type: none"> • Technical advice on laboratory designs and lay-out • Infrastructure maintenance
KENAS	<ul style="list-style-type: none"> • Laboratory accreditation and certification • Training of assessors, mentors and auditors
NICD	<ul style="list-style-type: none"> • Provide EQA panels
Micronutrient Initiative (MI)	<ul style="list-style-type: none"> • Capacity building, procurement of equipment and reagents
Global alliance for improved nutrition (GAIN)	<ul style="list-style-type: none"> • Capacity building, procurement of equipment and reagents
COMESA	<ul style="list-style-type: none"> • Capacity building and EQA
Welcome Trust	<ul style="list-style-type: none"> • Technical assistance

Chapter 2

Public Health Laboratory Challenges

The leading causes of death and disability in Kenya include: HIV/AIDS, conditions arising during perinatal periods, lower respiratory infections, malaria, tuberculosis, and diarrheal diseases. Together, these diseases represent a huge burden on the health and well-being of the population contributing to morbidity, disability, and mortality. Besides the implication and direct effect on individuals and families, the social and economic impact on society and the nation at large is enormous. To mitigate these impacts, governments often take responsibility and implement measures to protect and promote the health of their citizens through development of efficient, effective and equity oriented health system. Laboratories form an essential and critical part of this system as they support clinical diagnosis as well as confirmation of etiologies of public health emergencies.

The laboratory system often experiences outstretching of the already limited resources as it endeavors to meet the challenges ranging from Antimicrobial Resistance (AMR) patterns (such as MDR-TB), proliferation of Non-communicable diseases, health threats from emerging and re-emerging diseases and threats of bioterrorism among others. There has been a lot of emphasis on diagnosis of infectious diseases thus neglecting development of laboratory systems targeting non-communicable diseases. There is also a heavy toll placed on laboratory as the country strives to meet international global obligations such as the International Health Regulations and the global UNAIDS 90:90:90 targets for HIV.

Staff turnover necessitated by exit of staff from the profession in pursuit of other opportunities as well as natural attrition, has resulted in constrained work force that barely copes with the huge demand for testing. Technological turnover is also quite high as modern equipment are being invented and the staff are not equally trained to match.

Chapter 3

Functions of the National Public Health Laboratory

The National Public Health Laboratory is one of the Divisions in the Department of Preventive and Promotive Health at the National Ministry of Health. The following functions define its mandate;

1. Provide quality specialized testing service capabilities to assure diagnostic and disease surveillance capacity to meet the national health needs.
2. Provide management of laboratory-based disease reporting for early disease detection, epidemic alert, rapid response to outbreaks and support of epidemiological and prevention programs.
3. Provide referral testing services for agents that are highly pathogenic, requiring advanced technology and/ or high containment facilities, and are a public health concern; coordinate with the other national referral laboratories in a country network to assure access to needed testing services, timely communication of validated results to national and international health authorities and sharing of specimens, expertise and resources in outbreak and investigation situations.
4. Lead a national external quality assurance program for all public and private human diagnostic laboratories in Kenya; attain independent accreditation for NPHL laboratories; advise and support national efforts for certification and accreditation of diagnostic laboratories.
5. Develop a comprehensive laboratory information management system to collect, compile and process data from public and private laboratories; advance technology and infrastructure to enable electronic reporting of laboratory test data to health information systems, of test data among national referral laboratories and of test data to international and other national health agencies.
6. Develop a coordinated plan with all relevant MoH departments and other entities with a role in commodity supply for laboratories and equipment maintenance to assure timely, efficient supply of needed commodities and reliable operation of laboratory instruments and equipment; evaluate and recommend instruments and equipment for public health laboratories to assure standardization and reliability of testing services as measured and evaluated by the national external quality assurance program.
7. Develop national guidelines for biosafety, waste management and biosecurity throughout the public health laboratory system and for private laboratories; lead efforts to establish regulatory and certification guidelines and identify dedicated funding from global public health programs, private partnerships, epidemic alert and response programs, and disease prevention and control programs to assure adequate resources for safe and secure operation of laboratories.

8. Develop a comprehensive national laboratory human resources plan for the public laboratory system to meet projected requirements, taking into consideration minimum staffing requirements for each tier level of the national health laboratory system; required cadres of laboratory workers including supervisors and laboratory auditors; and laboratory worker production, recruitment and attrition rates.
9. Develop a dedicated national budget for the National Public Health Laboratory, based on detailed costing estimates, with adequate financing mechanisms to implement the Strategic Plan.

The NPHL functions are implemented through seven National Reference Laboratories, together with the management, administration and support units. The Reference laboratories include National Microbiology Laboratories (TB reference Laboratory, Public health Bacteriology & Mycology Reference and Immunology Reference Laboratory) National Virology Laboratories (National HIV Reference Laboratory, National Influenza Centre and BSL3 Virology Laboratory) and National Food Safety and Nutrition Laboratory. It is through these units that NPHL is involved in implementing the key functions of the Ministry which include health policy formulation, health regulation, national referral facilities, capacity building and technical assistance to counties.

Chapter 4

Situation Analysis Of Laboratory Service Delivery

SWOT analysis

Thematic area	Strengths and Opportunities	Weaknesses and Threats
Laboratory services	<ul style="list-style-type: none"> • Ability to conduct surveillance • Establishment of specialty laboratory units (Influenza and Oncology reference labs) • Introduction of new technology (molecular testing) 	<ul style="list-style-type: none"> • Emergence of new diseases • Inadequate funding for essential facilities • Inadequate specialized knowledge and skills • Aging staff force that are on the verge of retirement
Monitoring & Evaluation, ICT & Communication	<ul style="list-style-type: none"> • Data collection and reporting tools uploaded on the DHIS2 platform • Capability for data collection, analysis and reporting • ICT and Laboratory Information System (LIS) infrastructure • Increasing demand for information 	<ul style="list-style-type: none"> • ICT staff who are hired on contract through partner support • Low coverage of internet connectivity in the counties • Lack of data focal persons in counties • Unclear county strategic M&E indicators • Lack of Data Quality Mechanisms • LIS-DHIS interoperability not fully done • Multiple reporting channels • Most county laboratories do not have LIS in place • Data sharing and networking inadequate
Laboratory Quality Management and Biosafety/ biosecurity	<ul style="list-style-type: none"> • HIV Reference Laboratory ISO certified • Public Health Bacteriology & Mycology laboratory awaiting ISO certification following attainment of 5 stars SLIPTA assessment • Availability of SLMTA mentors • Staff vaccination programs (HBV) in place 	<ul style="list-style-type: none"> • Shortage of reagents and commodities • unavailability of spare parts for equipment maintenance • Frequent power outages • Lack of service contracts for specialized equipment (molecular) • Limited skilled medical engineering

Thematic area	Strengths and Opportunities	Weaknesses and Threats
Leadership, governance, partnership, financing and human resource	<ul style="list-style-type: none"> • Functional organizational structure in place with well-defined roles • Funding has increased over the years from partners and the government allocation. • The draft health bill currently under discussion is expected to further reinforce strengthening of the role of NPHL within the larger health system • Facilitation of staff to attend management courses (offered at the Kenya School of Government, KSG) and short technical courses 	<ul style="list-style-type: none"> • Staff turnover is on the increase • Over reliance on donor support • Parallel programing • Frequent changes in technology • Duplication of public health laboratory services by other players caused by lack of stakeholder coordination and consultations in the implementation of the National Health Sector Strategic and Investment Plan
Infrastructure, equipment, supplies and logistics	<ul style="list-style-type: none"> • New offices and laboratories have been built or refurbished • Availability of some equipment • Availability of biomedical engineering technologists to maintain equipment • Public Private Partnership initiatives is place 	<ul style="list-style-type: none"> • Shortage of reagents and commodities • unavailability of spare parts for equipment maintenance • Frequent power outages • Lack of service contracts for specialized equipment (molecular) • Limited skilled medical engineering

Status of individual Laboratory Units

National Microbiology Reference Laboratory

This reference laboratory is made up of the Public Health Bacteriology & Mycology Laboratory, TB laboratory and Immunology and Biochemistry Laboratory. The Public Health Bacteriology & Mycology Laboratory conducts microbiological testing on water, food and environmental samples. It also performs specialized tests such as typing and characterization of common microorganisms and antimicrobial resistance (AMR) surveillance. However, there is lack of a proper and efficient specimen referral system from the county laboratories. The laboratory has recently been refurbished and has good working space and has recently been ISO 15189 certified. The current staff adequately handles the laboratory's workload but specialized skills are needed especially in the area of molecular techniques. The laboratory sometimes lacks specialized media to culture all applicable priority disease-causing organisms and some reagents for key referral tests.

The TB Laboratory plays a key role in TB diagnosis, prevention and control in Kenya. It is capable of performing tests such as solid culture (LJ), liquid culture (MGIT), drug susceptibility testing (DST) for 1st line drugs on liquid medium, microscopy (ZN & FM), LPA (R/H), GeneXpert and identification of M. tuberculosis complex (MPT64). The laboratory is further involved in providing External Quality Assurance (EQA) for microscopy and technical assistance to county laboratories. The laboratory networks with and receives technical assistance and training from the Queensland Mycobacterial Reference Laboratory in Brisbane, Australia, WHO supranational reference laboratory (SRL) and has also enrolled the GeneXpert sites in a CDC Atlanta-led PT scheme. The lab is currently building capacity to test for second line drug resistance and has a robust laboratory information management system. However, there is a delay in turnaround time (TAT) mainly caused by delay in transmission of test results to clinicians exacerbated by delay in specimen transportation.

The Immunology (Oncology) and Biochemistry Laboratory is currently capable of performing tests including PSA for Prostate Cancer; CA 19-9 for pancreas/bile ducts cancer; CA 125 for ovarian cancer; alpha fetoprotein (AFP); liver cancer and CA 15-3 (breast cancer). Others are carcino-embryonic Antigen (CEA) for colorectal carcinoma, thyroid function tests, and HbA1c for diabetes monitoring. There is also a multi-test auto analyzer with capacity to run over seventy different assays and trained personnel to run these services. However staff are few and acquiring some of the specialized equipment is a challenge. Lack of awareness about the capabilities of the laboratory among clinicians and the public continues to hinder access and visibility.

National Public Health Virology Laboratory

The referral laboratory is made up of the HIV Laboratory and National Influenza Centre. The HIV laboratory has attained ISO 15189 certification. It is charged with the responsibility of coordinating laboratory testing in HIV diagnostics (e.g. EID), ART monitoring (Viral load, CD4, Biochemical tests) as well as providing leadership and support in HIV Quality Assurance. The laboratory also carries out national laboratory-based HIV surveillance studies for estimation of country HIV prevalence and incidence; HIV drug resistance monitoring; special population surveys; and offers training and mentorship to county laboratories undergoing the SLIPTA process. The human resource capacity and specialty competencies are not sufficient to meet all the testing services, quality assurance and testing demands. Some equipment are not adequately covered by service contracts.

Lower respiratory tract infections are among the leading causes of morbidity and mortality in Kenya. Influenza viruses are implicated in most of the severe cases. The National Influenza Centre was established for surveillance and detection of influenza subtypes. It has capacity to conduct PCR on influenza A & B and sub-types of A. This laboratory is expected to conduct influenza surveillance, diagnosis and report the findings on the global reporting tools such as the WHO's FluNet. Currently, the laboratory gets its samples through sample-split with the CDC NIC laboratory but plans are under way to allocate it one of the surveillance sites to manage fully. The surveillance reports are currently shared with CDC for uploading on the FluNet. The current work force in the laboratory is sufficient both in numbers and skills since the work load is still gradually building up. However, in its current situation, the influenza laboratory conducts molecular diagnostic testing and plans are underway to introduce viral culture.

National Food Safety and Nutrition Laboratory

This laboratory plays a major role in surveillance for priority micronutrient deficiencies described in NHSSP II such as vitamin A, Zinc, Iron and Iodine. This role is additional to testing foods and their products for contaminants and compliance with the legal requirements as stipulated in the Foods, Drugs and Chemical Substances Act (CAP 254) Laws of Kenya. The laboratory has recently been refurbished and equipped with modern equipment such as High Performance Liquid Chromatograph (HPLC), Atomic absorption Spectrophotometer (AAS). The laboratory is seeking further strengthening to be able to test for food related cancer causative agents (carcinogens).

National Parasitology and Neglected Tropical Disease Laboratory

This laboratory comprises of the Malaria and the Tropical Parasitic & Zoonotic Diseases Laboratories. The malaria laboratory provides technical support to the National Malaria Control program (NMCP). Currently the laboratory conducts malaria slides rechecking and malaria refresher training for counties. The laboratory has developed protocol for national proficiency testing and slide rechecking on malaria, the Quality Manual and SOPs and the national quality assurance implementation plan for malaria to be used at counties. There is need for staff mentorship on accreditation process and specialized training. The laboratory also carries out mRDT validation and performs malaria molecular techniques.

The Tropical Parasitic & Zoonotic Diseases Laboratory is newly created with the primary goal of adequately diagnosing these diseases using available advanced laboratory technologies. The laboratory is developing Quality and bio-safety Manuals and SOPs. To achieve the mandate, the laboratory requires equipment and reagents to strengthen its mandate.

Monitoring & Evaluation, ICT & Communication

The M&E unit of NPHL has well-developed data collection and reporting tools (uploaded on the DHIS2 platform) and capability for data collection, analysis, information dissemination and reporting. ICT and LIS infrastructure exists and is functional. With evolving and new technology, demand for information is on the rise though not fully embraced. The staffs are increasingly acquiring better skills in computer, electronic and mobile data manipulation. Gaps are notable in area of ICT staff who are hired on contract through partner support; low coverage of internet connectivity in the counties; lack of data focal persons in counties and unclear county strategic M&E indicators. While the M&E framework is in place, the system is not yet fully implemented. Data quality and utilization needs to be improved. Furthermore, the LIS-DHIS interoperability is not completed as desired. Multiple reporting channels, together with weak data security pose a challenge to a well-functioning system of M&E, ICT and communication. Additionally, most county laboratories do not have Laboratory Information Management Systems (LIMS) in place making data sharing and networking inadequate.

Laboratory Quality Management and Biosafety/ biosecurity

Quality improvement and management is an integral part of modern and safe medical laboratory services. To this end, the HIV and Microbiology Reference Laboratories have achieved ISO certification and more are lined up to receive ISO certification in the near future. Accreditation and certification remains a major part of NPHL as it strives to become a center of excellence in provision of quality public health laboratory services in Kenya. There is a unit overseeing this function with availability of mentors. The accredited laboratories within NPHL offer a great opportunity for learning to other laboratories undergoing the accreditation process. The QM unit has funding mainly through donors or partners to support some of its functions.

There are also improved bio-containment laboratories and staff vaccination programs (HBV) in place. UN security council resolution 1540, which established legally binding obligations on all UN Member States to have and enforce appropriate and effective measures against the proliferation of nuclear, chemical, and biological weapons (WMD), their delivery systems, including by establishing controls and availability of occupational health policy all combine to reinforce the position of the institution in policy and governance related functions.

There exist many challenges to improved quality management and enhanced ability to improved biosafety and biosecurity. These include slow implementation of the national laboratory quality policy and lack of pathogen inventory that would monitor risks of bioterrorism. Further, there is lack of follow-up on bio-risk inspections or assessments. Laboratory employees do not have recommended PPE and are thus at risk of hazardous exposures. Additionally, equipment management is poor or lacking and maintenance tools as well as maintenance contracts do not exist to support all equipment.

Biosafety and biosecurity measures are not adequately addressed and weaknesses include open access to laboratories by visitors, clients, patients or other persons. Management and tracking of staff vaccination profiles needs improvement to enhance further safety of staff against occupational risks.

As an objective, the NPHL desires to develop national guidelines for biosafety, waste management and biosecurity throughout the public health laboratory system and for private laboratories. There is also commitment to lead efforts to establish regulatory and certification guidelines and identify dedicated funding from government and other global public health programs, private partnerships, epidemic alert and response programs, and disease prevention and control programs to assure adequate resources for safe and secure operation of laboratories.

Leadership, governance, partnership, financing and human resource

There is a functional organizational structure in place with well-defined roles. Funding has increased over the years not only from partners and donors but also through the government allocation. The draft health bill currently under discussion is expected to further reinforce strengthening of the role of NPHL within the larger health system. Global focus on public health laboratory services due to increasing trend of infectious diseases is drawing more attention and renewed the need to strengthen public laboratory services, attracting more partners and funding support. There are notable challenges too. Staff turnover is on the increase due to departure of aging staff. This is due to the fact that the role of staff hiring, posting, development and motivation is outside the scope of NPHL.

This institution is only allowed to facilitate staff development in short management courses (offered at the Kenya School of Government, KSG) and short technical courses. Inadequate budget remains an issue of concern.

Even though government funding allotment has increased, there is still over reliance on donor support. Other challenges are parallel programming, frequent changes in technology and duplication of public health laboratory services by other players. This last challenge is probably caused by lack of stakeholder coordination and consultations in the implementation of the National Health Sector Strategic and Investment Plan.

Infrastructure, equipment, supplies and logistics

Through government and donor support, physical infrastructure of the NPHL has seen great improvement recently. New offices and laboratories have been built or refurbished thus providing the much needed space and infrastructure to facilitate efficiency and work performance.

Increased and improved laboratory spaces and availability of some equipment remain the strengths of the NPHL. On maintenance, there are biomedical engineering technologists who are available to handle some level of equipment malfunction and troubleshooting. Goodwill from the government and public private partnership initiatives is another area of strength.

However, shortage of reagents and commodities, unavailability of spare parts for equipment, frequent power outages as well as lack of advanced level training for biomedical engineering technologists to handle equipment that are increasingly becoming more sophisticated remains a major hindrance.

Chapter 5

Strategic Framework for the NPHL 2016-2020

Vision, Mission, goals and core values of NPHL

Vision

A center of excellence in provision of quality and accessible public health laboratory services

Mission

Provide efficient, accessible, responsive and quality public health laboratory services that protect the health of the Nation by detecting, and preventing the spread of diseases

Goal

The goal of the National Public Health Laboratory Strategic Plan 2016-2020 is to contribute to the achievement of the national health goal of attaining equitable, affordable, accessible and quality health care for all

Core Values

Core values of NPHL are: -

1. Teamwork
2. Excellence
3. Professionalism
4. Integrity
5. Efficiency
6. Reliability

Strategic Interventions

Five thematic areas for NPHL strategic plan have been identified. The five thematic areas are:

1. Laboratory Services
2. Monitoring, Evaluation; ICT and Communication
3. Quality Management, accreditation, Biosafety and Biosecurity
4. Leadership, governance, partnership, financing and human resource
5. Infrastructure, equipment and logistics

Strategic interventions are developed for each of the thematic areas. The thematic areas are supported by one or more overall goals, objectives, strategies and a number of activities that build towards strategic direction and achievement of objectives. The detailed descriptions of how each objective will be implemented are provided in Logical Framework (Annex I).

Goals and objectives of NPHL Strategic Plan 2016-2020

Thematic area	Goal	Objectives
Laboratory Services	Provide quality laboratory testing services for surveillance, detection and response to pathogenic agents and other health risks, to control and prevent diseases	Acquire new technology and skill competencies for NPHL and improve standards and ability for continual improvement of efficient and quality laboratory services
		Establish referral among all levels of laboratories in Kenya and between NPHL and international labs
		Improve diagnostic technologies and assays by 2020
Monitoring, evaluation, ICT & Communication	Improve decision-making and planning for public health laboratory services by increasing capability and efficiency of M&E system through innovative and robust ICT & communication strategy	Improve the capacity & efficiency of laboratory monitoring & evaluation system and operationalize the M&E framework
		Provide laboratory information and reports at NPHL through electronic platforms
		Implement a real-time countrywide GIS mapping system that displays laboratory testing capacities at all public health laboratories
		Develop and implement a comprehensive ICT guideline
		Expand and integrate the laboratory information management system (LIMS) with the national health information system and other relevant disease reporting systems
		Improve visibility of NPHL in order to strategically position it within the health sector
Quality Management, accreditation and biosafety/biosecurity	Develop sustainable, comprehensive quality management systems in NPHL	Establish and implement comprehensive quality management systems within NPHL
		NPHL laboratories attain independent accreditation by 2020.
		Support 10 county laboratories to work towards ISO accreditation by 2020
		Strengthen biosafety and biosecurity systems within NPHL consistent with the requirements of ISO 15190
		Support appropriate training and competency development programs to support biorisk management at NPHL and counties
		Implement the UN/WHO regulations for shipment of dangerous goods

Thematic area	Goal	Objectives
Leadership, governance, partnership, financing and human resource	Strengthen capacity of NPHL in management and governance in order to achieve programmatic objectives through coordination, human resource development, financing & performance monitoring.	Strengthen effective leadership and accountability in governance
		Recruit and retain adequate and competent staff to achieve NPHL goals.
		Finance NPHL in a sustainable manner through evidence based planning.
		Establish and strengthen productive and collaborative partnerships
Infrastructure, equipment, supplies and logistics	Sustain and expand laboratory infrastructure, equipment and supply chain management to ensure access to timely and quality laboratory service.	Strengthen laboratory infrastructure at NPHL to meet ISO standards by 2020
		Establish equipment calibration center and maintain systems to assure NPHL equipment is maintained properly
		Establish and maintain systems for equipment specifications to facilitate acquisition of appropriate equipment by 2020
		Strengthen commodity procurement mechanisms to ensure reliable and timely availability of quality supplies required for testing services by 2020



Lab scientist examining a specimen

Chapter 6

Implementation Plan

Implementation plan

The activity schedules for each strategy and objective is listed in the table below

Laboratory Services

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
Objective 1: Acquire new technology and skill competencies for NPHL and improve standards and ability for continual improvement of efficient and quality laboratory services								
<u>Strategy 1.1:</u> Support lab-based surveillance by prioritizing 20 infectious diseases and diagnostics	Activity 1.1.1. Identify assay requirements for 20 priority communicable diseases	Ability to conduct assays for 20 priority communicable diseases	X	X	X	X	X	Heads of the units
	Activity 1.1.2 Procurement of equipment/reagents for the 20 priority communicable diseases	Equipment/reagents procured	X	X	X	X	X	Head NPHL Heads of the units
	Activity 1.1.3 Establish SOPs for the 20 priority communicable diseases	Reviewed and approved SOPs	X	X	X	X	X	Heads of the units
	Activity 1.1.4: QA Officer develops training plan for SOPs for 20 priority communicable diseases	Training plans developed	X	X	X	X	X	QA officers in the units
	Activity 1.1.5 Train personnel on assay for 20 priority communicable diseases	Number of personnel trained	X	X	X	X	X	Heads of units/ Training manager
	Activity 1.1.6 Maintain equipment and supply inventory for 20 priority communicable diseases	Equipment and supply inventory created	X	X	X	X	X	Heads units/ QA managers

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
	Activity 1.1.7 Establish and review associated QMS for the 20 priority communicable diseases	QA manual in place	X	X	X	X	X	QA officers in the units
	Activity 1.1.8 Sensitize referring labs on availability of new tests	Communication documents (meeting minutes/ reports, web updates, emails, etc.)	X	X	X	X	X	Heads of the units/Head NPHL
Strategy 1.2 Support lab-based surveillance by prioritizing 20 NCDs and diagnostics	Activity 1.2.1 Identify assay requirements for 20 NCDs	Ability to conduct assays for 20 priority NCDs	X	X	X	X	X	Heads of the units
	Activity 1.2.2 Procurement of equipment/reagents for the 20 NCDs	Equipment/ reagents procured	X	X	X	X	X	Heads of the units/Head NPHL
	Activity 1.2.3 Establish SOPs for the 20 NCDs	Reviewed and approved SOPs	X	X	X	X	X	Heads of the units/ QA officers in the units
	Activity 1.2.4 Train Personnel on assay for 20 NCDs	Number of personnel trained	X	X	X	X	X	Training manager/ heads of units
	Activity 1.2.5 Maintain equipment and supply inventory for 20 NCDs	Equipment and supply inventory created	X	X	X	X	X	Heads units/ QA managers
	Activity 1.2.6 Establish and review associated QMS for the 20 NCDs	QA manual in place	X	X	X	X	X	QA officers in the units
	Activity 1.2.7 Sensitize referring labs to availability of new tests	Communication documents (meeting minutes/ reports, web updates, emails, etc.)	X	X	X	X	X	Heads of the units/Head NPHL
<u>Strategy 1.3</u> Support lab based surveillance by prioritizing diagnostics for detection of 10 food/ water contaminants	Activity 1.3.1 Identify assay requirements for 10 food/water contaminants and 4 micronutrients	Ability to conduct assays for 10 food/water contaminants and 4 micronutrients	X	X	X	X	X	Heads of the units

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
	Activity 1.3.2 Procurement of equipment/reagents for 10 food/water contaminants and 4 micronutrients	Equipment/reagents procured	X	X	X	X	X	Heads of the units/Head NPHL
	Activity 1.3.3 Establish guidelines and SOPs on sampling	Reviewed and approved SOPs	X	X	X	X	X	Heads of the units/ QA officers in the units
	Activity 1.3.4 Train Personnel on 10 food/water contaminants and 4 micronutrients	Number of personnel trained	X	X	X	X	X	Training manager/ heads of units/ head NPHL
	Activity 1.3.5 Maintain equipment and supply inventory for 10 food/water contaminants and 4 micronutrients	Equipment and supply inventory created	X	X	X	X	X	Heads units/ QA managers
	Activity 1.3.6 Establish and review associated QMS for 10 food/water contaminants and 4 micronutrients	QA manual in place	X	X	X	X	X	QA officers in the units
	Activity 1.3.7 Sensitize referring labs to availability of new tests	Communication documents (meeting minutes/ reports, web updates, emails, etc.)	X	X	X	X	X	Heads of units/ Head NPHL
Strategy 1.4: Support lab based surveillance by prioritizing assays for the determination of 4 micronutrients	Activity 1.4.1 Identify assay requirements (equipment, supplies, training)	The ability to conduct assays for 4 priority micronutrients and associated supplies for determination of 4 micronutrients created	X	X	X	X	X	Heads of the units
	Activity 1.4.2: Procurement	List of reagents & equipment procured	X	X	X	X	X	Heads of the units/Head NPHL
	Activity 1.4.3 Establish guidelines and SOPs	Reviewed and approved SOPs	X	X	X	X	X	Heads of the units/ QA officers in the units

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
	Activity 1.4.4 Train Personnel	Personnel trained and competent	X	X	X	X	X	Training manager/ heads of units/ head NPHL
	Activity 1.4.5 Maintain equipment and supply inventory	Equipment and supply inventory created and appropriate service contracts in place	X	X	X	X	X	Heads units/ QA managers
	Activity 1.4.6: Implementation and review of QMS	EQA records	X	X	X	X	X	QA officers in the units
	Activity 1.4.7 Sensitize referring labs to availability of new tests	Communication documents (meeting minutes/ reports, web updates, emails, etc.)	X	X	X	X	X	Heads of the units/Head NPHL
Objective 2 Establish an efficient referral system between international, NPHL and the county laboratories by 2020								
Strategy 2.1 Pilot a referral system in 10 counties	Activity 2.1.1 Identify pilot counties	Number of county labs enrolled	X					Head referral coordinator/ Head of units
	Activity 2.1.2 Provide training	Number of facilities with trained personnel	X					Training manger
	Activity 1.2.3 Provide supplies for NPHL and the pilot labs	Number of facilities with supplies procured	X					Head of units Head NPHL
		Number of pilot labs reporting stock-outs						
	Activity 2.1.3 Provide equipment	Number of equipment procured by type	X					Head of units
	Activity 2.1.4 Integrate courier	Number of labs utilizing the integrated courier services	X					Head of units/ Head NPHL
Strategy 2.2 Expand referral system to 30 counties	Activity 2.2.2 Provide training	Number of facilities with trained personnel		X	X	X	X	Training manager

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
	Activity 2.2.3 Provide supplies	Number of supplies procured			X	X	X	Head of units
		Number of pilot labs reporting stock-outs						
	Activity 2.2.4 Provide equipment	Number of equipment procured		X	X	X	X	Head of units
	Activity 2.2.5 Expand courier service	Number of labs utilizing the integrated courier services		X	X	X	X	Head of units/ Head referral coordinator
Strategy 2.3: Establish list of international reference laboratories with capacity to confirm and subtype pathogens causing public health events	Activity 2.3.1: Stakeholders meeting to review and approve list of international labs	Agreement or MoU with international laboratories	X	X	X	X	X	Head of units/ Head referral coordinator/
Objective 3 Evaluate and improve diagnostic technologies and assays by 2020								
Strategy 3.1 Evaluate 80% of Tests Kits used in NPHL and the country	3.1.1 Develop kits evaluation guidelines and SOPs, Printing and dissemination	Guidelines and SOPs developed	X	X	X	X	X	Head of units/ QA mangers
	3.1.2 Train laboratory personnel on developed guidelines	Number of lab personnel trained	X	X	X	X	X	Training manager
	3.1.3 Procure supplies for kit evaluation	Number of supplies procured	X	X	X	X	X	Head of units/
	3.1.4 Evaluation of the kits	Proportion of kits evaluated	X	X	X	X	X	Head of units/

Monitoring, Evaluation, ICT & Communication

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
Objective I: To improve the capacity & efficiency of laboratory monitoring & evaluation system by operationalizing the M&E framework								
Strategy I.1: Monitor implementation of M&E plan	Activity I.1.1: Review the NPHL M&E framework to align it with the strategic plan	Aligned M&E plan with Strategic plan available	X					Head, M&E
		Number of staff sensitized on strategic plan						
	Activity I.1.2: Conduct baseline assessment on Key indicators in the M&E plan	Baseline report	X					Head, M&E
	Activity I.1.3: Collect, analyze and report routine data to monitor Performance of the M&E plan	Performance reports developed/ produced and disseminated	X	X	X	X	X	Head, M&E
Strategy I.2: to evaluate implementation of the M&E plan	I.2.1: Conduct mid-term and end term evaluation of the NPHL Strategic Plan	Evaluation report produced and disseminated			X		X	Head, M&E
Strategy I.3. Assign testing labs to DHIS in order to achieve above 80% access to quality laboratory data from generating source.	Activity I.3.1 Develop/ review data collection and reporting tools, indicators and upload into reporting platforms (DHIS, LIMS).	Number of tools/ developed/ reviewed and used.	X					Head, M&E
	Activity I.3.3: Assign testing facilities to relevant laboratory datasets	Proportion of laboratories assigned to data sets	X					Head, M&E
	Activity I.3.4; Give feedback on lab data reporting to counties	Feedback reports	X	X	X	X	X	Head, M&E
Strategy I.4: Enable M&E to access LIMS Data from the reference labs	Activity I.4.1: Filter Key variables from the reference labs into M&E tab on the LIMS dashboard	Test menu for NPHL reference labs available to M&E office	X	X	X	X	X	Head, M&E
Strategy I.5: Conduct data quality assessment and improvement	Activity I.5.1: Develop DQA protocol	Availability of DQA protocol	X					Head, M&E

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
	Activity 1.5.2: Conduct DQA/I	DQA report		X		X		Head, M&E
Strategy 1.7: Capacity building of staff on M&E in M&E and ICT technology	Activity 1.7.1: Carry out refresher Training for M&E officers in DHIS and analytical skills (SPSS, STATA,)	Number trained on analytical skills	X					Head, M&E
Strategy 1.8: Conduct data analysis and writing report writing in order to achieve timely processing and analysis of data received	Activity 1.8.1: Analyze data and prepare quarterly and annual reports	Quarterly and annual reports produced and disseminated	X	X	X	X	X	Head, M&E
Objective 2: To promote and attain 100% laboratory information sharing using electronic platform								
Strategy 2.1: Data and Information sharing to ensure 100% dissemination of reports	Activity 2.1.1: Reports (Data sharing) on PC, PEPFAR, WHO etc.	Report produced and disseminated to stakeholders and users	X	X	X	X	X	Head, M&E
Strategy 2.2: To achieve a near paperless mode of information exchange by use of electronic platform (use of website, SMS, mail, helpdesk systems)	Activity 2.2.1: Upgrade NPHL website and email to handle increased mail traffic	New look website and unlimited email flow from the current limitation of 100 per hour	X					ICT staff
	Activity 2.2.2: Automation of the Viral Load request form for online submission of requests	A web based viral load request form for use by the requesting facilities	X					ICT staff
	Activity 2.2.3: Configuration of the LIS to send alerts via SMS	Auto generated SMS alerts from LIMS to NPHL clients	X					ICT staff
	Activity 2.2.4: Develop a helpdesk system to facilitate the tracking and solving of user support requests	Web based helpdesk system for tracking user support requests		X				ICT staff
	Activity 2.2.5: Procure for annual internet access link	Continuous internet access	X	X	X	X	X	ICT staff

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
Objective 3: To conduct countrywide mapping of all laboratory-testing capacities to ensure adequate coverage to rapidly detect disease threat of public health concern								
<u>Strategy 3.1:</u> Carry out integrated GIS Lab service Mapping and disseminate report	Activity 3.1.2: Procure mapping tools	Mapping tools procured	X	X				ICT staff
	Activity 3.1.3: Develop data collection tools	Data collection tools developed	X	X				ICT staff
	Activity 3.1.4: Develop web based mapping system	Availability of GIS laboratory mapping report on the web	X					ICT staff
	Activity 3.1.5: Conduct training of staff on lab mapping	Proportion of staff with skills to develop GIS mapping	X	X				ICT staff
	Activity 3.1.6: Roll out mapping of laboratory services and capacities to all counties	Availability of countrywide report on mapping exercise completed	X	X				Head, M&E
Objective 4: To develop and implement a comprehensive institutional ICT policy								
<u>Strategy 4.1:</u> To systematically manage the implementation of ICT programs at NPHL	Activity 4.1.1: Develop ICT guidelines and SOPs	ICT guidelines and SOPs developed	X	X				ICT staff
Objective 5: To expand and integrate the laboratory information management system (LIMS) with the national and other relevant disease reporting systems								
<u>Strategy 5.1:</u> To have all the reference laboratories running on LIMS	Activity 5.1.1: Configuration of LIMS for all reference labs	Number of reference labs connected to and using LIMS	X					ICT staff
	Activity 5.1.3: Training all laboratory staff in each of the laboratories on the use of the system	Number of LIMS users trained	X					ICT staff
	Activity 5.2.2: Procurement of 3 servers to replace the current aged servers	Functional new servers in place	X					ICT staff
	Activity 5.2.3: Procurement of 35 additional computers and firewall system	Number of computers and accessories procured	X					ICT staff

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
	Activity 5.2.5: Procurement of one multi-functional printer per laboratory	2 printers/ photocopiers procured		X				ICT Staff
	Activity 5.2.6: Obtain annual service contracts for the maintenance of servers, printers and computers	Service contract maintenance documentation	X	X	X	X	X	ICT Staff
Strategy 5.3: Integrate LIMS with existing HIS systems.	Activity 5.3.1: Configure LIMS to submit data from the reference labs to the DHIS	DHIS reports produced	X					ICT Staff
Objective 6: To improve visibility of NPHL in order to strategically position it within the health sector								
<u>Strategy 6.1:</u> Disseminate information about the NPHL mandate to the greater public	Activity 6.1.1. Develop a communication strategy to streamline the flow of information within NPHL	Operational Communication Strategy document developed	X					Head, M&E
	Activity 6.1.2: Develop print and electronic media to sensitize the public on NPHL functions and update NPHL website regularly	An organizational brochure highlighting the functions of NPHLS and Strategic signage of NPHL buildings and location	X	X	X	X	X	Head, M&E

Quality Management, accreditation, Biosafety and Biosecurity

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
Objective I: To establish and implement quality management system within NPHL								
Strategy I.1: Ensure necessary resources are availed for effective execution of services	Activity I.1.1: QA Office organization	Procure supplies and equipment for the office	X	X	X	X	X	Head QA
	Activity I.1.2: Develop quality assurance/control training modules to use for training county and national staffs	Availability of training modules by county and national staffs	X	X				Head QA
	Activity I.1.3: Establish and operationalize national NPHL quality management systems Technical Advisory Group	Report of meetings held by Technical Advisory Group	X	X	X	X	X	Head QA
	Activity I.1.4 NPHL QA and EQA committee operationalization	Reports and work-plan for QA/EQA working committee	X	X	X	X	X	Head QA
	Activity I.1.5 Conduct specialized training for QA officers at NPHL	Number of QA officers at NPHL trained		X	X	X		Head QA
Strategy I.2: Develop NPHL medical laboratory QMS policy and guidelines	Activity I.2.1: Implement quality policy manuals for NPHL	Quality policy manuals developed and disseminated	X					Head QA
	Activity I.2.2: Develop and approve specific standard operating procedures (QMS)	Copies of SOPs produced and distributed		X				Head QA
	Activity I.2.3: Train NPHL staff on developing standard operating procedures	No of staff trained on developing standard operating procedures		X				Head QA
Strategy I.3: Establish networking with international reference laboratories for provision of EQA	Activity I.3.1: Finalize draft national integrated EQA strategy for lab services	EQA strategy completed and adopted	X					Head QA

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
	Activity 1.3.2: Identify internationally accredited laboratories with capability to provide EQA services	List of international accredited laboratories identified	X	X				Head QA
	Activity 1.3.3: Enroll all NPHL labs to external quality assessment scheme	No of NPHL labs enrolled to external quality assessment by scheme	X	X	X	X	X	Head QA
Strategy 1.4: Produce PT panels	Activity 1.4.1: Procure materials for production of PT panels	No of panels produced per year by scheme	X	X	X	X	X	Head QA
	Activity 1.4.2: Train personnel on PT panels production	Number of staff with skills in preparation/production of PT panels		X				Head QA
	Activity 1.4.3: Prepare, validate and distribute PT panels	Number of PT panels distributed per year by PT scheme	X	X	X	X	X	Head QA
Strategy 1.5: Pursue ISO 17043 accreditation for provision of EQA services	Activity 1.5.1: Establish a Quality management system at the NPHL PT production center	QMS performance baseline assessment report	X					Head QA
		Availability of QMS action plan						
	Activity 1.5.2: Monitor compliance of the ISO 17043 through periodic internal assessment	Availability of compliance monitoring assessment repo		X	X	X	X	Head QA
	Activity 1.5.3: Enroll the labs producing PT panels to accrediting body	Accreditation application		X	X			Head QA
	Activity 1.5.4: Acquire accreditation	ISO 17043 Accreditation certificate					X	Head QA

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
Strategy 1.6: Ensure a functional integrated EQA database	Activity 1.6.1: Identify the vendor and conduct user requirement assessment	User requirement assessment report	X					Head QA
	Activity 1.6.2: Design an integrated EQA database	Number of EQA programs configured in the database	X	X		X		Head QA
	Activity 1.6.3: Train staff at NPHL on EQA database	Number of staff trained		X				Head QA
	Activity 1.6.4: Integrate EQA database with LIMS at NPHL	Functional database at NPHLS		X				Head QA
	Review the integrated EQA database and generate annual reports	Annual reports		X	X	X	X	Head QA
Objective 2: To ensure 100% of NPHL laboratories attain international accreditation by the year 2020								
Strategy 2.1: To implement the QMS policy in NPHL	Activity 2.1.1: Develop national integrated QMS policy guidelines	Copies of Integrated QMS policy developed	X					Head QA
	Activity 2.1.2: Appoint and Train ISO implementers per laboratory	Number of NPHL staff with trained ISO implementers		X				Head QA
	Activity 2.1.3: Develop QMS audit tools	Audit tools in place		X				Head QA
	Activity 2.1.4: Train and certify internal auditors	Number of auditors trained and certified			X			Head QA
	Activity 2.1.5: Conduct internal audits	No of internal audits conducted by lab						Head QA
	Activity 2.1.6: Develop QMS plan of action based on internal audits findings	Plans of action developed		X	X			Head QA
	Activity 2.1.7: Prepare annual QA report tracking quality indicators	Annual QA report			X	X	X	Head QA
	Activity 2.1.8: Enroll labs to accrediting bodies	Number of labs enrolled			X	X		Head QA

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
Objective 3: To support 10 county laboratories attain ISO accreditation by the year 2020								
Strategy 3.1: To implement the QMS in county labs	Activity 3.3.1: Conduct baseline assessments to targeted labs	List of targeted labs			X	X		Head QA
	Activity 3.3.2: Implement the three SLMTA workshops	Number of workshops held	X	X	X	X	X	Head QA
	Activity 3.3.3: SLMTA four mentorships	Mentorship report	X	X	X	X	X	Head QA
	Activity 3.3.4: Conduct SLMTA midterm assessment	Assessment report		X	X	X		Head QA
	Activity 3.3.7: Conduct SLMTA end term assessment	Evaluation report			X	X	X	Head QA
	Activity 3.3.8: Train and certify internal auditors	Numbers of auditors trained		X	X	X		Head QA
	Activity 3.3.9: Conduct internal audits	Audit reports			X		X	Head QA
	Activity 3.3.10: Train and certify internal mentors	Number of mentors trained and certified		X	X	X		Head QA
	Activity 3.3.11: Train and certify on Internal quality control and method validation	Number trained and certified		X	X	X		Head QA
	Activity 3.3.12: Implement SLMTA improvements projects	Reports developed			X		X	Head QA
Activity 3.3.13: Apply for accreditation	Accreditation body identified			X		X	Head QA	
Strategy 3.2: Implementation of the national equipment management strategy	Activity 3.4.1 Conduct trainings on equipment management	Number of staff trained	X	X	X	X	X	Head QA
	Activity 3.4.2 Develop National Curriculum on equipment management	Curriculum developed	X					Head QA
	Activity 3.4.3 Procurement of tool-kit, supplies and consumables for the National equipment calibration center	Items procured	X	X				Head QA

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
	Activity 3.4.4 Develop/ review/ update database on equipment management and calibration	Database developed and updated	X	X				Head QA
	Activity 3.4.5 Mentorship on equipment calibration and maintenance to national and counties	Number mentored	X	X	X	X	X	Head QA
	Activity 3.4.6 Calibration and certification of equipment	Number of equipment calibrated by type	X	X	X	X	X	Head QA
Objective 4: To strengthen Biosafety and Biosecurity systems within NPHL in pursuance of ISO 15190								
	Activity 4.1.1: Procure supplies and computers	Availability of office supplies and equipment	X					Head Biosafety
	Activity 4.1.2: Formation of NPHL biosafety and biosecurity TWG	NPHL Biosafety and Biosecurity TWG in place	X					Head Biosafety
	Activity 4.1.4: Procure 10 fume hoods for NPHL	Availability of fume hoods	X					Head Biosafety
	Activity 4.1.5: Procure program vehicle	Availability of program vehicle	X		X			Head Biosafety
Strategy 4.2: Support the implementation of ISO 15190 at NPHL	Activity 4.2.1: Develop guidelines based on ISO 15190	Guideline in place	X					Head Biosafety
	Activity 4.2.2: Conduct sensitization on ISO 15190 at NPHL and Counties	Trained personnel	X	X	X	X	X	Head Biosafety
	Activity 4.2.3: Pursue ISO 15190 for biosafety biosecurity accreditation for 10 laboratories	No of labs supported towards accreditation using ISO 15190	X	X	X	X	X	Head Biosafety
	Activity 4.2.4: Procure specialized personal protective equipment for priority events at NPHL	Availability of protective equipment	X		X	X		Head Biosafety

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
	Activity 4.2.5: Conduct routine safety audits	Safety audit reports	X	X	X	X	X	Head Biosafety
	Activity 4.2.6: Train and certify 20 safety TOTS and auditors at NPHL and counties	Number of TOTS and auditors trained	X	X	X	X	X	Head Biosafety
Strategy 4.3: Establish waste management programs for NPHL	Activity 4.3.1: Prepare SOPs and job aid guidelines for waste management	Waste management SOPs in use		X				Head Biosafety
	Activity 4.3.2: Train 2000 NPHL and County staff on waste management	Number of staff trained on waste management guidelines	X	X	X	X	X	Head Biosafety
	Activity 4.3.3: Procure equipment and supplies for waste management	Waste segregation materials procured by type	X					Head Biosafety
	Activity 4.3.4: Train 5 staff to maintain incineration plant	Incineration plant maintained	X					Head Biosafety
	Activity 4.3.6: Servicing and maintenance of incinerator	Availability of maintenance and servicing schedule and records	X					Head Biosafety
Strategy 4.4: establish chemical Management and disposal programs at NPHL	Activity 4.4.1: Develop chemical management and disposal guideline	Guideline in place	X	X				Head Biosafety
	Activity 4.4.2: Develop inventory of chemicals at NPHL	Inventory developed	X	X	X	X	X	Head Biosafety
	Activity 4.3.3: Develop and implement chemical hygiene plan	Availability of chemical Hygiene Plan (CHP)	X					Head Biosafety
Strategy: 4.5: Establish NPHL repository, VBM management and control systems (Bioterrorism)	Activity 4.5.1: Identify space for NPHL repository	Presence of NPHL repository	X					Head Biosafety
	Activity 4.5.2 Train four NPHL personnel on safety audit	No of staff trained	X					Head Biosafety
	Activity 4.5.3: Procure 7 freezers	No of freezers procured	X	X	X	X	X	Head Biosafety

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
	Activity 4.5.4: Develop biological agents and specimen archiving systems that ensure proper agent inventory for NPHLS	Inventory report developed	X					Head Biosafety
	Activity 4.5.5: Conduct mapping of pathogens and toxins for NPHL	Inventory report	X	X	X	X	X	Head Biosafety
	Activity 4.5.6: Develop an inventory of laboratories (private and public) handling potential pathogens and toxins for bioterrorism use	Inventory report	X					Head Biosafety
	Activity 4.5.7: Implement physical and electronic security system for NPHL	Implementation and installation report	X					Head Biosafety
Objective 5: To support appropriate biorisk management training and competence development initiatives at NPHL and counties								
Strategy 5.1: Develop Biorisk management programs at NPHL	Activity 5.1.1 Establish biorisk management (BRM) training center at NPHL	Established Biorisk Management center		X	X			Head Biosafety
	Activity 5.1.2: Conduct baseline competencies and training needs assessment in biorisk management at NPHL	Competence and training needs assessment report	X					Head Biosafety
	Activity 5.1.3: Develop appropriate standards, tools, guidance and norms relating to Biorisk management	Standards and norms in place	X					Head Biosafety
	Activity 5.1.4: Train biorisk management specialized personnel to operationalize the center	Number of specialized personnel trained		X	X	X	X	Head Biosafety

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
	Activity 5.1.5: Develop Biorisk management TOTs curriculum and Manual	Developed TOTs curriculum and Manual.	X					Head Biosafety
	Activity 5.1.6: Conduct Biorisk management TOT trainings for NPHL, County level	No of BRM TOTs trained at all levels	X	X	X	X	X	Head Biosafety
Strategy 5.2: Develop an emergency preparedness response program for NPHL	Activity 5.2.1: Develop emergency evacuation plan	Availability of emergency evacuation plan/ document	X					Head Biosafety
	Activity 5.2.2: Train 4 Biosafety NPHL personnel on fire safety compliance	Number of personnel trained on fire safety compliance			X	X		Head Biosafety
	Activity 5.2.3: Conduct emergency drills	Number of fire drills done			X	X	X	Head Biosafety
Strategy 5.3: Develop occupational safety and health program in NPHL	Activity 5.3.1: Develop and Implement NPHL specific vaccination program	Number of employees vaccinated against yellow fever, Hepatitis B,	X	X				Head Biosafety
Strategy 5.4: Strengthen coordination of biosafety and biosecurity activities at NPHL and counties	Activity 5.4.1: Conduct training on basic Biosafety /Biosecurity for 2000 for Laboratory staff and other HCWs for NPHL and County levels	Reports on number of trainings conducted	X	X	X	X	X	Head Biosafety
	Activity 5.4.4: Evaluate the impact of biosafety and biosecurity training at NPHL and Counties	Evaluation report			X	X	X	Head Biosafety
Objective 6: To implement the UN/WHO regulations for shipment of dangerous goods								
Strategy 6.1: To develop national guidelines based on international regulations for shipping of dangerous goods	Activity 6.1.1: Train and certify 40 employees on the shipment of dangerous goods	Number of staff trained	X	X	X			Head Biosafety
	Activity 6.1.2: Implement and adhere to the shipping guidelines	Guideline in place	X	X	X			Head Biosafety

Leadership, Governance and Partnership

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
Objective I. To strengthen effective leadership and accountable governance								
Strategy I.1. Promote NPHL as a leader in public health laboratory services	Activity I.1.1. Strengthen the annual multistake holders (counties, regional, MOH, and partners) forum to discuss progress and resolve issues	Stakeholder forum held per year	X	X	X	X	X	Head NPHLS
	Activity I.1.2. Strengthen collaboration within the East African Public Health Laboratory Network	Networking mechanism and guidelines within EAPHLN established and implemented	X					Head NPHLS
	Activity I.1.3. Strengthen leadership role and participation in the East African Public Health Laboratory Leaders' Forum	EAPHLN leaders forum established and functional	X	X				Head NPHLS
	Activity I.1.4. Develop and publish annual NPHL report	Production and dissemination of annual NPHL report	X	X	X	X	X	Head NPHLS
	Activity I.1.5. Hold a biennial NPHL conference to exchange information, ideas and technologies	A biennial conference established	X		X		X	Head NPHLS
Strategy I.2. Strengthen effective leadership, accountable governance and integrity within NPHL	Activity I.2.1. Establish a multi-agency technical working group dedicated to supporting leadership and governance	TOR for multi-sectoral TWG developed and implemented	X					Head NPHLS

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
	Activity 1.2.2. Increase NPHL visibility and accountability by disclosure of activities through print and online media	Documentation of activities and achievement of NPHL in print and electronic media		X	X			Head NPHL
	Activity 1.2.3. Develop a leadership mentorship program for high achieving staff members	Proportion of NPHL staffs recognized for achievement	X	X	X	X	X	Head NPHL
	Activity 1.2.4. Conduct monthly Leadership and Management meetings to provide updates on progress of NPHL	Number of meetings held	X	X	X	X	X	Head NPHL
	Activity 1.2.5. Conduct sensitization meetings for staff on public servant ethics and integrity	Proportion of NPHL staff sensitized on public servants code of conduct, ethic and integrity	X	X	X	X	X	
	Activity 1.2.6 Place complain / complement boxes at strategic locations within NPHL	Complain / complement boxes installed	X					
	Activity 1.2.7 Create anticorruption subcommittee at NPHL	Committee constituted	X	X				
Strategy 1.3. Review and implement the National Public Health Laboratory Policy Guidelines	Activity 1.3.1. Identify consultant and relevant stakeholders to draft, refine, and finalize NPHL Policy	Draft NPHL policy		X				
	Activity 1.3.2. Launch, and disseminate NPHL Policy guideline	Dissemination report			X			Head NPHL

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
Objective 2.To provide and retain adequate and competent staff to achieve NPHL goals								
Strategy 2.1. Develop and implement a comprehensive 5-year human resource management plan	Activity 2.1.1. Develop a NPHL staff recruitment plan	Approved recruitment plan	X					Head NPHL
	Activity 2.1.2. Develop annual training plans for NPHL staff	Approved annual training plan		X	X			Head NPHL
	Activity 2.1.3. Strengthen the program for staff orientation and training rotation to identify appropriate career paths	Approved orientation package, No. of staff oriented		X	X			Head NPHL
	Activity 2.1.4. Strengthen the performance contracting and appraisal system	Proportion of NPHL staff appraised	X	X	X	X	X	Head NPHL
	Activity 2.1.5. Develop a system for implementing performance based financing for high achieving programs	Number of programs awarded PBF	X	X				Head NPHL
Objective 3.To finance NPHL in a sustainable manner through evidence based planning								
Strategy 3.1. Develop a strategy to increase government's financial allocation	Activity 3.1.1. Develop a financing strategy and plan	Approved financing strategy		X				Head NPHL
	Activity 3.1.2. Develop a financing advocacy framework for NPHL needs within the Ministry of Health	Approved advocacy framework in place		X	X			Head NPHL
Strategy 3.2. Strengthen capacity for NPHL for obtaining external funding	Activity 3.2.1. Increase external funding	No of proposals prepared and submitted for funding		X				
		No of proposals funded						
Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible

	Activity 3.2.2. Establish a unit (NAME TBD) to assist in promoting entrepreneurship within NPHL	Approved NPHL entrepreneurship unit		X				Head NPHL
		No. of specialized services commercialized						
		Annual revenue generated						
Objective 4.To establish and strengthen collaborative partnerships								
Strategy 4.1. Establish and strengthen Public- Private Partnerships	Activity 4.1.1. Establish a Public-Private Forum to discuss relevant public health technological advances that will benefit NPHL	No. of partners identified, engaged and TOR developed		X				Head NPHL
	Activity 4.1.2. Develop a framework to facilitate placement of laboratory equipment for NPHL	Approved agreement for placement of laboratory equipment for NPHL		X				Head NPHL
	Activity 4.1.3. Develop partnerships with private sector to support access and improved quality of public health laboratory services (Corporate Social Responsibility)	Agreement signed establishing partnership with private sector		X	X			Head NPHL
	Activity 4.1.4. Develop and partnerships with Institutions of higher learning to offer specialized laboratory training programs	Agreement signed establishing partnership with institutions of higher learning		X	X			Head NPHL
	Activity 4.1.5. Strengthen partnerships with institutions of higher learning to conduct collaborative research projects	Number of collaborative research projects initiated and completed		X	X			Head NPHL

Infrastructure, equipment and logistics

Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible
Objective 1. To strengthen laboratory infrastructure to ensure that 80% of NPHL laboratories are meeting international standards by 2020								
Strategy 1.1 Expand and maintain laboratory infrastructure according to the policy guidelines	Activity 1.1.1: Regular review and validation of status and standard of infrastructure at NPHL to ensure conformity with set norms	NPHL infrastructure assessment report		X		X		Head Biomedical engineering
	Activity 1.1.2: Set up a virology laboratory (P3 laboratory)	P3 laboratory with the required containment facilities		X	X			Head NPHL
	Activity 1.1.3: Establish equipment preventive maintenance schedule	Maintenance schedule/report	X	X	X	X	X	Head Biomedical
Strategy 1.2. Strengthen effective leadership, accountable governance and integrity within NPHL	Activity 1.2.1: Procure 50 equipment and tools for equipment calibration center	Number of equipment and tools procured	X	X	X	X	X	Head Biomedical
	Activity 1.2.2: Train 10 technical staff and biomedical engineers on how to set up an equipment calibration center	Documentation of activities and achievement of NPHL in print and electronic media		X	X			Head NPHL
	Activity 2.2.3: Advanced training of four technical staff and biomedical engineers on equipment maintenance	Number of trained technical staff and biomedical engineers		X		X		
	Activity 2.2.4 Conduct equipment calibration and certification	Number of equipment calibrated and certified	X	X	X	X	X	Head Biomedical
	Activity 2.2.5: Calibrate 50 equipment used for calibration	Number of equipment calibrated	X	X	X	X	X	Head Biomedical
Strategy	Strategic Activities	Performance indicators	2016/17	2017/18	2018/19	2019/20	2020/21	Responsible

Strategy 1.3. Build capacity of technical staff and biomedical engineers on equipment acquisition, maintenance and retirement	Activity 1.3.1: Develop guideline on equipment acquisition, maintenance and retirement	Guideline developed		X				Head Logistics, Head Biomedical engineering
	Activity 1.3.2: Train biomedical engineers on equipment acquisition, maintenance and retirement	Number of staff trained		X	X	X		Head logistics
	Activity 1.3.3: Sensitize staff on equipment acquisition, maintenance and retirement	Number of staff sensitized		X				Head logistics
Strategy 1.4: Improve forecasting and quantification of laboratory commodities and supplies	Activity 1.4.1: Conduct two reviews of the Laboratory Commodity supply and Essential list	Reviews conducted		X			X	Head logistics
	Activity 1.4.2:Capacity assessment of NPHL staff in lab commodity management	Assessments conducted	X					Head logistics
	Activity 1.4.3: Preparation of annual procurement plans	Annual procurement plans prepared	X	X	X	X	X	Head logistics
	Activity 1.4.4: Conduct annual forecasting and quantification of laboratory commodity and supplies	Annual forecasting and quantification of laboratory commodities and supplies done	X	X	X	X	X	Head logistics
	Activity 1.4.5: Procure laboratory commodities and supplies	Proportion of commodities and supplies procured	X	X	X	X	X	Head procurement
Strategy 1.5: Develop an electronic based laboratory commodity inventory system	Activity 1.5.1: Procure a hard ware and software for commodity inventory system	Number of hardware and software procured and purchased		X				Head procurement
	Activity 1.5.2:Train 20 technical staff and procurement officers on the electronic commodity inventory system	Number of technical staff and procurement officers trained				X	X	Head Logistics

Implementation Plan Budget

Implementation plan budget by the five thematic areas is presented in the table below.

Budget plan 2016-2021 in Kenya Shillings

Thematic area	2016/17	2017/18	2018/19	2019/20	2020/21	Total
Lab Services	289,300,000	255,500,000	256,500,000	255,500,000	255,000,000	1,311,800,000
Monitoring, evaluation, ICT & Communication	16,120,000	9,750,000	1,260,000	2,950,000	1,260,000	31,340,000
Quality Management, accreditation, certification and biosafety/biosecurity	216,000,000	169,550,000	147,750,000	129,000,000	124,450,000	786,750,000
Leadership, governance, partnership, financing and human resource	2,415,000	2,530,000	2,780,000	1,880,000	1,530,000	11,135,000
Infrastructure, equipment, supplies and logistics	17,300,000	32,826,667	20,996,667	21,826,667	14,970,000	107,920,001
Total	541,135,000	470,156,667	429,286,667	411,156,667	397,210,000	2,248,945,001

Chapter 7

Monitoring and Evaluation of the Strategic Plan

Monitoring and evaluation of the NPHL strategic plan will be key in tracking changes in the implementation of the plan. This plan is expected to support the implementation of MOH Ministerial Strategic Plan. Monitoring of this strategic plan will be done by tracking key elements for each thematic area using selected indicators in the implementation plan for various strategies and activities spearheaded by respective units within the division.

The M&E unit will be responsible for guiding the overall M&E strategy and implementation of related activities at NPHLS and stakeholders, while providing timely and relevant information to all stakeholders. These activities will involve communication with relevant staff involved in M&E design and coordination, departmental heads, county laboratory coordinators, stakeholder M&E staff, the Head-NPHLS and external personnel, as appropriate. The unit will be responsible for setting up the M&E system and ensuring it is implemented effectively by all stakeholders (e.g. NPHLS units, county/sub-county laboratory systems and partners).

The unit will undertake the coordination role by strengthening existing and establishing new formal and informal M&E mechanisms and systems among partners. The unit will also spearhead activities that will strengthen the capacity of NPHLS partners to independently undertake and implement their own M&E activities while linking them to the NPHLS M&E strategy.

Units in the divisions will compile monthly performance reports and evidence and submit to the M&E unit by the 10th day of the month following the end of the reporting period. The M&E unit will consolidate the Division performance indicators. A separate monitoring and evaluation plan to track the progress and achievement of this strategic plan is in place.



First Name

Pat.No.

DOB

Ward

Date

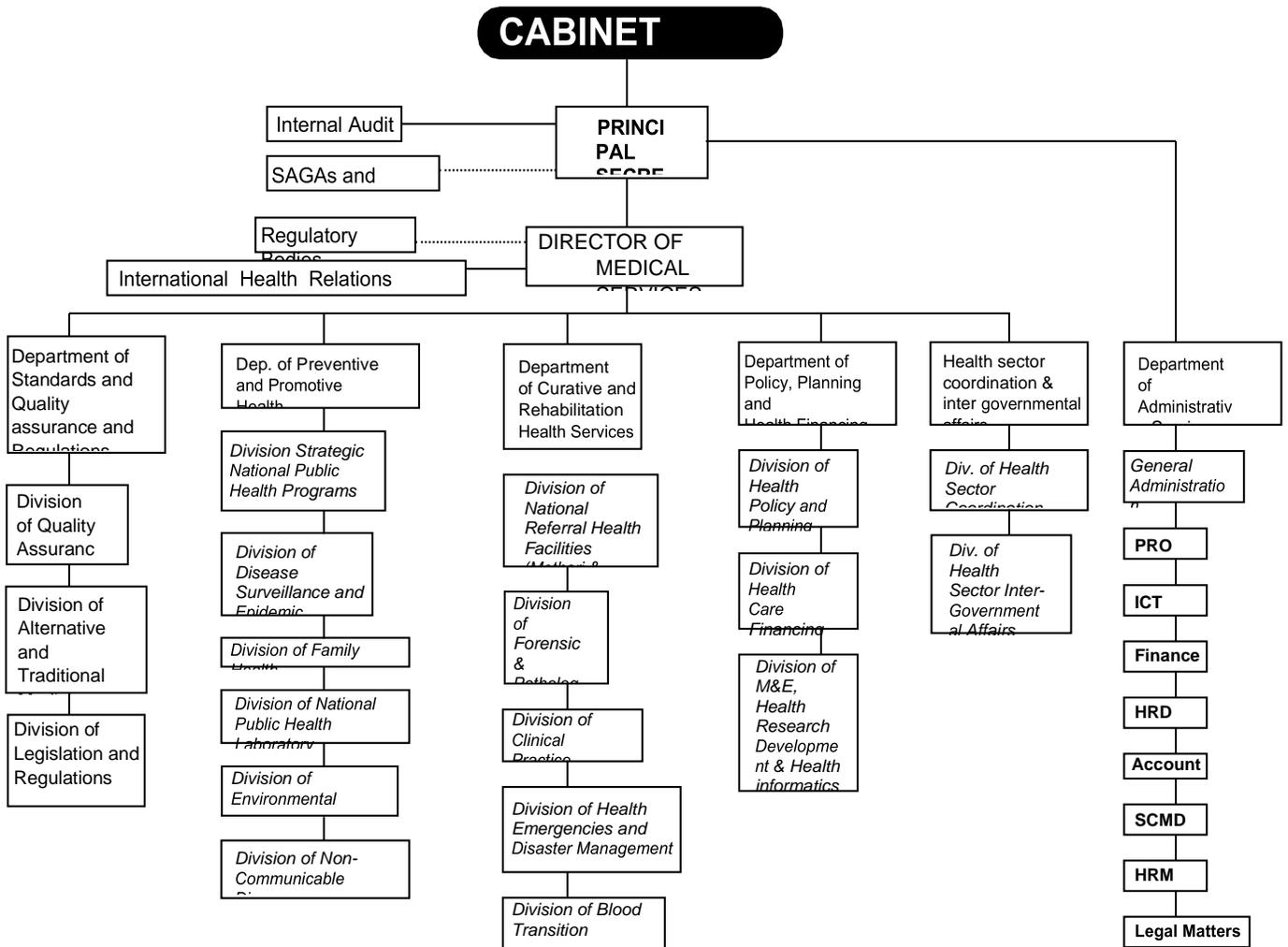
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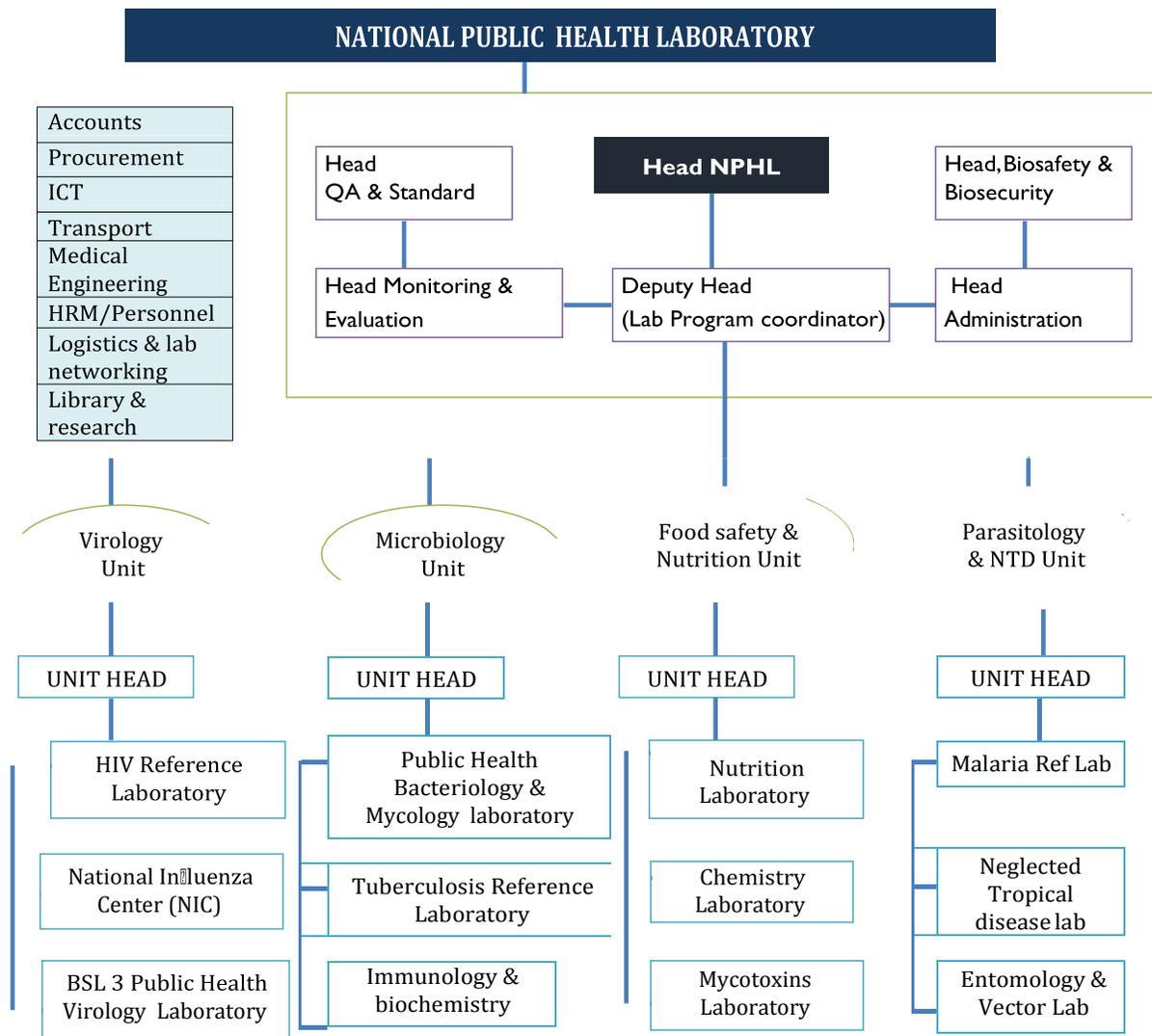
REF

ANNEXES

ANNEX I: MOH ORGANIZATIONAL STRUCTURE 2014/2015



ANNEX 2: Current NPHL Structure 2014/2015



ANNEX 3: SELECTED REFERENCES

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ANNEX 4: LIST OF PARTICIPANTS

Name	Organization	Name	Organization
Mamo Umuro	Head NPHL	Josphat Njoroge	NCC
John Mwihia	MoH/NPHL	Edwin Ochieng	APHL
Bernard muture	MoH/NPHL	Faith Chepkemoi	APHL
John Njihia	MoH/NPHL	Barry Fields	CDC-Kenya
John Matoke	MoH/NPHL	Margaret Mburu	CDC-Kenya
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Kennedy Yatich	MoH/NPHL	Angela Amayo	MSH
Bernard Sande	MoH/NPHL	Mwachari Christina	UMB
Mary Okeyo	MoH/NPHL	Henry Duba	Consultant
Caroline Mbogori	MoH/NPHL		
Robert Nakhungu	MoH/NPHL		
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Athman Juma	MoH/ZDU		
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MINISTRY OF HEALTH

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