



**THE REPUBLIC OF UGANDA**  
**MINISTRY OF HEALTH**

# **Uganda National Health Laboratory Services Strategic Plan (2010-2015)**

**2010**



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## Foreword

This Strategic Plan (2010/11-2014/15) is a major milestone in the journey towards quality, responsive, accessible and cost effective laboratory services. A well developed laboratory system is a fundamental and crucial component of any health system. Laboratory services range from diagnosis of health/disease conditions for individual patients to national disease surveillance and control of disease outbreaks. It therefore requires the necessary attention and resource investment to fulfill its function.

The health system in Uganda aims to deliver a defined National Minimum Health Care Package (UNMHCP) to every member of the Ugandan population. To achieve this laboratory services must be well managed, coordinated and funded. The laboratory services of Uganda have lacked fiscal support required to fulfill their role resulting in increased health care delivery cost due to inadequate disease identification, missed diagnoses, poor case monitoring and management as well as delays in disease outbreak management. This strategic plan is a tool for implementing the National Health Laboratory Policy 2009 as part of the National Health Investment Plan 2010/11 – 2014/15 and aims to rectify this situation.

The National Health Laboratory Services Policy was developed and launched in 2009. This policy outlines the vision, goals, and strategies for strengthening key thematic areas of laboratory services in the country to facilitate adequate support to the UNMHCP. In the past decade, laboratory services for HIV, Tuberculosis, and Malaria have seen marked improvement as a result of increased activity and funding in these areas largely by international health partners. During this period of time, the importance of laboratory services has been progressively acknowledged by MoH, its partners in health and stakeholders.

The development of this National Health Laboratory Strategic Plan began in 2009 through a number of stakeholder consultations and meetings. It provides a national framework and guidance for implementation and investments in laboratory services by the Government and Health Development partners. It is a very useful and powerful guiding tool for the planning and implementation of programs towards strengthening laboratory services in the country in the public and private sector as well as the general Health sector.

The Ministry of Health is committed to strengthening the coordination and quality of laboratory services to support the Uganda National Minimum Health Care Package. All stakeholders and partners are therefore called upon to examine the strategic plan, assess their involvement in the current laboratory services, and thereafter align their present and future activities with the guidelines laid out in this strategic plan.



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The development and finalization of this National Health Laboratory Strategic Plan is a result of contributions and dedicated efforts of the Ministry of Health (MOH), several stakeholders, health development partners and individuals. These parties have been engaged in series of policy reviews, meetings, workshops, and individual as well as institutional consultations to develop this strategic plan and the MOH is grateful for all the support and sacrifice that has been invested for its successful development.

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## Abbreviations and Acronyms:

AFB	Acid-Fast Bacteria
AHPC	Allied Health Professional Council
AMREF	African Medical and Research Foundation
CDC	Centers for Disease Control and Prevention
CPHL	Central Public Health Laboratory
DHO	Director of Health services
DHS	District Health Services
FIND	Foundation for Innovative New Diagnostics
GoU	Government of Uganda
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information Systems
HSD	Health sub-district
HSSP	Health Sector Strategic Plans
IAVI	International AIDS Vaccine initiative
IDI	Infectious Diseases Institute
JCRC	Joint Clinical and Research Center
JMS	Joint Medical Store
LMIS	Laboratory Management Information Systems
MDGs	Millennium Development Goals
MJAP	Mulago-Mbarara Teaching Hospitals' Joint AIDS Program
MOH	Ministry of Health
MRC	Medical Research Council
NDA	National Drug Authority
NDC	Department of National Disease Control
NEQAs	National External Quality Assessment Scheme
NGO	Non-Governmental Organizations
NHLSP	National Health Laboratory services Policy
NHLTAC	National Health Laboratory Technical and Advisory Committee
NHP	National Health Policy
NHRL	National HIV reference laboratory
NMS	National Medical Stores
NPHL	National Public Health Laboratory
NTLP	National Tuberculosis and Leprosy Program
PEAP	National Poverty Eradication Action Plan
PEPFAR	President's Emergency Plan for AIDS Relief
PHP	Private health providers
PNFP	Private not for Profit
PPPH	Private Public Partnerships for Health
SWOT	Strength, Weakness, Opportunities and Threats analysis

TB	Tuberculosis
UBTS	Uganda Blood Transfusion Services
UMLTA	Uganda Medical Laboratory Technology Association
UNCST	Uganda National council for Science and Technology
UNMHCP	Uganda National minimum Health Care package
USAID	United States Agency for International Development
UVRI	Uganda Virus Research Institute
WHO	World Health Organization

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## **Executive summary:**

The National Health Laboratory Strategic Plan (NHLSP) provides a national framework to guide investments in laboratory services by the Government of Uganda and Health Development partners. It aims to strengthen coordination, implementation and management of the services and ensure that they are transparent and responsive to the country's health needs.

Developed by the National Health Laboratories Technical and advisory Committee, the plan went through a highly consultative process involving several key stakeholders. A current situational analysis of laboratory services in the country was conducted and reference made to findings of the National Laboratory assessment survey of 2004 as well as to national, regional and global policy guidelines.

The plan recognizes that an effective and efficient laboratory system is critical for implementation of the Uganda National Minimum Health Care package (UNMHCP) and hence to the improvement of the quality of life of the people of Uganda. It contextualises laboratory services as a source of data for early diagnosis, prevention and control of disease and as such a cornerstone to an effective health response in the country. It also acknowledges that currently, support to laboratories is not adequate to enable them fulfil their roles. A critical appraisal of the current situation of laboratory services in the country including type and level of service, availability and accessibility, human resource, gaps and challenges is summarized.

Taking advantage of strategies undertaken by the Ministry of Health and Development Partners to strengthen the services, the plan gives direction in 13 thematic areas namely: Organization and management laboratory services, Delivery of the services, Laboratory facilities (physical structures) and safety, Laboratory equipment and supplies, Human resources for laboratories, Laboratory quality management systems, Laboratory Information management systems, Research and development, Community involvement in ensuring better laboratory services, Partnerships for improved laboratory services, Regulatory and legal framework, Monitoring and evaluation of implementation of the policy and Financing and accountability for laboratory services. Various strategies and activities to improve and strengthen laboratory services, the key resources and responsible persons are described. As a first step for developing its monitoring and evaluation framework, the plan outlines the targets, timelines as well as key outcome indicators. The plan also outlines a budget based on activities in each of the 13 thematic areas. It shall therefore be used for formulation of realistic annual work plans by the different implementers in the sector.

## Introduction

Nearly 80% of Uganda's population is rural with limited access to health services. Communicable diseases account for 54% of the country's disease burden. Malaria, HIV/AIDS and tuberculosis are leading causes of death with nearly 50, 000 people dying of malaria (Malaria Consortium, 2007), 30,000 of tuberculosis (WHO, 2009) and 64,000 of HIV/AIDS (UNAIDS, 2009) every year. While drancunculiasis has been virtually eliminated, other neglected tropical diseases including onchocerciasis, schistosomiasis and trypanosomiasis remain major problems (Kolaczinski, 2007). There is also a growing burden of non-communicable diseases such as trauma, diabetes, cardiovascular diseases and cancers.

Health laboratories constitute a critical component of health care. They not only generate information that enables timely and accurate diagnosis of disease but are also essential for monitoring of efficacy and potential toxicity of therapy. Laboratory data such as antimicrobial susceptibility profiles forms the basis for designing and regularly updating empirical treatment regimens. In addition, laboratories play a key role in disease surveillance, providing essential data for health systems planning, and disease prevention and control. Lack of reliable laboratory services results in delayed and inaccurate diagnosis of disease, leading to avoidable morbidity and mortality, drug wastage, high expenditure for government/organizations and individuals as well as loss of confidence in the health care system.

The country's Health care delivery is guided by the National Health Policy (NHP) and the Health Sector Strategic Investment Plan which focuses on the delivery of the Uganda National minimum Health Care package (UNMHCP) based on the principles of primary health care, equity, good quality services and strengthening public and private stakeholders' collaborations and partnerships. The Uganda National Minimum Health Care package as defined in the NHPII consists of 4 clusters namely;

- Health Promotion, Environmental Health, Disease Prevention, and community Health Initiative including epidemic and disaster preparedness and response
- Maternal and child health
- Prevention, Management, and Control of Communicable Diseases
- Prevention, Management and Control of Non-Communicable Diseases

The HSSP II (2005-2009) pre-dating the HSSIP (2010-2015) recognized laboratory services as integral to the delivery of UNMHCP and attainment of the country's health goals. It prescribed the development of a National Health Laboratory Policy, establishment of effective leadership for national health laboratory services, strengthening of quality assurance, upgrading of staff and improving their competencies, and provision of adequate supplies and equipment at all levels. It recommended that the National Public Health Laboratory operates as a semi-autonomous entity spearheading the coordination and strengthening of laboratory services nationwide.

## **Core functions of laboratory Services in Uganda:**

This strategic plan aims to strengthen the laboratory services to execute the listed core functions as well as to raise the quality of services to acceptable national and international standards through certification and accreditation. The functions include:

1. Disease Prevention, Control and surveillance
2. Integrated laboratory data management
3. Reference and specialized testing
4. Environmental health and protection
5. Food safety
6. Laboratory improvement and regulation
7. Policy development
8. Emergency response
9. Public health related research
10. Training and education
11. Partnerships and communication

## **Situational Analysis**

The National Laboratory Assessment Survey of 2004 was the last comprehensive nationwide evaluation of laboratory services. A total of 500 laboratories in 53 districts were evaluated, revealing that only 38% met the staffing norms; many were in poor physical state with less than 60% meeting requirements for ventilation, space and plumbing (National laboratory Assessment Survey (2004)). In addition, most of the laboratories were inadequately equipped with less than 40% meeting the national recommendations for their levels.

## **The organization and Management of Laboratory services**

Laboratory services in Uganda are coordinated by the Central Public Health Laboratories (CPHL), a unit under the Department of National Disease Control (NDC) of the Ministry of Health. Established in 1983 as a national reference laboratory to support the Epidemiological Surveillance Division (ESD) in disease surveillance and outbreak investigation, CPHL took up the role of coordination and stewardship of laboratory services in 1999 following a restructuring process at the Ministry of Health.

To support the CPHL, the Director General of Health Services established the National Health Laboratory Technical and Advisory Committee in 2004. This committee with its 6 subcommittees on quality assurance, policy/standards, human resource development, research, logistics and infrastructure/equipment advises the Ministry on laboratory policy and practice.

While CPHL falls under NDC whose mandate is disease surveillance, the bulk of laboratory services are geared towards clinical care and are based in health facilities which falls under the department of clinical services. This has raised complications in reporting, significantly compromising CPHL's ability to manage and coordinate the services in the country.

Laboratories at the various levels of care ranging from national reference laboratories through the health centre III laboratories should function as a cascading network. However, the linkages between the laboratories at different levels remain weak. As a means of improving the coordination of laboratory services at district level, CPHL asked the districts to designate District laboratory focal persons (DLFP). While this has led to some improvement in management of the services at the districts, the effectiveness of many DLFPs has been curtailed by the lack of clearly defined roles and responsibilities as well as limitations in qualifications, skills, rank and resources. All this leaves CPHL with an overwhelming task of directly interfacing with the more than 100 districts in the country which severely limits hierarchical supervision and technical support to these lower facilities. This huge responsibility coupled with unmatched resources compromises CPHL's functionality as a reference laboratory.

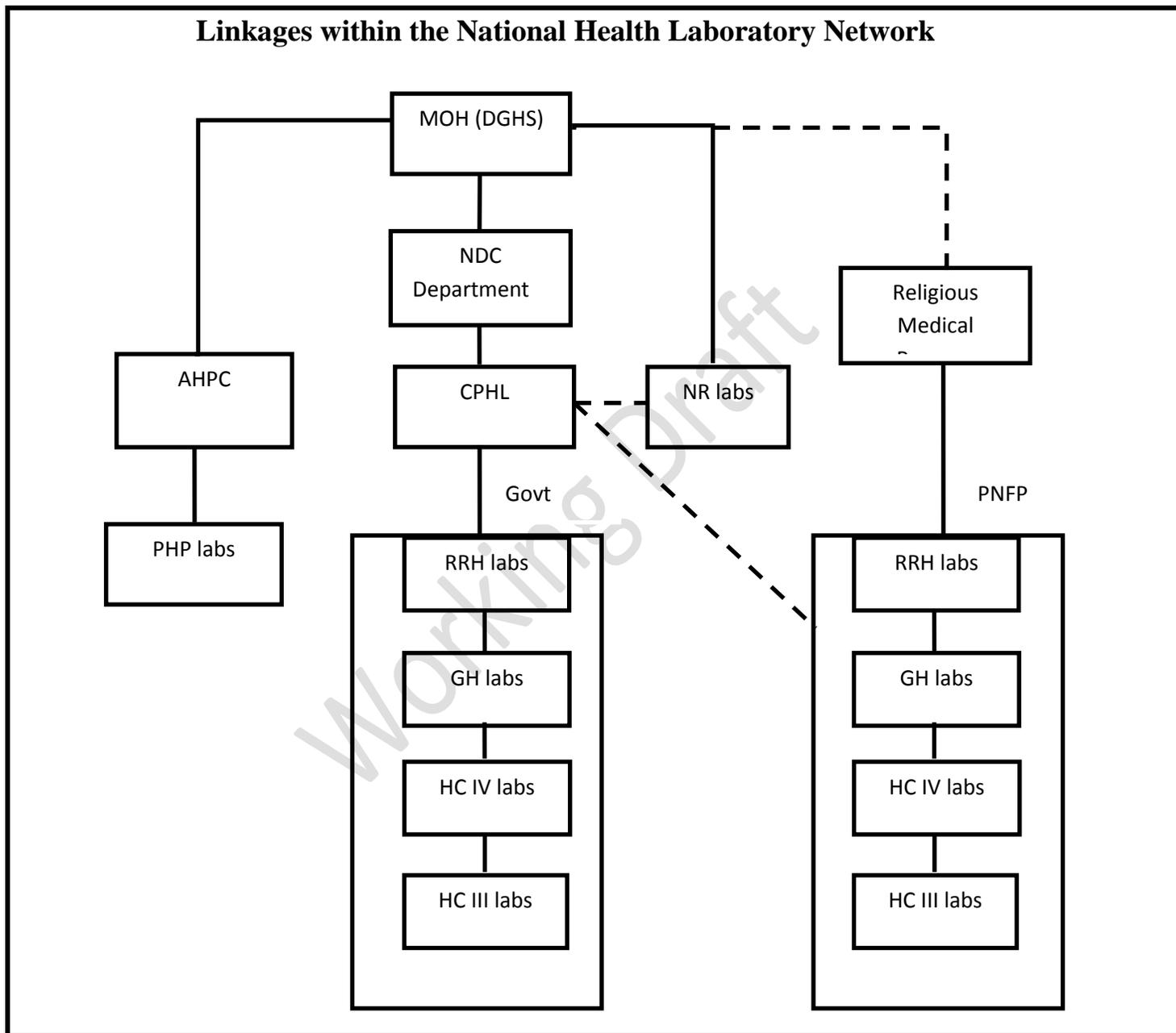
### **Network of Laboratory services**

In Uganda, laboratories are essentially based in health care facilities with their complexity increasing with the level of the facility. The lowest level of fixed facilities are the health centre II at parish level of which the country has 3006. Only a handful of HCII have laboratories given that the national health policy targets HCIII and above for laboratories. At sub-county level are the 1082 HC III, (%) of which have laboratories. Next to the HC III in the tier are the 177 HCIV at county level, constituting the Health Sub-district which has some administrative and supervisory roles over lower facilities. The country also has 129 hospitals including 2 National Referral Hospitals, 17 Regional referral (13 GoU and 4 PNFP) and 9 private hospitals. The rest of the hospitals are General hospitals (64 GoU and 52 PNFP). The PNFPs play a crucial role in particularly serving the rural and hard to reach areas.

While all facilities at the level of health centre IV and above have laboratories, very few of the laboratories are fully functional and are capable of fulfilling all tests on their recommended menus. At National level are a number of standalone reference laboratories including the Central Public Health Laboratories (CPHL), the National Tuberculosis Reference Laboratory, the Vector Borne Diseases Laboratory, the Uganda Blood Transfusion Services and the Uganda Virus Research Institute.

In addition, Medical training institutions, Research Institution and specialized HIV/AIDS care institutions offer a notable range of healthcare related laboratory services. The Makerere University College of Health Sciences and Mbarara University of Science and Technology are the major providers of histopathology and cytopathology with the National Cancer Registry housed within the Makerere College of Health Sciences. The Joint Clinical Research Institute and other HIV care organizations offer specialized testing like viral load that is often not available in other facilities.

Though designed to function as a cascading network, the linkages between the laboratories at different levels remain weak. Hierarchical supervision and technical support is limited as CPHL is overwhelmed by directly interfacing with the more than 100 districts in the country.



**Central Public Health Laboratory (CPHL):**

The CPHL is a unit under the Department of National Disease Control (NDC) of the Ministry of Health. It was established in 1983 as a national reference laboratory to support the Epidemiological Surveillance

Division (ESD) in disease surveillance and outbreak investigation. In 1999, it also took up the role of coordination and stewardship of laboratory services.

Its core functions are:

- Mobilization of funds and planning for laboratory service delivery
- Development of standards and guidelines for operation of regional and peripheral laboratories
- In-service training programs for laboratory personnel
- Coordination of laboratory logistics through development of supplies lists, their specifications and quantification of laboratory supplies
- Support supervision of regional and peripheral laboratories
- Management of a national database for laboratory services
- Management of a national proficiency testing scheme for regional referral hospital and peripheral laboratories
- Management of laboratory component for disease outbreaks

CPHL liaises with various specialized laboratories such as Joint Clinical and Research Center (JCRC), Infectious Disease Institute (IDI), Livestock Research Institute (LIRI), Government Analytical Laboratories, Natural Chemotherapeutic Research Laboratories on a peer basis. However, networking and sharing of data between these various laboratories is weak leading to lack of coherence and duplication of efforts.

Over the years, CPHL has successfully contributed to the identification of numerous outbreaks including meningitis, diarrheal diseases and viral hemorrhagic fever through testing of specimens and coordination of their referral. It has also through the support of partners particularly WHO and CDC setup external quality assessment schemes, developed various guidelines and established in-service training programs to support laboratory service delivery in the country.

However, CPHL faces major challenges in delivering both its reference and coordination functions. Its current location in rented premises in the central business district of Kampala has hindered efforts to appropriately design and equip it as a reference laboratory. Fortunately, the MOH has secured funding from the United States Government (CDC) to construct new laboratory and administrative premises for CPHL in Kampala. The organizational structure, resourcing and lack of consensus on its mandate have significantly restricted its ability to fulfill its core function. Its interaction and networking with other reference laboratories has been weak leading to a lack of coherence and duplication of efforts. To rectify this, CPHL should be accorded a semi autonomous status as stipulated in HSSP 11 (2005-2010).

#### **The Uganda Virus Research Institute (UVRI):**

UVRI is a semi-autonomous institution under the Ministry of Health functioning as the national reference and research centre for investigation of viral infections. It's one of the constituent institutions under Uganda National Health Research Organization.

Its core functions are to:

- Carry out scientific research on viral diseases.
- Advise the government on strategies for control and prevention.
- Coordinate and administer virology related clinical trials within the county, including human HIV vaccine clinical trials.
- Make public policy recommendations to the Uganda National Drug Authority on the access and usage of new drugs and medical technologies

#### **The National Tuberculosis Reference Laboratory (NTRL):**

NTRL was setup to support the National TB and Leprosy Control Program (NTLP)'s efforts towards case finding by sputum smear microscopy and towards delivery of effective chemotherapy to patients.

Its core functions as recommended by the WHO and the International Union against Tuberculosis and Lung Disease are:

- To maintain high proficiency in routine smear microscopy carried out in peripheral health facilities.
- Training of personnel and quality assurance testing of smear microscopy in the national laboratory network
- Surveillance of Anti-tuberculosis drug resistance

In addition, NTRL in Uganda performs the following functions:

- Confirmation by culture of smear negative and retreatment cases,
- Drug susceptibility testing
- Evaluation of new TB diagnostic technologies

The NTRL is currently undergoing refurbishment to upgrade it to Biosafety level III containment laboratory as TB regional center for central region. There are also plans to construct a new NTRL at Butabika within the proposed National Health Laboratories complex and to establish 5 satellite laboratories with T.B molecular and culture capabilities in Mbarara, Gulu, Arua, and Mbale and at Mulago Hospital.

#### **The Vector Borne Disease Control Laboratory (VBDCL):**

VBDCL located in Kampala to supports a number of vector borne disease control programs including; the Onchocerciasis, trypanosomiasis, lymphatic filariasis, schistosomiasis and guinea worm control programs

#### **National STI/STD Reference Laboratory (STD):**

The STD laboratory serves as the routine STD diagnostic centre and a national reference laboratory for STD diagnostics in the country. It handles quality control activities and training of health personnel from upcountry centres. The Laboratory has the capacity to conduct high quality research work and collaborates with a number of research organizations. The STI Clinic serves as the National STD

Referral Centre and the administrative headquarters of the STD Control Unit, one of the units of Uganda's STD/AIDS Control Programme (STD/ACP).

#### **The Uganda Blood transfusion Services (UBTS):**

UBTS is a semi-autonomous arm of the Ministry of Health responsible for provision of adequate and safe blood and blood products for transfusion. It has a network of 7 centers in various parts of the country and supervises transfusion services in all health facilities in the country. Transfusion functions at service delivery level are carried out within clinical laboratories at health facilities. Its core functions are;

- Provides blood transfusion services
- Provide infectious disease testing for private and public facilities.
- Provides proficiency test panels to regional centers

#### **National Referral Hospital Laboratories (NRHL):**

Mulago Hospital complex and Butabika National Referral Hospital offer routine and specialized laboratory services and act as referral centers for lower facilities. However they are both faced with challenges of commodities, equipment and human resource.

#### **Regional Referral Hospital Laboratories:**

Below the National level, are the 13 regional referral hospitals (RRH), each of which has a catchment area of 10 – 12 districts. These Hospitals though self accounting fall directly under the MOH Department of Clinical Services. These laboratories perform diagnostic testing in support of clinical services at the regional hospital; offer specialist and referral services within the respective regions; conduct training for health laboratory staff in collaboration with training institutions; maintain records for laboratory information and forward data to CPHL/HMIS; and implement and coordinate laboratory NEQAS activities in the region. They are also mandated to provide technical supervision to facilities below them. However because the district facilities are under the Ministry of Local Government administrative units, these regional referral facilities have no administrative jurisdiction over the district facilities. As such, the regional level does not currently offer strong linkage between the centre and the districts.

The regional referral laboratories provide the highest level of service in the region. They are headed by regional principal technologist and staffed with medical technologists, technicians, microscopists and phlebotomists. The testing menu consists of Automated Clinical chemistry, Hematology and Leucocyte Immunophenotyping, TB diagnosis, Malaria microscopy, Urinalysis, Basic serology (VDRL, Hep.B, and HIV). However in addition to their limited mandate to oversee lower level laboratories, their range of tests is very limited with most being unable to routinely perform microbiological cultures, a large proportion of biochemical analyses and most immunological tests. The current World Bank supported East African Public Health Laboratories Networking Project plans to refurbish Arua, Gulu, Mbale and Mbarara RRH laboratories to act as satellite laboratories for the CPHL and NTRL. They will be equipped to perform liquid TB culture, TB molecular diagnostics, routine microbiology, hematology and chemistry. Their personnel are to be trained in disease surveillance and outbreak investigation.

#### **Laboratory services within the districts**

The Government of Uganda has 64 General Hospitals (GH) that provide general medical and surgical care. Each GH caters for 2 -3 districts and is managed by the district authority in which it is located.

Laboratories in these facilities provide microscopy, serology, routine chemistries and hematology. The decentralization act of 1997 which aimed to bring health services closer to the people placed all health services including laboratory services at district level under the District Health Officer. Each district is mandated to run their health services (District Health Services – DHS) headed by a District Health Officer (DHO). To ease running of these services, each district is divided into health sub-district (HSD) which are at county level. Within the districts, laboratory services exist at Health Centre IV (county level) and III (sub-county level). The MOH is exploring improving access of the laboratory test to the community. All hospitals, HC IV and about 60% HC IIIs have laboratories but most do not meet minimum requirements at their levels to support UNMHCP.

To facilitate coordination of laboratory services, each district has designated a District laboratory Focal Persons (DLFPs). However, coordination is not the primary duty of most of the DLFPs who are often engrossed in their routine laboratory activities, compromising their coordination tasks. In addition, many of the DLFP are relatively low rank cadres who cannot effectively advocate for laboratory services in their districts.

#### **Private Sector Laboratories:**

The country has 56 PNFs and 9 private hospitals as well as 263 PNF/private health centers. These have laboratories whose complexity is comparable to those of the equivalent government facilities. There are also numerous small private clinics with side laboratories. Apart from the facility based private laboratories are stand alone laboratories with information from the AHPC indicating they are 11 to date. These have played a major role in supplementing the limited range of testing available in the government owned laboratories.

MOH interacts closely with laboratories in PNF facilities through support supervision, provision of supplies, training and proficiency testing. Most PHP laboratories are part of private medical/clinical practices. Registration and regulation of activities of these laboratories remains a major problem due to the limited capacity of the Allied Health Professionals Council, the body mandated to regulate private laboratory practice. Support from MOH to these private laboratories has been limited and networking and information sharing is lacking. There are currently no mechanisms for incorporation of data generated from the PHP laboratories into the National Laboratory Management information system.

#### **University Laboratories:**

Makerere, Mbarara and Gulu Universities offer laboratory services at their Medicine Faculties. The Department of Pathology at Makerere College of Health Sciences is the major provider of histopathology and cytology services, handling specimens referred from facilities throughout the country. The Mbarara pathology department offers similar services in the catchment area of Mbarara Hospital. The Universities also have very active molecular biology, clinical microbiology, immunology and hematology laboratories. In addition, universities play a key role in training of laboratory professionals. They offer courses for pathologists and laboratory scientists and contribute to the training of laboratory technicians through collaboration with the technician training institutions. Interaction between the University

laboratories and the Ministry of Health used to be strong until the 1980s when teaching and clinical services were separated.

### **Laboratory Services delivery:**

Laboratory services are designed to support the minimum healthcare package with complexity of tests conducted rising with the level of care. HCIII is the lowest level with static laboratories although some point of care testing such as HIV and malaria rapid testing takes place at HCII and in the communities. The services are intended to function as a network with a system that allows for referral of specimens or patients to the next level if services are not available at any level. Unfortunately the referral system is very weak and is currently limited to a few donor supported services including T.B, early infant diagnosis of HIV and CD4 specimens. Despite the presence of a recommended test menu at each level, many laboratories are not able to consistently fulfill the testing requirements due to lack of personnel, frequent stock out of supplies and lack of or frequent breakdown of equipment. At health centre III and IV levels where equipment required is much simpler, physical infrastructure and human resource remain the major hindrance to service delivery. .

The General Hospitals lack automated hematology and chemistry equipment. While chemistry and hematology is relatively well supported at the regional hospitals, microbiology is grossly lacking with virtually no RRH laboratories consistently offering microbiological cultures. This has resulted in the inappropriate antibiotic use, delayed identification of outbreaks and has fueled antimicrobial resistance. At the NRH Laboratories testing range is compromised by limited resources to procure specialized testing kits for molecular and immunological diagnostics. The NRH also lack adequate numbers of highly qualified personnel including laboratory scientist and pathologists who are critical in linking the labs to clinical personnel at this complex level of care.

A number of vertical programs such as AIDS Control, Malaria control and the National Tuberculosis and Leprosy Control programs have previously run laboratory related activities to support control of their target diseases. Unfortunately, this approach does not optimize use of financial and human resources. The National Plan for integrated Control of Neglected Tropical Diseases in Uganda 2007-2010 noted these shortcomings and advocates an integrated approach to prevention and control.

### **Facilities and Safety:**

The majority of health facilities in the country were constructed several decades ago and most have not undergone regular routine maintenance. While the Infrastructure Division of the Ministry of Health has developed some designs and construction standards for laboratories, they do not adequately address current safety and quality needs. The National Laboratory Assessment Survey (NLAS) in 2004 found that more than 20% of labs surveyed were of inappropriate design and lacked adequate space, proper ventilation, proper surfaces, running water, proper drainage and a reliable power supply. Most lacked facilities for incineration of laboratory waste, severely compromising laboratory safety.

While CPHL has developed and disseminated safety guidelines for peripheral laboratories, the implementation remains poor due to inadequate safety supplies and equipment. In addition, laboratory staffs often lack the motivation and skills for stringent implementation of safe practices. The Ministry of Health also lacks active personnel health/occupational health programs with no regular health checks and critical vaccines (e.g. hepatitis B) to health professionals where needed.

The potential for malicious use of laboratory supplies (organisms and chemicals) has raised concerns worldwide. In Uganda, chemical and biological materials are not adequately regulated right from entry into the country through storage, use and disposal. There is also limited provision for waste disposal at most of the laboratory facilities

### **Equipment and Supplies:**

As per Ministerial Policy statement (2010/2011), the Ministry of Health fully embraces the new Policy (Vote 116-NMS) on the procurement and supply of medicines and Health supplies and is looking forward to working with all stakeholders in minimizing medicines/supplies stock outs country wide. The National Medical Equipment Policy (2009) stipulates that Medical equipment represents a substantial asset in the health care delivery system and needs to be managed efficiently and that their appropriate daily, periodic and corrective maintenance are key to achieving safe and cost-effective management.

Laboratory equipment and supplies are procured and distributed mainly by the Government owned National Medical Stores, a private not for profit Joint Medical Store (JMS) and a number of private companies. For government and PNFP facilities, a credit line exists at NMS and JMS where each facility is allocated a sum of money from which they draw an equivalent of supplies. The credit line is currently funded by CDC to a tune of USD 9 million annually. Under the credit line, the MOH (CPHL) identifies the list of supplies, makes specifications, quantifies and makes forecasts. NMS and JMS distribute the supplies to the districts. Facilities are tasked with placing orders, picking supplies from the districts, maintaining consumption data and sending it to CPHL.

While the credit line has greatly improved the supplies situation in the country, the list of supplies does not cater for more specialized testing at the high level laboratories. In addition, there are often delays in procurement of supplies, their delivery to the districts and from the districts to the health facilities. At the facilities, personnel are often not knowledgeable about logistics management and storage facilities particularly for cold chain maintenance are inadequate.

Based on the recommended tests for each level, a list of equipment recommended for each level exists. Acquisition, use, maintenance and disposal of all medical equipment are guided by the National Medical Equipment policy, last revised into the 4<sup>th</sup> Edition in 2009. In addition, the Ministry established a National Advisory Committee on Medical Equipment (NACME) to formulate policy on medical equipment management and to continually review the country's medical equipment needs. However, many laboratory stakeholders have not been sensitized on the policy and role of NACME and other key players in regulation of equipment importation and use. As such, many partners purchase equipment with varying specifications leading to difficulties in their maintenance. While the infrastructure division of the MOH is mandated to maintain all medical equipment in the country through its central and regional maintenance workshops, the capacity of these workshops is limited by inadequate numbers of skilled technicians, lack of tools/equipment and inadequate funding. This is compounded by the lack of skills

and culture for routine equipment maintenance among laboratory personnel. As such, breakdowns are frequent resulting in compromised quality of results, loss of working time and reduced equipment lifespan. Like for expired supplies, mechanisms for disposal of equipment are not available at the facilities.

### **Human Resource:**

The Ministry of Health Human Resources for health policy purposes that Human Resources for Health and their related functions are given prominence, importance and resource allocations they require as the most crucial factor for health service delivery. The Human Resources For Health Bi-Annual Report (October 2009-April 2010) also emphasizes that an efficient and effective health-care delivery system largely depends on availability of carefully planned, effectively trained, equitably distributed and optimally utilized health workers. Laboratory services in Uganda are provided by pathologists, laboratory scientists, technologists, technicians and laboratory assistants. Though not a recognized cadre, microscopists trained specifically for T.B and malaria, form a significant proportion of the laboratory workforce. The country has a total of 15 government/private owned schools train at diploma/certificate level, passing out about 900 graduates annually. Of the country's Universities, 2 train pathologists and 2 offer Master of Science and 3 Bachelor's programs.

Despite their existence, the training program curricula have not had adequate input from the MOH and as such are not in touch with the country's needs. Many of the institutions lack the equipment that is essential to meet contemporary needs for training of laboratory personnel. The number of personnel trained at the highest level (pathologists, laboratory scientists and laboratory managers) remains too low to meet national needs. Only a small percentage of the laboratories in the country meet the recommended staffing norms, with many manned by microscopists. Moreover, the staffing norms have not been renewed in line with changing demands.

The scheme of service has not been updated to incorporate emerging cadres of laboratory professionals, leaving laboratory scientists qualifying from recently established degree programs no opportunity to join government service. On the other hand, many laboratory professionals remain unemployed due to restrictions on recruitment into public service. Personnel in service are poorly motivated due to low remuneration, poor working conditions, insufficient skills, inadequate supervision and a lack of opportunities for professional and career progression.

While many in-service training programs have been initiated by the MOH and partners, many of these are not responsive to the personnel needs. Coordination of the trainings is poor, resulting in duplication and poor optimization of trainee time. Two laboratory professional bodies, the Uganda Medical Laboratory Technology Association (UMLTA) and the Association of Pathologist of Uganda exist in the country. However, they have not been adequately visible and their potential to train, motivate and improve ethical standards of their members has not been harnessed

## **Laboratory quality management systems**

The Health Sector Ministerial Policy Statement (2010/2011) emphasizes quarterly review, quality assurance activities and support supervision as one of the action points to facilitate the attainment of a good standard of health by all people of Uganda in order to promote a healthy and productive life.

Inadequacies in the infrastructure, human resources, equipment, supplies and other aspects compromise the quality of services delivered at many facilities. The decline has caused loss of trust in the services by both clinicians and patients. Only a handful of laboratories, mostly involved in internationally funded clinical research conform to ideal standards of quality such as good clinical laboratory practice (GCLP). The bulk of laboratories across the entire spectrum of complexity are not verifiably compliant with basic quality standards. The majority of laboratory staff in the country lack knowledge, skills and the culture committed to quality management.

Standards defining types of tests, staffing, equipment, physical structure requirements and processes management, the blueprint for quality assurance, are lacking. While documents such as the Laboratory Biosafety manual and the Standard operating procedures have been developed and disseminated by CPHL, they have not been widely followed by users. The National Health Laboratories Technical Committee (LTC) has tasked its Quality Assurance Sub-Committee to develop a national laboratory quality management plan for clinical laboratory services. This shall define institutional roles and responsibilities.

There is no clearly developed and well coordinated system for internal and external quality assessment. A number of external quality assessment (EQA) schemes exist in the country. They include CPHL's National External Quality Assessment Scheme (NEQAS) proficiency testing, NTRL's AFB smear microscopy slide rechecking, AMREF's Regional East African Quality Assessment Scheme (REQAS) proficiency testing, the UK-NEQAS scheme for CD4 testing and the UVRI HIV rapid testing proficiency testing. However, these schemes are limited in scope and coverage; are irregular in timing and do not usually provide timely feedback to participating laboratories. Poor coordination between the responsible organizations often leads to duplication.

There is also no national laboratory certification or accreditation body to verify quality and standards for laboratory services. The bulk of laboratory staff in the country lack knowledge, skills and the culture committed to quality management. There are currently only a handful of internationally accredited laboratories in the country. However, a National Laboratory Accreditation and Certification Plan based on the WHO Regional stepwise accreditation guidelines are under development. This is alongside setting up of an East African Regional Accreditation Body under the EAPHLNP.

## **Laboratory management Information systems**

Laboratory data is currently under the overall management of CPHL. Paper based Data collection tools including laboratory registers, requisition forms, consumption logs, have been developed, disseminated and incorporated into the National Health Management Information System (HMIS). Data collected at facilities is sent to the districts and to CPHL for collation and analysis and some ends up at the MOH Resource Centre for incorporation into the overall HMIS. While CPHL has been managing laboratory data for about 5 year, there is no comprehensive National Laboratory Data Management Plan stipulating

the objectives for data collection, mechanisms of collection, transmission, analysis, utilization and the key indicators. The data management centre at CPHL lacks personnel, hardware and software for effective data management and is not linked to the MOH resource center for effective integration of laboratory data into the HMIS. Collection of data and its transmission from facilities to the districts to CPHL is managed manually, significantly slowing the process and consuming significant personnel time and is not effectively used at many levels.

### **Research for laboratory services development**

At the moment, there are no coordinated mechanisms for conducting operational research geared at improving laboratory service delivery. While a couple of surveys have been conducted periodically, they tend to be spread too far between and are often not comprehensive. Many new diagnostic approaches including test kits and other technologies are often adopted in the country without in country evaluation. Little work has gone into development of new cost effective methodologies best suited for the Ugandan population. The limited availability of information on the laboratory sector has impeded mobilization and allocation of resources. While laboratories widely participate in health research, laboratory personnel are often not involved in the design and are not often given due recognition for their roles. In addition, research if not well planned or regulated may divert human and other laboratory resources from routine care work.

### **Community services**

There is inadequate health promotion on the role and use of laboratory services and communities are informed about their right to appropriate laboratory diagnostic testing. There is need to ensure confidentiality and privacy of laboratory clients by laboratory staff.

### **Partnerships:**

The National Policy on Public Private Partnerships in Health (September 2010) guides the promotion and encouragement of public-private partnership as a way to achieve economic growth and poverty eradication and intend to strengthen partnerships with the Private Health Sector. The Ministry of Health works alongside numerous partners in the promotion and delivery of health laboratory services in the country. Other Ministries including that of Agriculture, Animal Industry and Fisheries contribute to diagnosis and management of zoonotic infections through their Veterinary Public Health Laboratories. The Ministry of Local Government is responsible for management of Health Services within districts and is critical to running of laboratory services throughout the country. Development partners including WHO, CDC, USAID and FIND among others provide technical assistance and fund priority areas. The development partners often work through implementing partners such as MJAP, JCRC, Mildmay, and TBCAP to implement various areas of service delivery alongside the Ministry of Health. The private sector including PNFP and PHP provide 50% of the health care in the country and as such play a significant role in laboratory service delivery. The PNFPs often serve hard to reach areas of the country, thus promoting equity in service delivery. Some of standalone PHP laboratories offer testing that is not currently available in the government systems thereby complementing services delivered by Government.

Government has recognized the role of PNFP in delivery of laboratory services by including them in the credit line for the provision of laboratory supplies, provision and training of personnel and inclusion in EQA programs. The MOH has set up the Health Policy Advisory Committee consisting of various partner organization and MOH personnel to streamline coordination of partner activities. However, coordination of partner supported laboratory activities remains inadequate with partners implementing activities outside national priorities, duplicity of some activities and conflict between government and partners for personnel.

### **Regulatory Framework:**

Laboratory services in the country are regulated under the Allied Health Professionals Act of 1996. The act empowers the Allied Health Professional's Council (AHPC) to register all laboratory professionals before they can practice in the country and renew the registration on an annual basis. As such, the council approves laboratory training courses within the country to ensure that their graduates qualify for registration. However, pathologists who are usually medical doctors are registered by the Uganda Medical and Dental Practitioners Council. The AHPC is also mandated to register all private laboratories as they are set up and to renew their practicing licenses on an annual basis. The council also regulates all laboratory practice and is responsible for any disciplinary action against laboratory professionals or laboratories.

Since its inception, the council has been grossly underfunded and understaffed with the registrar and 2 support staff as the only fulltime personnel. The council is also poorly linked to the districts where laboratory personnel operate and where private laboratories are established. As such, many practicing personnel are not registered and many of the private laboratories, many of which are attached to clinics are not registered, significantly compromising the basic standards of practice.

In addition, there are very few stand alone laboratories with most in private sector being associated with private clinics and therefore being registered with UMDPC. This limits the financial resources available to the AHPC in form of licensing and registration fees. The lack of funding restricts the council's capacity to implement its regulatory role thus many laboratories operate without proper registration of staff or the facilities themselves.

The National Drug Authority (NDA) is another agency that plays a role in regulation of laboratory service delivery through regulation of all laboratory supplies and equipment imported into the country or manufactured within. However, NDA still lacks laboratory professionals adequately skilled to provide leadership in regulation of laboratory supplies and equipment.

### **Monitoring and Evaluation:**

Monitoring and Evaluation aims at informing policy makers about progress towards achieving targets as set in the annual sector plan and it also helps managers to make proper decisions. Currently there is no effective system or measurable indicators to assess the laboratory system's performance on whether it is effectively supporting the delivery of the UNMHCP. Monitoring and Evaluation has not been fully

applied in planning and reviewing laboratory service delivery. Most of the time resources deployed in the laboratory sector are poorly monitored or not monitored at all. Where stakeholders have attempted to monitor and evaluate lab services, they have had to resort to using various M& E tools which are not specific to laboratory services. It will be necessary to put in place appropriate mechanisms to monitor and evaluate the implementation of the National Health Laboratory Services Policy, and the delivery of laboratory services in general.

**Finance and accountability:**

The laboratory services are grossly under-funded with no dedicated budget line for laboratory services. This has been compounded by inadequate systems and skills for planning the utilization and for accounting for the limited resources invested in laboratory service delivery. This shall need to be addressed in order to optimize the mobilization and utilization of the resources.

Working Draft

## **The Strategic Plan**

### **Context and Rationale for development of the National Health Laboratories Strategic Plan**

This strategic plan is developed to implement the National Health Laboratory Policy (NHLSP) 2009, a key milestone in the implementation of the HSSP II. It's also developed in the framework and references regional efforts focused at improving health laboratory services in Africa, notably the Maputo declaration on strengthening of Laboratory Systems in Africa (2008) and the Yaoundé WHO Ministerial Laboratory Resolution of 2008.

The NHLSP gives strategic direction in 13 areas namely:

- Organization and management of laboratory services
- Delivery of the services
- Laboratory facilities (physical structures) and safety
- Laboratory equipment and supplies
- Human resources for laboratories
- Laboratory quality management systems
- Laboratory Information management systems
- Research and development for laboratory services
- Community involvement in ensuring better laboratory services
- Partnerships for improved laboratory services
- Regulatory and legal framework for laboratory services
- Monitoring and evaluation of implementation of the policy
- Financing and accountability for laboratory services

### **Purpose of the strategic plan:**

This 5-year National Health Laboratory Services Strategic Plan provides the framework to guide investment and development of health laboratory services by the Government of Uganda, health development partners and other stakeholders. It's developed to guide the implementation of the National Health Laboratory Services Policy (NHLSP) in line with the National Health policy and the HSSIP.

### **Vision statement:**

Quality health laboratories services shall be available to all people in Uganda

### **Mission:**

To ensure sustainable health laboratory services to support the delivery of the Uganda National Minimum Health Care Package at all levels.

### **Goal**

Establish coordinated Health laboratory services functioning according to national and international standards.

## **Strategic Objectives of the plan:**

This document:

- Guides the country in developing effective lab services
- Provides direction and coordination of donors and implementing partners' activities in the laboratory services sector.

## **Core Value and guiding principles of laboratory services:**

- Integrity: Delivering services in the right manner, at the right time with the right attitude i.e. honesty, trustworthy, reliability and uprightness in executing duties.
- Transparency: Openness to non classified information and professional conduct.
- Accountability: Obligation to demonstrate that work has been conducted in compliance with agreed rules and standards including performance measures.
- Moral and ethical practices: Work in accordance with set rules, regulations and professional conduct
- Confidentiality and privacy: Records, interest and affairs related to the clients are confided to the relevant persons
- Equity: Laboratory services provided equally regardless of gender, geographical location, ethnicity and socio-economic factors.
- Customer satisfaction: Quality services that make the client satisfied according to their expectations
- Respect to customers; Giving priority and value to the clients.
- Value for money laboratory services that Support for the delivery of the UNMHCP
- Integrated service delivery systems, rather than vertical /individual disease programs
- Tiered laboratory structure and network to reflect the links and referral network

## **The Strategies**

### **Organization and management of laboratory services in Uganda:**

#### **Rationale:**

The health laboratories need to fall under one clear management structure at all levels for management, coordination, and supervision. This will allow the LTC to play its advisory role in implementing activities for laboratory services in the country.

#### **Policy Statement:**

A clear organizational structure with appropriate authority to coordinate and manage the provision of comprehensive health laboratory services in the country shall be in place

#### **Strategic objectives:**

1. Establish a department within MOH for coordination and delivery of national health laboratory services
2. Establish coordination structures for laboratory services at Regional and District levels

**Specific objectives:**

- Define management structure, roles and responsibilities of the National Public Health Laboratory, university and specialized laboratories
- Define staff establishment for the department of laboratory services, recruit and deploy officers.
- Strengthen the Role of National Health Laboratory Technical and Advisory Committee
- Define roles and responsibilities of regional and district laboratory coordinators to cater for both public and private health laboratories

**Laboratory services:****Rationale:**

There is a need to have integrated laboratory services as the rational and efficient use of Human and financial resources, saving on the time of implementer and beneficiaries, impact on the targeted disease, encouraging closer stakeholder collaboration and strengthening health services delivery systems to support the support the minimum healthcare package.

**Policy Statement:**

Quality services at the specifies health systems levels shall be provided to support effective patient management, disease surveillance, epidemic investigation, research and other specialized services in line with UNMHCP.

**Strategies:**

1. Fill gaps in laboratory services required to support the UMHCP
2. Strengthen the capacity of the Specialized laboratories to support clinical care, research, disease surveillance and management of outbreaks

**Specific Objectives:**

- Map existing Lab Services based on epidemiological data to identify and fill gaps.
- Develop and implement mechanisms for equitable distribution of laboratory services provision
- Identify and fill gaps to fulfill the mandate of specialized laboratories
- Implement an effective and efficient specimen/patient referral and reporting system
- Implement communication strategy between health service management, the laboratory and its customers

## **Facilities and Safety:**

### **Rationale:**

There is a need to strengthen Biosafety and Biosecurity practices to provide a conducive workplace environment for laboratory services workers and its customers.

### **Policy statement:**

All laboratory facilities shall have appropriate space and safe environment for personnel, patients and community.

### **Strategies:**

1. Implement National safety and infrastructure standards and guidelines for all levels of lab services.
2. Implement National guidelines and standards to safeguard against malicious use of chemicals, infectious agents and other harmful materials.

### **Specific objectives:**

- To constitute a national laboratory biosafety/biosecurity committee headed by a national biosafety officer that will ensure compliance to the guidelines
- Construct/renovate/refurbish and maintain laboratories in conformity with national infrastructure and biosafety standards and guidelines.
- Develop, train and disseminate national standards and guidelines for biosecurity.
- Develop an inventory of all chemicals, infectious agents and other harmful materials that have potential for malicious use.
- Regulate storage and access to chemicals, infectious agents and other harmful materials that have potential for malicious use.

## **Equipment and supplies:**

### **Rationale:**

The Ministry of Health is looking forward to working with all stakeholders to minimize medicines/supplies stock outs country wide. There is a need to manage medical equipment efficiently and conduct appropriate daily, periodic and corrective maintenance to achieve safe and cost-effective management of laboratory services.

### **Policy statement:**

All laboratories shall have appropriate functional equipment and adequate supplies to support uninterrupted delivery of the UNMHCP

### **Strategies:**

1. Establish a national laboratory logistics coordination office at MOH

2. Develop and implement the National Procurement and Supply Management Plan to strengthen lab supply chain system
3. Strengthen warehousing, distribution and storage of lab logistics and supplies

**Specific objectives:**

- Establish a position for national laboratory logistics coordinator at MOH
- Advocate for laboratory technical advisors at NMS, JMS and NDA
- Strengthen the national logistics and supplies subcommittee of LTC
- Advocacy for integration, training and mentoring on supply chain management at all levels
- Implement information sharing strategies between supply chain stakeholders
- Have accurate national quantification for reagents, supplies and commodities.
- Develop guidelines and procedures for procurement of lab supplies including donations.
- Establish National Monitoring and Evaluation system for supply chain management implementation
- Increase the storage and distribution capacity at all levels
- Develop an effective system for safe disposal of expired and damaged supplies and equipment for both public and private sector health laboratories.
- Establish a position for national laboratory equipment engineer at MOH
- Strengthen the national infrastructure subcommittee of LTC to include biomedical engineers
- Review existing standards and guidelines for laboratory equipment at all levels
- Train biomedical engineers for laboratory equipment
- Strengthen National and Regional Equipment Maintenance Workshops

**Human Resource:**

**Rationale:**

There is a need to strengthen the availability of carefully planned, effectively trained, equitably distributed and optimally utilized health workers at all levels of the laboratory network.

**Policy statement:**

The laboratory services shall have an adequate number of skilled staff with the necessary competency and motivation to deliver quality lab services at all designated levels.

**Strategies:**

1. Strengthen coordination of laboratory Human resources
2. Recruit, deploy and retain staff to adequately provide laboratory services in the country
3. Strengthen pre-service training of laboratory professionals to meet national Health laboratory service requirements
4. Build competence of laboratory personnel through in-service training

**Specific objectives:**

- Establish a position for Laboratory human resources coordinator
- Update the scheme of service to reflect current job requirements by qualifications
- Update the laboratory staffing norms to meet current needs
- Develop and implement Continuous Professional Development plan for laboratory professionals
- Establish national annual pre-service training output
- Review curricula for all levels of health laboratory training
- Strengthen the regulation and supervision of Health Laboratory training institutions and programs
- Identify and fill gaps for in-service training

**Laboratory quality management systems:****Rationale:**

Health laboratories across the entire network need to be strengthened to be compliant with basic quality standards. Quality assurance activities and support supervision are some of the action points to facilitate the attainment of a good standard of health by all people of Uganda. There is a need to certify and accredit Health laboratories by national and international standards.

**Policy statement:**

There shall be a national laboratory quality management system in place to ensure accurate, effective and safe service delivery

**Strategies:**

1. Strengthen coordination of laboratory quality assurance activities
2. Establish National Frame-work for the Implementation of laboratory Quality Management System
3. Develop and Implement a Quality Master Plan, to include EQA system, certification and accreditation of laboratories

**Specific objectives:**

- Establish a position for a Laboratory Quality Assurance Coordinator at MOH.
- Establish quality assurance implementation and coordination structures at all levels
- Develop, train and disseminate national standards
- Develop and implement a National IQA system
- Develop and implement a National EQA system
- Establish a National Certification / Accreditation System
- Establish National Monitoring and Evaluation system for quality management implementation

**Laboratory management Information systems:**

**Rationale:**

There is a need to develop a comprehensive National Laboratory Data Management system that stipulates the objectives for data collection, mechanisms of collection, transmission, analysis, utilization and the key indicators.

**Policy Statement:**

Laboratory information systems shall be established and strengthened to promote laboratory performance, quality patient care, surveillance, evidence-based planning, policy formulation and research.

**Strategies:**

1. Strengthen coordination of laboratory information system
2. Establish National Frame-work for the Implementation of Lab Information Management System

**Specific objectives:**

- Establish a position for a Laboratory information systems Coordinator at MOH/RC.
- Establish LMIS implementation and coordination structures at all levels to include private labs
- Develop and Implement LMIS Master Plan
- Develop and disseminate information management guidelines to ensure confidentiality and data archiving
- Develop bulletin for advocacy and dissemination of lab information.

**Research for laboratory services development:****Rationale:**

There is a need to have comprehensive and coordinated mechanisms for conducting operational research geared at improving laboratory service delivery.

**Policy statement:**

Laboratories shall be encouraged to participate in relevant health research to improve patient management, laboratory performance and disease control.

**Strategies:**

1. Develop and implement a National Research Agenda for Laboratory services

**Specific objectives:**

- Identify priority areas for research
- Develop guidelines for the utilization of health laboratories and their personnel for research activities
- Plan and implement the research agenda
- Train laboratory personnel in research methodology

- Identify mechanisms for dissemination of research findings
- Evaluate and standardize reagents and equipment to the Uganda situation

**Community service:****Rationale:**

There is need to ensure confidentiality, privacy of laboratory clients by laboratory staff, conduct adequate promotion on the role and use of laboratory services and inform communities of their right to appropriate laboratory diagnostic testing.

**Policy statement:**

Laboratory services shall be an integral part of the health services responsiveness to the community needs and shall adhere to ethical standards

**Strategies:**

1. Strengthen ethical Customer centered practices to facilitate treatment of patients with respect, safeguard confidentiality and privacy

**Specific objectives:**

- Establish and/or strengthen existing IEC strategies to inform the communities about their role and the use of laboratory services
- Develop and Implement guidelines for patient confidentiality and privacy

**Partnerships:****Rationale:**

Health Laboratory services related public-private partnership need to be promoted and encouraged as a way to achieve improved services delivery.

**Policy statement:**

Networking between public and private laboratories shall be promoted to improve access and equity of laboratory services.

**Strategies:**

1. Establish a framework that will enhance collaboration and coordination of partner activities

**Specific objectives:**

- Establish position of laboratory liaison in the council
- Mobilize funds to support the AHPC
- Coordinate activities of the AHPC in the districts
- Widely disseminate the laboratory code of ethics

- Strengthen laboratory Professional Associations
- Strengthen the system for Registration, licensing and inspection of laboratories

**Regulatory Framework:****Rationale:**

Laboratory services regulation need to be strengthened under the Allied Health Professionals to improve conformity to standards of practice.

**Policy Statement:**

National legal and regulatory framework components shall be streamlined and strengthened to enforce licensing, registration and control of all health laboratory services.

**Strategies:**

1. Strengthen the Allied Health Professionals Council
2. Strengthen ethics and professionalism among laboratory professionals
3. Ensure registration of all laboratories and practicing laboratory professionals

**Activities:**

Activities will be implemented in line with the MOH Activity Work plan 2010/2011(July 2010) and will be guided by the following specific objectives:

- Strengthen the Allied Health Professionals Council
- Strengthen ethics and professionalism among laboratory professionals
- Ensure registration of all laboratories and practicing laboratory professionals

**Monitoring and Evaluation:****Rationale:**

It is necessary to put in place appropriate mechanisms to monitor and evaluate the implementation of the National Health Laboratory Services Policy, and the delivery of laboratory services in general. There is a need to develop a comprehensive and effective monitoring and evaluation system to assess the laboratory system's performance in supporting the delivery of the UNMHCP.

**Policy statement:**

Mechanisms shall be in place to monitor and evaluate the implementation of this laboratory policy.

**Strategies:**

1. Establish and strengthen the Monitoring and Evaluation of Laboratory services

**Specific objectives:**

- Establish a position for Laboratory Monitoring and Evaluation Coordinator at the MoH headquarters
- Develop M&E Framework for laboratory services
- Develop and Implement a M&E Plan

**Finance and accountability:****Rationale:**

The laboratory services require a dedicated budget line through central unifying and coordinating body for laboratory services at the right level within MOH.

**Policy statement:**

Effective financing mechanisms shall be put in place centrally and at local government levels to ensure availability and accessibility of adequate resources for laboratory services.

**Strategies:**

1. Strengthen financial planning for laboratory services to establish a dedicated budget line.
2. Mobilize funds to meet the laboratory budget needs (government and donor funding)
3. Extend financial support to private health facilities for laboratory services in accordance with PPPH Policy.

**Specific objectives:**

- Develop costed and timed annual work plan for laboratory services at all levels
- Develop and Implement resource accountability guidelines for laboratory services
- Develop and implement a plan for resource mobilization
- Subsidize high priority diagnostic tests to the private sector to improve access

## The National Health Laboratory Services Strategic Plan Matrix

4.1 Organization and Management: A clear organizational structure with appropriate authority to coordinate and manage the provision of comprehensive health laboratory services in the country shall be in place											
Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year					Responsibility Centers	Resources
					1	2	3	4	5		
1. Establish a department within MOH for management, coordination and delivery of national health laboratory services	1. Define management structure, roles and responsibilities of the National Public Health Laboratory, university and specialized laboratories and all the labs	1. Develop the relevant organograms for the different levels of labs 2. Define linkages between NPHL, university and specialized labs and across the laboratory network	Department established by year 2	1. Lab services department established and functional by year 2 2. Functional Laboratory network by year 2		X				Head of Lab Services (Acting) LTC chair Technical Advisor	Ministry of Public Services Health Services Commission MOH Human Resource and Development dept MOH budget (laboratory services) MOH restructuring policy National Health Laboratories Policy HSSPs I, II and III National Health policy Partners
	2. Define staff establishment for the department of laboratory services in MOH, recruit and deploy the relevant officers for the unit.	1. Define roles and responsibilities for all positions 2. Develop relevant job descriptions 3. Recruit and deploy officers	Personnel recruited and deployed by year 2				X	X	X	X	Head of Laboratory Services (Acting) LTC Chair Technical Advisor

**4.1 Organization and Management: A clear organizational structure with appropriate authority to coordinate and manage the provision of comprehensive health laboratory services in the country shall be in place**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year					Responsibility Centers	Resources	
	3. Strengthen the role of National Health Laboratory Technical and Advisory Committee (NHLTC)	1.Review TOR for NHLTC 2.Provide resources to facilitate their work on a more consistent basis	Functional NHLTC chaired by Commissioner responsible for lab services by year 1			X	X	X	X	X	Head of Laboratory Services ( Acting) LTC Chair Technical Advisor	Office of Director General MOH budget (laboratory services) Existing TOR
2. Establish coordination structures for laboratory services at Regional and District levels	1. Define roles and responsibilities of Regional and District Laboratory Coordinators to cater for both public and private health laboratories	1. Define roles and responsibilities for Regional and District Laboratory coordinators 2.Designate and deploy regional coordinators 3.Redefine the position of DLFPs from a designation to an appointment.	Coordination structure in place and functional by year 2								Head of Lab Services (Acting) Technical Advisor	Ministry of Health HRD dept Ministry of Public Services Ministry of Finance Ministry of Local Government District Public Service Commission Allied Health Professionals Council MOH budget (laboratory services budget ) Partners

**4.2 Laboratory Services: Quality Laboratory Services at the specified health system levels shall be provided to support effective patient management, disease surveillance, epidemic investigation, research and other specialized services in line with Uganda National Minimum Health Care Package (UNMHCP).**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year					Responsibility Centers	Resources
1. Strengthen laboratory services to support delivery of the UNMHCP	1. Map existing Lab Services based on epidemiological data to identify and fill gaps.	1. Review minimum tests for the various levels recommended to support the delivery of the UNMHCP 2. Conduct baseline survey to establish the status of laboratory services in the support of UNMHCP 3. Fill gaps between existing status of services and that recommended for UNMHCP	1. Assessment of Current service provision pattern and gaps identified by year 1 2. Plan for corrective measures developed and implemented by year 4	1. % of health facilities with laboratory services fully supporting UNMHCP. 2. % of population with geographic access to lab services		X	X	X	X	Head of Lab Services (Acting) LTC Chair Technical Advisor	MOH clinical departments Mapping tools MOH UNMHCP guidelines National Health Laboratory Policy HSSP I, II and III MOH budget (Laboratory Services) Partner support
	2. Ensure equitable regional provision of laboratory services	1. Identify underserved areas and the factors leading to this challenge 2. Deploy adequate staff to hard-to-work in areas 3. Mobilize resources for continuous service improvement 4. develop a plan/program to address the causes of inequities in service provision.	1. Equitable provision of laboratory services implemented by year 5 2. Functional basic laboratory services at all levels according to set standards by yr5			X	X	X	X	Head of Lab Services (Acting) LTC chair Technical advisor	MOH clinical departments Ministry of Public Service Ministry of Finance MOH budget (Laboratory Services) Ministry of Local government District Public Services Commission MOH PPPH policy MOH UNMHCP guidelines National Health Laboratory Policy Partner support

**4.2 Laboratory Services: Quality Laboratory Services at the specified health system levels shall be provided to support effective patient management, disease surveillance, epidemic investigation, research and other specialized services in line with Uganda National Minimum Health Care Package (UNMHCP).**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year				Responsibility Centers	Resources
2. Strengthen the capacity of the specialized laboratories to support clinical care, research, disease surveillance and management of outbreaks.	1. Identify and rectify the weaknesses in the delivery of services by specialized laboratories,	1. Clarify and document the mandate of specialized laboratories 2. Conduct gap analysis for all the specialized and referral laboratories 3. Build up capacities at all the specialized and referral laboratories to adequately carry out their stipulated mandates 4. Implement the national IHR work plan	Specialized laboratories offering the mandated range of services by year 5	% of specialized laboratories able to fulfill their mandate.		X	X	X	X	Head of lab services (Acting) LTC chair Technical Advisor  MOH clinical departments Office of the Director General for Health Services Existing parliamentary Acts National Health Laboratory policy Respective boards of directors MOH budget (Laboratory Services) Partner support
	2. Implement an effective and efficient specimen/patient referral and reporting system	1. Procure adequate supplies for specimen/patient referral in the laboratory network 2. Develop comprehensive guidelines/SOPs for specimen/patient referral across the laboratory network 3. Develop a tracking system for specimen/patient referral and feedback mechanisms	Effective, efficient and sustainable referral and reporting system in place by year 3	% of referrals that meet the set turnaround times			X	X	X	Head of laboratory services (Acting) Technical Advisor  Heads from laboratory network MOH budget (Laboratory Services) Existing programs Partners

**4.2 Laboratory Services: Quality Laboratory Services at the specified health system levels shall be provided to support effective patient management, disease surveillance, epidemic investigation, research and other specialized services in line with Uganda National Minimum Health Care Package (UNMHCP).**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year					Responsibility Centers	Resources	
3. Promote rational utilization of laboratory services	1. Develop enhanced communication strategies between health service management, the laboratory practitioners and clients, and the community	1. Assess patterns of laboratory utilization at the different levels 2. Develop mechanisms to correct imbalances in utilization 3. Advocate and sensitize the clinicians, laboratory practitioners, the general public and all users of laboratory services about the rational and appropriate use of laboratory services	1. Effective and rational utilization of laboratory services achieved by year 3 2. The right type of laboratory test/services sought at the appropriate levels/facility	%Increase in appropriate use of laboratory services at appropriate levels				X	X	X	Head of lab services (Acting) LMIS coordinator M&E coordinator Technical Advisor	MOH clinical departments MOH UNMHCP guidelines National Health Laboratory Policy HSSP I, II and III MOH budget (Laboratory Services) Partner support

**4.3 Facilities and Safety: All laboratory facilities shall have appropriate space and safe environment for personnel, patients and community**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year				Responsibility Centers	Resources
1. Implement National safety and infrastructure standards and guidelines for all levels of laboratory services.	1. Establish a position for a Laboratory biosafety/biosecurity officer at MoH.	1. Define roles and responsibilities for a National Laboratory Biosafety/Biosafety officer 2. Recruit and deploy national Biosafety/Biosecurity officer	National laboratory Biosafety/Biosecurity officer appointed and deployed by year 2	1. % of Facilities with appropriate space and safe environment for personnel, patients and community 2. % of laboratory biosafety personnel in place 3. % of facilities and personnel that comply with set safety standards (including safe waste disposal facilities) 4. % reduction in work-related injuries in the laboratory	X	X	X	X	Head of Lab Services (Acting) LTC Chair Technical Advisor	
	2. Constitute a national laboratory biosafety/biosecurity committee	1. Develop TOR, appoint and capacitate a national biosafety/biosecurity subcommittee.	1. Functional Biosafety/Biosecurity committee in place by year 2		X	X	X	X	Head of Lab Services (Acting) LTC Chair Technical Advisor	National Health Laboratory Policy MOH budget (Laboratory Services) National health laboratories Policy HSSPs I, II and III National Health policy Partners

**4.3 Facilities and Safety: All laboratory facilities shall have appropriate space and safe environment for personnel, patients and community**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year				Responsibility Centers	Resources	
	3. Review and disseminate biosafety/ biosecurity guidelines	1. Develop and disseminate safety guidelines for all levels. 2. Train and sensitize laboratory personnel in biosafety and biosecurity.	Guidelines reviewed and disseminated by year 3				X	X	X	Biosafety/Bio security officer Head of lab services (Acting) Technical Advisor	WHO templates National Health Laboratory policy MOH budget (Laboratory Services) Partners
	4. Construct/renovate /refurbish and maintain laboratories in conformity with national infrastructure standards and guidelines.	1. Review and implement laboratory infrastructure standards 2. Conduct a national laboratory infrastructure assessment to identify gaps 3. Develop a national Infrastructure plan to correct the identified disparities	40% of laboratories conforming to infrastructure Standards by year 5.	% of laboratories that conform to national infrastructure guidelines and standards		X	X	X	X	Biosafety/Bio security officer Head of lab services (Acting) Technical Advisor	MOH Infrastructure Department LTC Subcommittee for Infrastructure MOH budget (laboratory services) Head of laboratory network Existing architectural plans Partners

**4.3 Facilities and Safety: All laboratory facilities shall have appropriate space and safe environment for personnel, patients and community**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year				Responsibility Centers	Resources
2. Safeguard against malicious use of chemicals, infectious agents and other harmful materials	1. Develop a national biosecurity plan to guide the handling of potentially harmful laboratory agents	1. Develop, disseminate and implement national standards and guidelines for biosecurity. 2. Conduct regular biosecurity audits in all laboratories in accordance with the guidelines 3. Develop and disseminate a national list of dangerous chemicals, infectious agents and other dangerous materials to facilities and personnel 4. Maintain inventory system to account for such identified items	1. National standards and guidelines for biosecurity developed and disseminated to all laboratory units by year 2 2. Inventory for dangerous chemicals, infectious agents and harmful materials developed year 2. 3. All laboratories compliant with list of dangerous materials by year 2	1. Regulations in place for access to chemicals, infectious and other harmful agents. 2. % of facilities enforcing the regulations to restrict access to chemicals, infectious and other harmful agents 3. % reduction of occurrences/incidences that involve malicious use of chemicals, infectious and other harmful agents.	X	X	X	X	Biosafety/Biosecurity officer Head of lab services (Acting) Technical Advisor	MOH legal department LTC Subcommittee for Infrastructure Allied Professionals council MOH budget (laboratory Services) Heads of laboratory network National Environment Management Agency (NEMA) National Drug Authority (NDA) Partners PPFDA policy
	2. Regulate storage and access to and usage of chemicals, infectious agents and other harmful materials that have potential for malicious use.	Review legal framework for regulation of handling chemicals, infectious agents and other harmful materials that have potential for malicious use	1. Effective regulatory mechanisms for chemicals, infectious agents and other harmful materials that have potential for malicious use in place by year 3. 2. 100% of facilities enforcing the regulations to restrict access to chemicals, infectious and other harmful agents	% reduction in malicious usage of chemicals, infectious agents and other harmful materials		X	X	X	Biosafety/Biosecurity officer Head of lab services (Acting) Technical Advisor	Existing Parliamentary Act MOH legal department LTC Subcommittee for Infrastructure Allied Professionals council NEMA NDA PPFDA MOH budget (laboratory Services) Heads of laboratory network Partners

**4.4 Equipment and Supplies: All laboratories shall have appropriate functional equipment and adequate supplies to support uninterrupted delivery of the UNMHCP**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year	Responsibility Centers	Resources
1.Establish a national logistics coordination office at MOH	1.Establish a position for national laboratory logistics coordinator at MOH	1.Define roles and responsibilities of the Laboratory logistics coordinator at MOH 2.Recrut and deploy Laboratory logistics coordinator	1.Position established and functional by year 2	1. % reduction in stock out of vital laboratory supplies in all laboratories by year 5 2. % of facilities whose Procurement processes are completed on time 3. % facilities receiving supplies within the stipulated lead time	X X X X	Head of Lab Services (Acting) LTC Chair Technical Advisor	Ministry of Public Services Health services commission MOH Human Resource and Development dept Ministry of Finance Ministry of Local Government District Public Services Commission MOH budget (laboratory services). MOH restructuring policy National health laboratories Policy HSSPs I, II and III National Health policy Partners
	2.Establish positions of lab logistics technical advisors at NMS, JMS and NDA to work/collaborate with the coordinator at MOH 3.Strengthen collaborative mechanisms between the MOH unit, the supply centers and the recipient centers	1. Define roles and responsibilities of the laboratory logistics technical advisors 2.Recrut and deploy officers to the relevant positions 3.Designate and facilitate district laboratory focal persons to coordinate logistics activities within the district.	1.3 positions established and functional by year 2	4. % of laboratories whose supplies and commodities budget is based on accurate quantification 5.% improvement in storage capacity (space and safety) at all levels	X X X X	Head of Lab Services ( Acting) Logistics coordinator LTC Chair Technical Advisor	Ministry of Public Services Health services commission MOH Human Resource and Development dept Ministry of Finance National Medical Stores Joint Medial Stores National drug Authority MOH budget (laboratory services). MOH restructuring policy National health laboratories Policy HSSPs I, II and III National Health policy Partner

4.4 Equipment and Supplies: All laboratories shall have appropriate functional equipment and adequate supplies to support uninterrupted delivery of the UNMHCP												
Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year					Responsibility Centers	Resources	
	3.Strengthen the national logistics and supplies subcommittee of LTC	1. Review TOR for LTC sub committee to strengthen advisory roles.	1.Functional, effective, representative subcommittee in place by year 1			X	X	X	X	X	LTC Chair Head of lab services (Acting) Technical Advisor	Office of the Director General MOH budget (laboratory services). Existing TOR
	4. Integrate the laboratory logistics system into the overall health supply system	1. Review of existing lab logistics systems and identify gaps 2. Development of new guidelines for operation of lab logistics management system(LMIS) 3.Training and mentoring in logistics / inventory management for all lab personnel	1.Laboratory logistics system integrated into health supply system by year 3					X	X	X	Logistic coordinator HRD coordinator Head of lab services (Acting) Technical Advisor	MOH procurement Department MOH Pharmacy Department MOH HRD department LTC Sub committee for equipment and supplies MOH budget (laboratory services) Heads of the laboratory network Existing systems Partners
	5.Implement effective information sharing strategies between supply chain stakeholders to promote timely and affective flow of supplies across the network	1.Determine information to be shared 2.Define and implement media for information sharing	1.Information sharing strategies in place by year 2			X	X	X	X		Logistic coordinator LMIS coordinator M&E coordinator Head of lab services (Acting) Technical Advisor	MOH editorial body MOH procurement Department MOH Pharmacy Department LTC Sub committee for equipment and supplies MOH budget (laboratory services) Partners

**4.4 Equipment and Supplies: All laboratories shall have appropriate functional equipment and adequate supplies to support uninterrupted delivery of the UNMHCP**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year	Responsibility Centers	Resources
2. Develop and implement the National Procurement and Supply Management Plan to strengthen laboratory supply chain system	1. Have accurate national quantification for reagents, supplies and commodities needed for the different levels of laboratory facilities	1. Constitute a quantification team at what level? 2. Develop/adopt forecasting tools 3. Strengthen data management system 4. Train quantification team 5. Prepare annual quantification and procurement plan for supplies for all laboratories	1. National quantification done by year 2 and reviewed every 6 months.		X X X X	Logistic coordinator Head of lab services (Acting) Technical Advisor	MOH procurement Department MOH Pharmacy Department LTC Sub committee for equipment and supplies MOH budget (laboratory services) Heads of laboratory network Partners
	2. Develop guidelines and procedures for procurement of laboratory supplies including those received through donations.	1. Develop list of lab supplies and their specifications 2. Develop guidelines for reagent reconstitutions in the country.	1. Guidelines and Procedures developed and disseminated by year 2			Logistic coordinator Head of lab services (Acting) Technical Advisor	MOH procurement Department MOH Pharmacy Department LTC Sub committee for equipment and supplies MOH budget (laboratory services) Key Stakeholders Heads of laboratory network Partners
	3. Establish National Monitoring and Evaluation system to continuously monitor the progress of supply chain management implementation	1. Define M & E indicators for Supply chain management and designate responsibility to the relevant parties 2. Develop/provide regular M&E reports to inform improvement strategies	1. Supply chain M&E indicators developed and submitted by year 1		X X X X	Logistic coordinator M&E coordinator Head of lab services (Acting) Partners	MOH procurement Department MOH Pharmacy Department LTC Subcommittee for equipment and supplies MOH budget (laboratory services) Heads of laboratory network Partners

**4.4 Equipment and Supplies: All laboratories shall have appropriate functional equipment and adequate supplies to support uninterrupted delivery of the UNMHCP**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year	Responsibility Centers	Resources
3.Strengthen warehousing, distribution and storage of lab logistics and supplies	1.Increase the storage and distribution capacity at all levels in terms of space, safety and security	1. Work with relevant local government authorities to Advocate for increased storage space at the district and facilities 2. Procure cold storage equipment for lab supplies 3. Develop guidelines for proper storage at the district and facility level 4. Review and standardize the recording and inventory systems for lab commodities	1.Storage and distribution capacity increased at all levels by years 5 (40% of laboratories meeting their storage needs by year 5)		X X X X	Logistic coordinator Biosafety and Biosecurity Officer Head of lab services (Acting) Technical Advisor	MOH Infrastructure dept MOH Pharmacy Department LTC Sub committees Equipment and supplies and Infrastructure MOH budget (laboratory services) National Medical Stores Joint Medial Stores National drug Authority Partners
	2. Develop an effective system for safe disposal of expired and damaged supplies and equipment for both public and private sector health laboratories.	1. Conduct a baseline assessment of expired supplies and obsolete equipments at all levels. 2. Develop and disseminate guidelines for disposal of such supplies 3. Implement disposal according to guidelines	1. Effective disposal system in place by year 3.	1.% reduction in expired equipment, supplies and commodities at Facility level	X	Logistic coordinator Head of lab services (Acting) Technical Advisor	MOH Infrastructure dept MOH Pharmacy Department Parliamentary acts PPPDA policy LTC Sub committee Equipment and supplies National Medical Stores Joint Medial Stores National Drug Authority MOH budget ( laboratory Services) Partners

**4.4 Equipment and Supplies: All laboratories shall have appropriate functional equipment and adequate supplies to support uninterrupted delivery of the UNMHCP**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year				Responsibility Centers	Resources	
4. Develop and implement the National Laboratory Equipment management/maintenance plan	1. Establish/designate a position for national laboratory equipment engineer at MOH	1. Define roles and responsibilities of the Laboratory Biomedical Engineer 2. Recruit and deploy Laboratory biomedical engineer 3. Train who? in laboratory biomedical engineering. 4. Recruit/designate biomedical laboratory equipment engineering officer at regional workshops	1. Positions established and functional by year 2.	1. % reduction in service provision interruption attributable to malfunctioning equipment		X	X	X	X	Head of Lab Services (Acting) LTC Chair Technical Advisor	Ministry of Public Services Health services commission MOH HRD dept Ministry of Finance MOH budget (laboratory services). MOH restructuring policy National health laboratories Policy HSSPs I, II and III National Health policy Partners
	2. Develop standards and policy guidelines for procurement, placement and management of laboratory equipment at all levels	1. Develop standards and policy guidelines for equipment procurement, placement and disposal. 2. Develop guidelines for equipment maintenance and disseminate them to facilities	1. Standards and guidelines developed and disseminated by year 2			X				Biomedical engineer Logistic coordinator Head of lab services (Acting) Technical Advisor	MOH Infrastructure dept MOH Pharmacy Department LTC Sub committees Equipment and supplies and Infrastructure MOH budget (laboratory services) National Medical Stores Joint Medical Stores National drug Authority Heads of laboratory network Partners

**4.4 Equipment and Supplies: All laboratories shall have appropriate functional equipment and adequate supplies to support uninterrupted delivery of the UNMHCP**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year					Responsibility Centers	Resources
	3. Strengthen National and Regional Equipment Maintenance Workshops in collaboration with the infrastructure division	1. Conduct a needs assessment to establish gaps 2. Conduct regular regional equipment maintenance workshops 3. Train laboratory in-charges/practitioners in the basic/routine maintenance of laboratory equipment	1. Defined and effective program for national and regional equipment maintenance workshops implemented annually, starting by year 2		X	X	X	X	X	Biomedical engineer Logistic coordinator Head of lab services(Acting) Technical Advisor	MOH Infrastructure dept MOH Pharmacy Department LTC Sub committees equipment, supplies and Infrastructure MOH budget (laboratory services) National Medical Stores Joint Medial Stores National drug Authority Heads labs Partners

**4.5 Human Resources: The laboratory services shall have an adequate number of skilled staff with the necessary competency and motivation to deliver quality lab services at all designated levels.**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year					Responsibility Centers	Resources
1. Strengthen coordination of laboratory human resources.	1. Establish a position for Laboratory Human Resource and Development (HRD) coordinator in liaison with the HR division in MOH	1. Define roles and responsibilities of HRD position 2. Recruit and deploy HRD Coordinator	1. HRD coordinator in place by year 1	1. Laboratory sector Human Resource activities coordinated centrally 2. Increased collaboration between stakeholders in conducting HRD activities/reduced duplication of such activities	X	X	X	X	X	Head of Lab Services (Acting) LTC Chair Technical Advisor	Ministry of Public Services Health services commission MOH HRD dept Ministry of Finance MOH budget (laboratory services). MOH restructuring policy National health laboratories Policy HSSPs I, II and III National Health policy Partners
2. Develop and implement HRD Master plan to recruit, deploy and retain staff to adequately provide laboratory services in the country	1. Update the scheme of service to reflect current job requirements by qualifications	1. Review scheme of service for all laboratory professionals 2. Liaise with public service commission for implementation of the recommended plan	1. Schemes of service updated and implemented by year 2	1. % of laboratories meeting staffing norms according to the updated scheme of service 2. % reduction in staff attrition due to resignation 3. % number of needed/recommended positions filled 4. Level of reduction in turnaround times for tests 5. Level of reduction of crowding at facilities		X	X	X	X	Head of Lab Services (Acting) HRD coordinator LTC Chair Technical Advisor	Ministry of Public Services Health services commission MOH HRD dept Ministry of Finance Ministry of Local government District Public Services Commission MOH budget (laboratory services). MOH restructuring policy National health laboratories Policy HSSPs I, II and III National Health policy Partners

**4.5 Human Resources: The laboratory services shall have an adequate number of skilled staff with the necessary competency and motivation to deliver quality lab services at all designated levels.**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year				Responsibility Centers	Resources
	2. Update the laboratory staffing norms to meet current needs at the different levels	1. Conduct assessment of current staffing needs 2. Conduct a job and task analysis according to revised scheme of service 3. Revise job descriptions and make appropriate recommendations for the different positions in laboratory practice 4. Recruit/deploy/upgrade/retrain lab practitioners according to revised scheme of service and staffing norms.	1. Staffing needs assessment completed by year 1 2. 50% of labs/facilities meeting the staffing norm for their level by year 5				X			Head of Lab Services (Acting) HRD coordinator LTC Chair Technical Advisor Ministry of Public Services Health services commission MOH HRD dept Ministry of Finance Ministry of Local government District Public Services Commission MOH budget (laboratory services). MOH restructuring policy National Health Laboratories Policy HSSPs I, II and III National Health policy Partners
	3. Develop and implement Continuous Professional Development plan for laboratory professionals	1. Develop guidelines and regulatory requirements for CPD 2. Conduct a CPD TNA 3. Develop and roll-out training packages in critical areas identified by the TNA for CPD program to include distance learning, attachments, short courses, seminars and publications, leadership and management 4. Implement annual staff performance evaluations and performance based incentive scheme 5. Develop work development plan for lab staff 4. Monitor and evaluate CPD program and continually implement improvements	1. CPD Plan in place by year 2			X	X	X	X	HRD coordinator Head of Lab Services (Acting) LTC Chair Technical Advisor Ministry of Public Services Health services commission MOH Human Resource and Development dept Ministry of Finance Ministry of Local government District Public Health Services Commission MOH budget (laboratory services). National health laboratories Policy HSSPs I, II and III National Health policy Partners

**4.5 Human Resources: The laboratory services shall have an adequate number of skilled staff with the necessary competency and motivation to deliver quality lab services at all designated levels.**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year					Responsibility Centers	Resources	
	4. Establish incentives for staff in hard-to-work in areas	1. Define and provide incentives for staff in hard-to-work in areas	1. Staff for Services provision for hard to work areas in place by year 5	1. Number of people trained according to the scheme of service and meeting staffing norms.		X	X	X	X	X	HRD coordinator Head of Lab Services (Acting) LTC Chair Technical Advisor	Ministry of Public Services Health services commission MOH Human Resource and Development dept Ministry of Finance Ministry of Local government District Public Services Commission MOH budget (laboratory services). MOH restructuring policy National health laboratories Policy HSSPs I, II and III National Health policy Partners
	5. Develop and implement 5 year training plan	1. Identify areas for training through a consensus process	1. Training plan developed by year 1 and implemented by year 5				X	X	X	X	HRD coordinator Respective coordinators Head of Lab Services (Acting) LTC Chair Technical Advisor	MOH clinical departments MOH HRD department Ministry of Education Training institutions MOH budget (laboratory services) Heads of laboratory network Partners
	1. Identify and fill gaps between pre-service training output and requirement	1. Perform needs assessment of pre-service training output 2. Work with Modes and training schools to fill the gaps 3. Advocate for enhanced training of high cadre practitioners such as pathologists and microbiologists	1. National annual pre-service output established by year 1	1. % of graduates that have met training requirements for service provision			X	X	X	X	HRD coordinator Respective coordinators Head of Lab Services (Acting) LTC Chair Technical Advisor	MOH clinical departments MOH HRD department Ministry of Local Government Ministry of Finance Ministry of Education Training institutions MOH budget (laboratory services) Heads of laboratory network Partners

**4.5 Human Resources: The laboratory services shall have an adequate number of skilled staff with the necessary competency and motivation to deliver quality lab services at all designated levels.**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year					Responsibility Centers	Resources
3. Strengthen pre-service training of laboratory professionals to meet national Health laboratory service requirements	2. Review curricula for all levels of health laboratory training	1. Conduct a needs assessment to identify gaps in the curriculum 2. Review and approve curricula for all levels in collaboration with MOES and training institutions. 3. Advocacy for in country training in higher degree programs in laboratory disciplines	1. Health laboratory training curricula reviewed and harmonized by year 5	1. % laboratory personnel meeting competence assessment requirements	X	X	X	X	X	HRD coordinator Respective coordinators Head of Lab Services ( Acting) LTC Chair Technical Advisor	MOH clinical departments MOH HRD department Ministry of Local Government Ministry of Finance Ministry of Education Training institutions MOH budget (laboratory services) Heads of laboratory network Partners
	1. Identify and fill gaps for internship and in-service training	1. Conduct a comprehensive internship and in-service training needs assessment 2. Develop internship and in-service training program 3. Provide technical support personnel for internship and in-service training.	1. All testing personnel meeting competence assessment requirements by year 3						X		
4. Build competence of laboratory personnel through internship and in-service training											

**4.6 QUALITY MANAGEMENT SYSTEM: There shall be a National Laboratory Quality Management System in Place to Ensure Accurate, Effective and Safe Service Delivery**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year					Responsibility Centers	Resources
1. Strengthen coordination of laboratory quality assurance activities	1. Establish a position for a Laboratory Quality Assurance Coordinator at MoH.	1. Define roles and responsibilities for a National Laboratory Quality Assurance(QA) Coordinator 2. Recruit/appoint the QA coordinator	1. Quality Assurance coordinator in place by year 1	1. % laboratories certified and accredited by international and national agencies annually 2. % laboratories that are successfully participating in EQA schemes annually	X	X	X	X	X	Head of Lab Services ( Acting) LTC Chair Technical Advisor	Ministry of Public Services Health services commission MOH Human Resource and Development dept Ministry of Finance MOH budget (laboratory services) MOH restructuring policy National health laboratories Policy HSSPs I, II and III National Health policy Partners
2. Establish national framework for the Implementation of Laboratory Quality Management System	1. Establish laboratory quality management system implementation structures for all levels	1. Define roles and responsibilities of regional, district and health facility Quality Assurance officers 2. Designate QA officers at all levels 3. Establish Quality Assurance working committees at the regional, district and health facilities	1. Quality Assurance national Framework established by year 1			X	X	X	X	Head of Lab Services (Acting) Quality Assurance Coordinator LTC Chair Technical Advisor	Ministry of Public Services Health services commission MOH Human Resource and Development dept Ministry of Finance Ministry of Local Government District Public Health Services Commission MOH budget (laboratory services). MOH restructuring policy National health laboratories Policy HSSPs I, II and III National Health policy Partners

**4.6 QUALITY MANAGEMENT SYSTEM: There shall be a National Laboratory Quality Management System in Place to Ensure Accurate, Effective and Safe Service Delivery**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year					Responsibility Centers	Resources	
3. Develop and Implement a National Quality Assurance Master Plan	1. Develop and disseminate National Quality Assurance Master Plan and the supporting documents	1. Finalize and distribute the Quality Assurance Master Plan to stakeholders 2. Develop and distribute the quality manual/guidelines and laboratory standards 3. Develop/review and distribute SOPs for laboratory procedures	1. Quality Master Plan developed by year 1 2. National standards developed and disseminated by year 1			X	X	X	X	X	QA coordinator Head of lab services (Acting) LTC Chair Technical Advisor	MOH HIV QA program Uganda Bureau of Standards Ministry of Internal Affairs and Tourism International Accreditation bodies LTC Subcommittee for QA MOH budget (laboratory services) Heads of laboratory network Partners
	2. Develop and Implement Internal Quality Assurance system at all levels	1. Develop and disseminate IQA guidelines 2. Build capacity of health facility on IQA 3. Conduct routine quality audits and supervision at all levels 4. Develop and distribute health facility Internal Quality Control tools 4. Distribute IQA tools and instruments	1. National IQA system developed by year 1 and implemented by 3				X				QA coordinator Head of lab services (Acting) LTC Chair Technical Advisor	MOH HIV QA program Uganda Bureau of Standards Ministry of Internal Affairs and Tourism District Health Officers District Laboratory Focal Persons International Accreditation bodies LTC Subcommittee for QA MOH budget (laboratory services) Heads of laboratory network Partners

**4.6 QUALITY MANAGEMENT SYSTEM: There shall be a National Laboratory Quality Management System in Place to Ensure Accurate, Effective and Safe Service Delivery**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year				Responsibility Centers	Resources		
	3. Standardize, expand and coordinate the National External Quality Assessment Schemes	1. Harmonize and expand Uganda NEQAS 2. Build capacity for production, distribution and evaluation of EQA materials 3. Develop a plan for corrective actions and continuous process improvement at all levels	1. Expand EQA to include set critical tests by year 1			X				QA coordinator Head of lab services (Acting) LTC Chair Technical Advisor	MOH HIV QA program Uganda Bureau of Standards Ministry of Internal Affairs and Tourism District Health Officers District Laboratory Focal Persons International Accreditation bodies LTC Sub committee for QA MOH budget (laboratory services) Heads of laboratory network Partners	
	4. Develop and implement national plan towards accreditation	1. Constitute a National Certification/accreditation Body 2. Sensitize key stakeholders and communities on accreditation 3. Develop National standards 4. Build human resources capacity for accreditation 5. Pilot, evaluate and rollout accreditation plan	1. National certification and accreditation system established by year 3				X	X	X	X	QA coordinator Head of lab services (Acting) LTC Chair Technical Advisor	MOH HIV QA program Uganda Bureau of Standards Ministry of Internal Affairs and Tourism District Health Officers District Laboratory Focal Persons International Accreditation bodies LTC Sub committee for QA MOH budget (laboratory services) Heads of laboratory network Partners
	5. Establish National Monitoring and Evaluation system for quality management implementation	1. Develop Quality Management System indicators 2. Submit indicators to the M & E unit in the department for laboratory services	1. QA M&E indicators established by year 1					X	X	X	QA coordinator M&E coordinator Head of lab services (Acting) LTC Chair Technical Advisor	MOH clinical departments National standards MOH UNMHCP guidelines District Health Officers District Laboratory Focal Persons LTC Sub committee for QA MOH budget (laboratory services) Heads of laboratory network Partners

**4.7 INFORMATION SYSTEMS: Laboratory information systems shall be established and strengthened to promote laboratory performance, quality patient care, surveillance, evidence-based planning, policy formulation and research**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year					Responsible Centers	Resources
1. Strengthen the management and utilization of laboratory information systems	1. Establish a position for a Laboratory information systems Coordinator at MOH/Resource center	1. Define roles and responsibilities of the LMIS Officer / Manager at MOH Resource Center. 2. Recruit and deploy LMIS Officer	1. LMIS coordinator in place by year 1	% of laboratories providing comprehensive, accurate and timely reports	X	X	X	X	X	Head of Lab Services (Acting) LTC Chair Technical Advisor	Ministry of Public Services Ministry of Finance Health services commission MOH HRD dept MOH Resource Center MOH budget (laboratory services) MOH restructuring policy National health laboratories Policy HSSPs I, II and III National Health policy Partners
2. Establish national framework for the Implementation of Laboratory Information Management System	1. Establish LMIS implementation and coordination structures at all levels to include private laboratories	1. Define positions and job descriptions for LMIS officers at regional, district and facility level 2. Designate LMIS officers 3. Constitute a national LMIS technical subcommittee 4. Advocacy meetings with district leadership to promote information sharing and collaboration for laboratory development	1. LMIS national Framework established by year 1			X	X	X	X	Head of Lab Services (Acting) LTC Chair Technical Advisor	Ministry of Public Services Ministry of Finance Health services commission Ministry of Local Government District Public Services Commission MOH HRD dept MOH Resource Center Ministry of Local Government MOH budget (laboratory services) MOH restructuring policy National health laboratories Policy HSSPs I, II and III National Health policy Partners

**4.7 INFORMATION SYSTEMS: Laboratory information systems shall be established and strengthened to promote laboratory performance, quality patient care, surveillance, evidence-based planning, policy formulation and research**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year					Responsibility Centers	Resources	
	2. Develop and Implement LMIS Master Plan	1. Determine data requirements of the laboratory system. 2. Review, develop and implement manuals for laboratory data tools and procedures. 3. Procure and install laboratory e-LMIS 4. Develop, pilot, train and rollout of e-LMIS. 5. Establish a laboratory e-database/data warehouse for sharing information across the laboratory network. 6. Improve and Implement the paper-based data collection tools 7. Conduct Quarterly M&E data verification.	1. LMIS Master Plan developed by year 1 and implemented by year 5			X	X	X	X	X	LMIS coordinator Respective coordinators Head of lab services (Acting) LTC Chair Technical Advisor	MOH Resource Center LTC Sub committee for Equipment and Supplies MOH UNMHCP guidelines MOH budget (laboratory services) Heads of laboratory network Partners
	3. Develop and disseminate information management guidelines to ensure confidentiality and data archiving	1. Review and distribute Laboratory Standards and guidelines on LMIS.	1. Guidelines developed and disseminated, and the relevant practitioners trained in their implementation by year 1				X	X			LMIS coordinator Respective coordinators Head of lab services (Acting) LTC Chair Technical Advisor	MOH Resource Center LTC Sub committee for Equipment and Supplies MOH budget (laboratory services) Heads of laboratory network Partners

**4.7 INFORMATION SYSTEMS: Laboratory information systems shall be established and strengthened to promote laboratory performance, quality patient care, surveillance, evidence-based planning, policy formulation and research**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year				Responsibility Centers	Resources	
	4. Develop bulletin for advocacy and dissemination of lab information in the country	1. Establish editorial board in collaboration with MOH 2. Regularly produce and disseminate the bulletin	Laboratory information disseminated by year 2			X	X	X	X	LMIS coordinator Respective coordinators Head of lab services (Acting) LTC Chair Technical Advisor	MOH clinical departments MOH Resource Center MOH editorial board LTC Subcommittee for Equipment and Supplies MOH budget (laboratory services) Heads of laboratory network Partners

Working Draft

**4.8 RESEARCH AND DEVELOPMENT: Laboratories shall be encouraged to participate in relevant health research to improve patient management, laboratory performance and disease control.**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year				Responsibility Centers	Resources	
1. Develop and implement a National Research Agenda for Laboratory services	1. Identify priority areas for research	1. Identify stakeholders and create a research agenda 2. Utilize available data to inform policy and programs 3. Identify areas of research relevant to disease management e.g. reference values studies.	1. Research agenda developed and priority research areas set by year 1	1. % of health care interventions based on laboratory generated research. 2. Number of Publications from the laboratory sector 3. Number of laboratory personnel actively involved in research activities		X	X	X	X	Head of Lab Services (Acting) LTC chair Technical Advisor	MOH clinical departments Office of the Director General for Health Services Existing parliamentary Acts National Health Laboratory policy Respective boards of directors IRBs Uganda council of Science and Research MOH budget (Laboratory Services) Partner

**4.8 RESEARCH AND DEVELOPMENT: Laboratories shall be encouraged to participate in relevant health research to improve patient management, laboratory performance and disease control.**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year				Responsibility Centers	Resources	
	2. Plan and implement the research agenda	1. Mobilize funds for implementation of Research activities	1. Fund set up by year 2			X	X	X	X	Head of Lab Services (Acting) LTC chair Technical Advisor	MOH clinical departments Office of the Director General for Health Services Existing parliamentary Acts National Health Laboratory policy Respective boards of directors IRBs Uganda council of Science and Research MOH budget (Laboratory Services) Partner
	3. Train laboratory personnel in research methodology	1. Conduct needs assessment 2. Train laboratory personnel in research methodology	1. Fellowships / attachments/ internships in research activities available by year 2 2. Annual Research methodology workshops for laboratory personnel.			X	X	X	X	HRD coordinator Head of Lab Services (Acting) LTC chair Technical Advisor	MOH clinical departments MHO HRD department Ministry of Local Government Ministry of Education Training institutions Specialized laboratories MOH budget (laboratory services) Heads of laboratory network Partners

**4.8 RESEARCH AND DEVELOPMENT: Laboratories shall be encouraged to participate in relevant health research to improve patient management, laboratory performance and disease control.**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year				Responsibility Centers	Resources	
	4. Develop guidelines for the utilization of health laboratories and their personnel for research activities	1. Develop MOU/TOR template and guidelines to govern relationship between the research institutions and the laboratory 2. Disseminate the national guidelines for research to all relevant stakeholders 3. Network laboratories to promote collaboration of lab personnel in research activities.	1. Research guidelines developed by year 1			X				Head of Lab Services (Acting) LTC chair Technical Advisor	MOH clinical departments Office of the Director General for Health Services Existing parliamentary Acts National Health Laboratory policy Respective boards of directors for specialized laboratories IRBs Uganda council of Science and Research MOH budget (Laboratory Services) Partner
	5. Disseminate research findings to the relevant target groups, including the general public	1. Identify mechanisms for dissemination and disseminate published laboratory research information to target groups	1. Mechanisms for dissemination of research findings in place by year 1			X	X	X	X	LMIS coordinator Head of Lab Services (Acting) LTC chair Technical Advisor	MOH clinical departments MOH Resource Center MOH editorial board LTC Subcommittee for Equipment and Supplies MOH budget (laboratory services) Heads of laboratory network Partners
	6. Evaluate and standardize imported reagents and equipment meant for research to the Uganda situation	1. Develop guidelines on new kits/equipment evaluation 2. Evaluate kits/equipment before use 3. Publish findings from the evaluation	1. Guidelines developed by year 1	1. % of incoming kits and equipment evaluated		X	X	X	X	Head of Lab Services (Acting) LTC chair Technical Advisor	MOH clinical departments Office of the Director General for Health Services Existing parliamentary Acts National Health Laboratory policy Respective boards of directors for specialized laboratories IRBs Uganda council of Science and Research MOH budget (Laboratory Services) Partner

**4.9 Community: Laboratory services shall be an integral part of the health services responsiveness to the community needs and shall adhere to ethical standards**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year				Responsibility Centers	Resources	
1. Strengthen ethical customer centered practices to facilitate treatment of patients with respect, and to safeguard confidentiality and privacy	1. Establish and/or strengthen existing IEC strategies to inform the communities about their role and rights, and appropriate use of laboratory services	1.Develop national guidelines and IEC materials for community sensitization and advocacy on the role of laboratory services in disease control, prevention and management 2.Conduct sensitization and advocacy meetings/talks on the roles and the importance of laboratory services 3.Sensitize communities about their rights to health care; and where, when and how to seek these services 4. Conduct regular patient/client surveys on their perception of different aspects of lab services	1.IEC strategies developed and implemented by year 2	1. Level of awareness on appropriate use of laboratory services in the community 2. % increase in appropriate requests for lab services by clients/clinicians		X	X	X	X	LMIS coordinator Respective coordinators Head of lab services (Acting) LTC Chair Technical Advisor	MOH clinical departments MOH Resource Center MOH editorial board LTC Subcommittee for Equipment and Supplies MOH budget (laboratory services) Heads of laboratory network Partners
	2.Develop and Implement guidelines for patient confidentiality and privacy	1. Advocate for adequate facilities in the laboratory to ensure the privacy of patients. 2. Promote adherence to ethical and professional conduct 3.Train laboratory health workers in communicating laboratory based information.	1.Guidelines developed by year 1 and implemented by year 2	1.Level of confidence in use of laboratory services in the community 2.% of facilities with private space for sample collection		X	X	X	X	QA coordinator Respective coordinators Head of lab services (Acting) LTC Chair Technical Advisor	MOH clinical departments MOH Resource Center MOH editorial board LTC Sub committee for Equipment and Supplies MOH budget (laboratory services) Heads of laboratory network Partners

**4.10 Partnerships: Networking between public and private laboratories shall be promoted to improve access and equity of laboratory services.**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year					Responsibility Centers	Resources
1. Establish a framework that will enhance collaboration and coordination of partner activities in the laboratory sector	1. Create forum (Health laboratory services development partners committee) for communication, advocacy and planning with internal, external, inter-sectorial and ministerial partners 2. Develop MOH guidelines and criteria for partner activity in different areas of the laboratory sector	1. Develop terms of reference for the committee 2. Constitute the committee 3. Develop framework that will enhance routine sharing of information on ongoing activities and plans	1. Committee in place by year 1 2. Laboratory Partners' forum and communication framework in place by year 1	1. % partner activities fitting within the national laboratory strategic plan	X	X				Head of Lab Services (Acting) LTC chair Technical advisor	MOH clinical departments PPPH policy UNMHCP guidelines National Health Laboratory Policy MOH budget (Laboratory Services) Ministry of Local government Partner support
2. Increase efficiencies through outsourcing specific laboratory services	1. Identify areas of laboratory services to outsource to private sector 2. Establish mechanism for referral of laboratory tests from the private sector to the relevant public sector/facilities where needed.	1. Identify and vet and keep database of service providers working within government guidelines, to which services can be outsourced 2. Provide the needed technical assistance to identified vendors	1. Appropriate laboratory services outsourced by year 2	1. Improvement in efficiencies of laboratory service delivery in public and private sectors	X	X	X	X	X	Head of Lab Services (Acting) LTC chair Technical advisor	MOH clinical departments PPPH policy UNMHCP guidelines National Health Laboratory Policy MOH budget (Laboratory Services) Ministry of Local government Partner support

**4.11 REGULATORY AND LEGAL FRAMEWORK: National legal and regulatory framework components shall be streamlined and strengthened to enforce licensing, registration and control of all health laboratory services.**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year				Responsibility Centers	Resources
1.Strengthen the Allied Health Professionals Council	1.Establish position of laboratory liaison in the council	1. Define roles and responsibilities for Laboratory liaison 2.Recrut/appoint and deploy the Laboratory liaison	1.Laboratory liaison in place by year 2	1.% of health laboratories registered and licensed 2.% of practicing laboratory personnel registered 3.% of facilities that undergo annual inspection 4.% of facilities that conform to practice requirements 5.Extent of practice fees collected annually 6.Extent of corrective measures taken where discrepancies are found		X	X	X	X	Head of Lab Services (Acting) LTC chair Technical Advisor Ministry of Public Services Health Services Commission MOH Human Resource and Development dept MOH budget (laboratory services) MOH restructuring policy National Health Laboratories Policy HSSPs I, II and III National Health policy Partners
	2.Mobilize funds to support the AHPC activities	1. Conduct Advocacy activities for increased funding 2.Build on Public-Private partnerships to increase funding. 3.Develop and implement plan for effective collection of the relevant fees from facilities and practitioners	1.Adequate funding available for APHC by year 3				X	X	X	Head of Lab Services (Acting) LTC chair Technical Advisor Ministry of Finance MOH budget (laboratory services) National Health Laboratories Policy HSSPs I, II and III National Health policy Partners

**4.11 REGULATORY AND LEGAL FRAMEWORK: National legal and regulatory framework components shall be streamlined and strengthened to enforce licensing, registration and control of all health laboratory services.**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year				Responsibility Centers	Resources	
	3. Coordinate activities of the AHPC in the districts	1. Designate and deploy focal persons at districts to liaise with AHPC on implementing the relevant codes of practice	1. District focal persons in place in all districts by year 2.			X	X	X	X	Laboratory Liaison Head of Lab Services (Acting) LTC chair Technical Advisor	Ministry of Public Services Health services commission MOH HRD dept Ministry of Finance Ministry of Local Government District Public Services Commission MOH budget (laboratory services) MOH restructuring policy National health laboratories Policy HSSPs I, II and III National Health policy Partners
2. Strengthen ethics and professionalism among laboratory professionals	1. Strengthen laboratory professional associations	1. Customize the International Federation of Biomedical Laboratory Science (IFBLS) code of ethics to Uganda 2. Widely disseminate code of ethics to laboratory practitioners 3. Advocate for inclusion of the oath of allegiance to the profession at graduation	1. Uganda specific code of ethics in place and widely disseminated by year 2			X	X	X	X	Laboratory Liaison LMIS coordinator Logistics coordinator Head of Lab Services (Acting) LTC chair Technical Advisor	MOH procurement Department MOH Pharmacy Department LTC Sub committee for equipment and supplies MOH budget (laboratory services) Stakeholders Heads of laboratory network Partners

**4.11 REGULATORY AND LEGAL FRAMEWORK: National legal and regulatory framework components shall be streamlined and strengthened to enforce licensing, registration and control of all health laboratory services.**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year					Responsibility Centers	Resources		
		1. Mobilize funding to support recruitment of members 2. Provide technical support for the development of CPD programs by associations	1. Fully functional AHPC Board by year 3						X		Laboratory Liaison HRD coordinator Head of Lab Services (Acting) LTC chair Technical Advisor	MOH clinical departments MOH HRD department Ministry of Local Government Ministry of Finance Training institutions MOH budget (laboratory services) Heads of laboratory network Partners	
3. Ensure registration of all laboratories and practicing laboratory professionals	1. Strengthen the system for Registration, licensing and inspection of laboratories	1. Setup an electronic database for private laboratories and laboratory professionals 2. Update practice guidelines 3. Review and update regulatory tools (assessment checklists, Inspection guides)	1. Electronic Database in place by year 2						X	X		Parliamentary Acts MOH clinical departments MOH HRD department Ministry of Local Government Ministry of Finance Training institutions MOH budget (laboratory services) Heads of laboratory network Partners	
		1. Guidelines and tools in place by year 1						X			Laboratory Liaison HRD coordinator Head of Lab Services (Acting) LTC chair Technical Advisor		
	3. Strengthen the regulation and supervision of Health Laboratory training institutions and programs	1. Form national training committee with stakeholders from various institutions to regularly check and advise on training standards 2. Review the minimum standards of training schools and programs in conjunction with MOES, Allied Health Professionals council and training institutions.	1. Regulatory requirements for institutions and programs met by year 5	1. % of training institutions accredited in line with national recommendations			X	X	X	X	X	Laboratory Liaison HRD coordinator Head of Lab Services (Acting) LTC chair Technical Advisor	Existing Parliamentary Acts MOH clinical departments Ministry of Education MOH HRD department Ministry of Local Government Ministry of Finance Training institutions MOH budget (laboratory services) Heads of laboratory network Partners

**4.12 MONITORING AND EVALUATION: Mechanisms shall be in place to monitor and evaluate the implementation of this laboratory policy**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year	Responsibility Centers	Resources
Establish and strengthen the structures for Monitoring and Evaluation of Laboratory services	1.Establish a position for Laboratory Monitoring and Evaluation Coordinator at the MoH Laboratory department	1. Define roles and responsibilities of the M&E Coordinator at MOH. 2.Recruit and deploy M&E Coordinator	1.M&E position in place by year 1	1. % of M&E milestones achieved at specified periods 2.% no of practitioners and facilities that conduct M&E activities at their stations	X X X X X	Head of Lab Services (Acting) LTC Chair Technical Advisor	Ministry of Public Services Health services commission MOH Human Resource and Development dept Ministry of Finance MOH budget (laboratory services) MOH restructuring policy National health laboratories Policy HSSPs I, II and III National Health policy Partners
	2.Develop M&E plan for laboratory services	1. Appoint/designate district laboratory M&E focal persons to effect implementation 2.Develop targets and measurable indicators tools and milestones for quality delivery of laboratory services 3.Develop and disseminate National Laboratory M&E Implementation Guidelines and tools. 4. Manage M&E data from districts 5. Train practitioners on M&E implementation	1. M&E framework and plan developed within year 1 2. All facilities carrying out routine M&E activities according to guidelines	3.Number of M&E reports received from the districts, analyzed and utilized to develop improvement strategies	X	Head of Lab Services (Acting) M&E coordinator LTC Chair Technical Advisor	Ministry of Public Services Health services commission MOH HRD dept Ministry of Finance Ministry of Local Government District Public Services Commission MOH budget (laboratory services). MOH restructuring policy National health laboratories Policy HSSPs I, II and III National Health policy Partners

**4.13 Financing and Accountability: Effective financing mechanisms shall be put in place centrally and at local government levels to ensure availability and accessibility of adequate resources for laboratory services**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year				Responsibility Centers	Resources
1.Strengthen financial planning for laboratory services to establish a dedicated budget line for laboratory services	1. Develop costed and timed annual work plan for laboratory services at all levels	1.Train laboratory personnel on development of costed and timed work plans 2.Develop tools for planning and costing for various levels of laboratories	1. All laboratories able to develop annual laboratory work plans with costed activities. 2. Adequate and accessible funds for laboratory services by year 3	1. % of funded and implemented activities annually as outlined in the strategic planning 2. % of laboratories meeting at least 50% of their service demands			X	X		Head of Lab Services (Acting) LTC chair Technical Advisor  MOH clinical departments MOH PPPH policy MOH UNMHCP guidelines Ministry of Finance Ministry of Local Government District Health Budgets National Health Laboratory Policy MOH budget (Laboratory Services) Ministry of Local government District Health Office Partner
	2.Develop and Implement resource accountability guidelines for laboratory commodities/resources	1. Develop/review stock/consumption monitoring tools (electronic & Manual) 2. Train laboratory personnel in use of these monitoring tools	1.Guidelines and tools (electronic and manual) for resource accountability and utilization in place and effectively used by practitioners by year 2	1.% Resource Line items Managed according to guidelines		X	X	X	X	Head of Lab Services (Acting) LTC chair Technical Advisor  Ministry of Public Services Health Services Commission MOH HRD dept District Health Office MOH budget (laboratory services) MOH restructuring policy National Health Laboratories Policy HSSPs I, II and III National Health policy Partners

**4.13 Financing and Accountability: Effective financing mechanisms shall be put in place centrally and at local government levels to ensure availability and accessibility of adequate resources for laboratory services**

Strategic Objective	Specific objective	Activities	Targets	Indicators (Outcomes)	Year					Responsibility Centers	Resources
2. Mobilize funds to meet the laboratory budget needs (government and donor funding)	1. Develop and implement a plan for resource mobilization	1. Identify areas that can benefit from partner support 2. Continuously advocate for the importance of lab services and therefore the need for improved funding 3. Establish cost recovery mechanism for laboratory service delivery in private wings of public hospitals for reinvestment in laboratory services	1.Resource mobilization plan implemented by year 2	1. % funded and implemented activities		X	X	X	X	Head of Lab Services (Acting) LTC chair Technical Advisor	Ministry of Public Services Health Services Commission MOH Human Resource and Development dept MOH budget (laboratory services) MOH restructuring policy National Health Laboratories Policy HSSPs I, II and III National Health policy Partners
3. Extend financial support to private health facilities for laboratory services in accordance with PPPH Policy	2.subsidize high priority diagnostic tests to the private sector to improve access	1.Advocate for increased allocation of funds from the national budget to support the subsidy program 2.Develop guidelines/criteria for subsidy program	1.Subsidy program for priority laboratory services implemented by year 5	1. % of health facilities with lab services fully supporting UNMHCP.  2. % of population with geographic access to lab services	X	X	X	X	X	Head of Lab Services (Acting) LTC chair Technical Advisor	MOH clinical departments PPPH policy UNMHCP guidelines Ministry of Finance Ministry of Local Government District Health Office District Health Budgets National Health Laboratory Policy MOH budget (Laboratory Services) Ministry of Local government Partner

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## **APPENDICES:**

### **Appendix 1: Core functions of National Health Laboratories**

#### **1. Disease Prevention, Control and surveillance:**

Provide timely, accurate and precise analytical results for different clinical diagnostic and analytical functions for the assessment, management and surveillance of infectious, communicable and non communicable, genetic, and chronic diseases, and environmental exposures.

Serve as the first line of defense by rapidly recognizing and preventing the spread of communicable diseases by identifying causative agents for disease outbreaks, determining sources of infections, identifying carriers and locating sources of infections in the environments.

Serve as a center of expertise for the detection and identification of biologic agents of significance in human disease and hence ensure access to laboratory expertise and capabilities in bacteriology, virology, Parasitology Molecular microbiology, immunology, serology, Chemistry, Mycology, hematology and Immuno-hematology.

Provide specialized tests for low-incidence, high-risk disease, detect epidemiologic shifts and detect newly emerging pathogens

Provide population surveillance for conditions of interest to the public health community

Perform tests to meet specific program needs of public health agencies

#### **2. Integrated data management:**

Serve as the focal point for accumulating, blending and disseminating scientific information in support of public health programs including capturing laboratory data essential for decision making, communicate data in standardized data formats, dissemination of disease outbreak laboratory data, and providing a centralized facilities for receipt, storage, retrieval and analysis of data and provide primary data necessary to inform and carry out policy and planning.

Serve as a nucleus in the national database system to collect, monitor and analyze laboratory data, especially with as a link with the CDC and WHO for surveillance of disease of national and global concern.

Serve the data needs of country epidemiologists, laboratories, and practitioners in identifying trends and sentinel events which indicate emerging health problems.

#### **3. Reference and specialized testing:**

The NHPL will have the ability to test and aid in the diagnosis of unusual pathogens, confirm atypical laboratory test results, verify results of other laboratory tests, provide oversight for quality assurance, test epidemiologically-significant specimens with potential public health implications, provide reference diagnostic testing for disease agents of public health importance to private sector laboratories with inadequate capacity, provide toxicology testing, and test rare and unusual disease of public health importance.

#### **4. Environmental health and protection:**

Conduct scientific analyses of environmental samples (air, water, soil) to identify and monitor potential threats to human health and ensure compliance with environmental regulations.

Analyze environmental and biological specimens and detect, identify and quantify toxic contaminants e.g. lead, pesticide residues, heavy metals and volatile organic compounds

Ensure laboratory services that support the assurance of clean water by analyzing water for synthetic

organic chemicals, pesticides, inorganic chemicals, pesticides, inorganic chemicals, and microorganisms

#### **5. Food safety:**

The NHPL will collaborate with the NDA to test specimens from persons, foods and beverages implicated in food borne illness outbreaks to identify cases and sources, analyze food specimens to detect, identify, and quantify toxic contaminants e.g. pesticide residues and heavy metals.

#### **6. Laboratory improvement and regulation:**

Coordinate and promote quality assurance programs for private clinical and environmental laboratories through training, consultation, certification, and proficiency testing.

Serve as the standard of excellence for local and private laboratory performance.

Exercise leadership and authority as the agency responsible for laboratory regulation and training in the clinical and environmental areas.

Develop and oversee countrywide quality assurance and laboratory improvement programs to ensure the reliability of laboratory data used for communicable disease control and environmental monitoring.

Oversee the licensure, certification, and accreditation of laboratories to ensure medical, environmental, and food safety, laboratories fulfill national and legal mandates.

#### **7. Policy development:**

Provide scientific and managerial leadership in developing public health policy and in developing, promoting, and integrating public health laboratory science into practice and participate in developing standards for all health related laboratories, including food, environmental, clinical, and research standards.

#### **8. Emergency response:**

Provide laboratory support as part of national disaster preparedness plans for environmental or health emergencies, including rapidly identifying and investigating analyses of biological, chemical, and radiological agents, regardless of the source of exposure (i.e. unintentional, terrorist or natural disaster), ensuring the capacity to quickly and accurately handle a substantial volume of tests during an emergency situation; providing a rapid response system for hazardous contaminants waste spills (air, water, and soil) and in food borne disease outbreaks.

#### **9. Public health related research:**

Evaluate and implement new technologies and analytical methodologies to ensure laboratories provide state of the art, cost -effective, and timely analytical diagnostic services and support the public healthcare professionals in the country by identifying the need for new laboratory methodologies for disease detection and prevention and conducting research to improve laboratory tests for more effective disease surveillance and conducting research to develop rapid methods for laboratory diagnosis.

Collaborate with academic, private sector researchers and other government agencies to adapt emerging technologies in public health laboratory techniques and information systems.

Conduct applied studies into new and improved analytical methods and services which are necessary to meet changing public health surveillance and environmental regulatory requirements.

Provide advice to the private sector regarding newly marketed and validated tests.

#### **10. Training and education:**

Sponsor training opportunities to improve scientific and technical skills of public health laboratory staff.

Provide, or facilitate, training courses and workshops for laboratory staff in private and public sectors to continually upgrade the knowledge and skills essential for providing quality services in medical,

environmental, and public health laboratories.

Provide short and long term training opportunities to prepare scientists for careers in public health laboratory practice.

Provide continuing education in management and leadership development for those in administrative positions.

Participate in training of medical scientists.

### 11. Partnerships and communication:

Develop and strengthen partnerships among countrywide public health leaders, academia, and private industry to advance understanding of the critical role played by public health laboratories in supporting the core functions of public health.

Emphasize the role and value of the public health laboratory to national public health programs.

Participate in strategic policy planning and development processes.

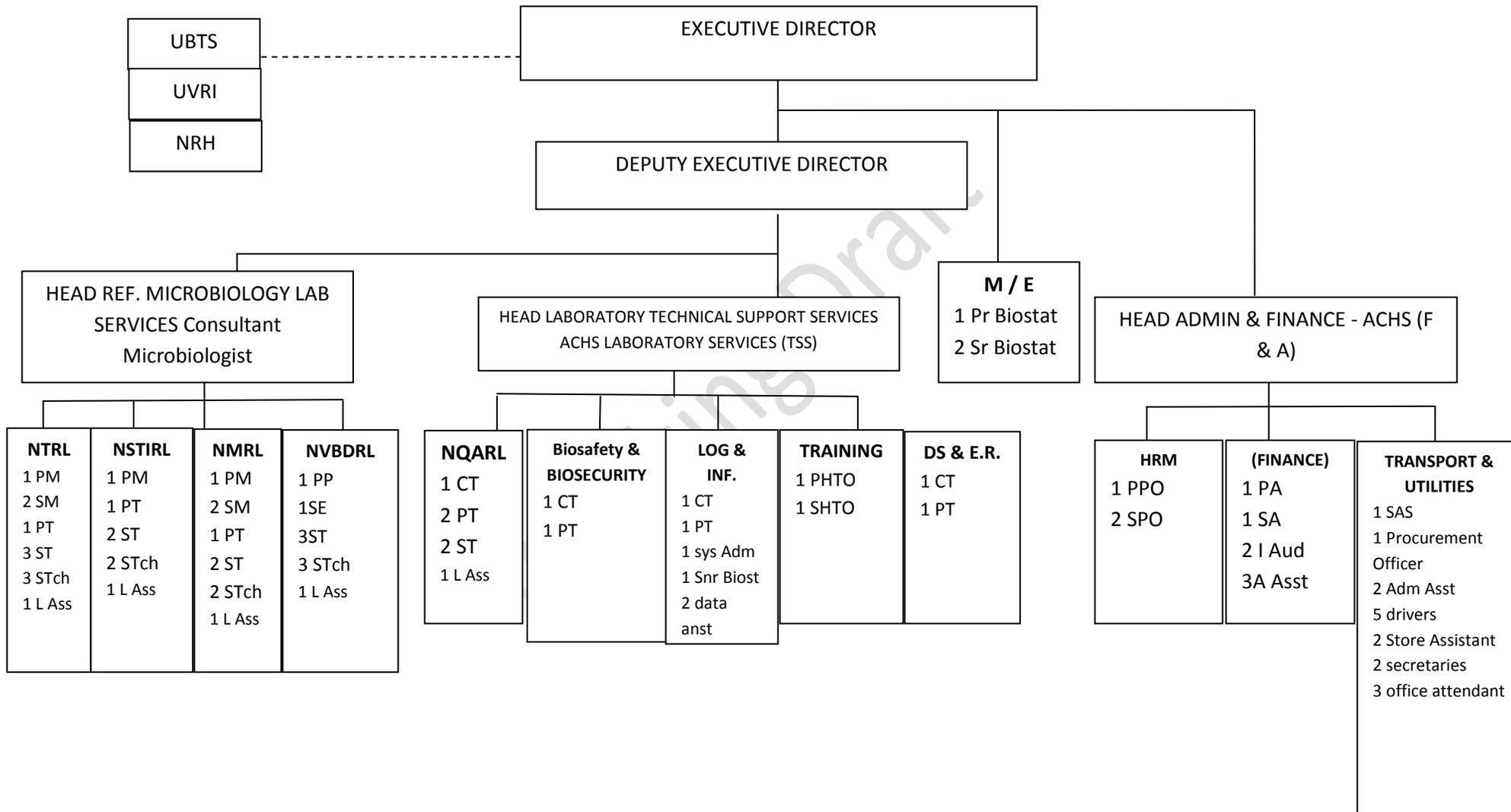
Maintain strong communication networks among public health doctors/private doctors; city council officials; epidemiologists; directors of various public health program; legislators; state health budget personnel; and other laboratory management staff.

## Appendix 2: Swot Analysis Of The National Laboratory System

Strengths	Weakness
<ul style="list-style-type: none"> <li>• Presence of a National Health Laboratory Policy</li> <li>• Political will</li> <li>• Central Public Health Laboratories and its designated authority to coordinate laboratory activities on behalf of MOH.</li> <li>• Existence of specialized/reference laboratories</li> <li>• Existence of a National Laboratory Advisory and Technical Committee which is Advisory to MOH</li> <li>• The laboratory network and infrastructure with capacity to provide basic tests at the different levels</li> <li>• Standardized list of tests according to UNMHCP</li> <li>• Presence of District Laboratory Focal Persons (DLFP) and their acceptance at district level.</li> <li>• Existence of the Allied Health Professional Council and code of professional conduct</li> <li>• Existence of some Quality Assessment Schemes</li> <li>• Existence of a The laboratory Credit Line at the National Medical Stores for Laboratory Procurement</li> <li>• Functional Human Resource, Quality</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of a department or section at MOH for lab services management and coordination</li> <li>• The Laboratory Policy does not define the laboratory structure within MoH.</li> <li>• Lack of a strategic Plan for coordination and implementation of Laboratory services</li> <li>• Lack of a dedicated line budget for laboratory services</li> <li>• The National Laboratory Advisory and Technical Committee and its subcommittees plays a dual role of being advisory to the MoH and implementing activities</li> <li>• CPHL lacks a clear mandate and is inadequately resourced for its operations</li> <li>• Linkages between reference laboratories are not clearly defined</li> <li>• DLFP positions are designated and not in the establishment.</li> <li>• The Laboratory Services currently fall within the Departments of National Disease Control and Clinical Services.</li> <li>• Limited number of personnel with lab management experience</li> <li>• The Laboratory Scheme of service is not comprehensive and outdated</li> <li>• Inadequate Human Resources in terms of numbers and skill level.</li> </ul>

<p>Assurance, HMIS and Infrastructure Units at MoH.</p> <ul style="list-style-type: none"> <li>• Draft Public Private Partnership for Health Policy</li> <li>• In country schools for training of Laboratorians for basic diagnostic testing</li> <li>• Surveillance of priority diseases</li> </ul>	<ul style="list-style-type: none"> <li>• Inadequate reagents, commodities and supplies</li> <li>• Information communication transmission challenges.</li> <li>• Laboratory services have not progressed to support other health care services in accordance with UNMHCP</li> <li>• Poor infrastructure and referral system</li> <li>• Inadequate biomedical engineers and capacity for laboratory equipment maintenance</li> <li>• Inadequate or poor implementation of Quality Managements Systems including inventory systems</li> </ul>
<p><b>OPPORTUNITIES</b></p>	<p><b>THREATS</b></p>
<ul style="list-style-type: none"> <li>• National Health Systems strategic plans II and III</li> <li>• National Health laboratories policy</li> <li>• Signed declaration in support of lab services (Maputo, Younde, Lyon, Kigali etc)</li> <li>• Partner support in lab strengthening activities</li> <li>• Restructuring of MOH</li> <li>• Accreditation Programs</li> </ul>	<ul style="list-style-type: none"> <li>• Parallel system in use</li> <li>• Uncoordinated partner activities and overdependence on donor support</li> <li>• High disease burden and client demand</li> <li>• Changing technology</li> </ul>

### Appendix 3: Proposed Management Structure for National Health Laboratory Services in Uganda



## The budget

<b>4.1. Organization and Management</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Total</b>
Facilitate Technical working group to develop organogram for division of lab services/CPHL and define linkages between the Department and Specialized labs	4980					4980
<b>Recruitment and personnel costs</b>						
1. Recruitment costs (Adverts/Interviews)	7000					7000
2. Division Personnel costs	x	71990	71990	71990	71990	287960
3. CPHL Personnel costs		188440	188440	188440	188440	753760
4. Regional Personnel Costs		97310	97310	97310	97310	389240
5. District Personnel Costs (DLFP)		646240	646240	646240	646240	2584960
<b>Office equipment &amp; Vehicle procurement</b>						
Procurement of office equipment, furniture and vehicles for the lab services division		214090		50000		264090
Procurement of office equipment, furniture and vehicles for CPHL		564790		100000		664790
Total Recurrent expenses for Lab division (Fuel, vehicle and equipment maintenance, imprest)		125980	125980	125980	125980	503920
Total Recurrent expenses for CPHL (Fuel, vehicle and equipment maintenance, imprest)		308700	308700	308700	308700	1234800

<b>4.3. Facilities and Safety</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Total</b>
Reviewing existing laboratory infrastructure standards for all levels of labs	36630					36630
Conduct and infrastructure needs assessment	41932	41932	41932	41932	41932	209660
Construct, refurbish and maintain laboratories 230 laboratories over 5 years	1585870	1585870	1585870	1585870	1585870	7929350
Development of biosafety, biosecurity guidelines/standards/SOPs		38380				38380
Conduct biosafety/biosecurity risk assessments/audits	47550	31700	31700	31700	31700	174350
Facilitate Regional and District Biosafety/biosecurity committee	1290	1290	1290	1290	1290	6450

<b>4.4. Equipment and supplies</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Total</b>
Facilitation to the national logistics and supplies subcommittee of LTC	10080	10080	10080	10080	10080	50400
Conduct a national laboratory logistics needs assesment	53150					
Stakeholder's meetings to develop guidelines for the logistics system	20730					

Support national quantification for reagents, supplies and commodities by CPHL.		30680				
Develop guidelines and procedures for procurement of lab supplies including donations.		38340				
<b>Hold workshops to Prepare annual quantifications and procurement plan</b>	<b>27485</b>	<b>27485</b>	<b>27485</b>	<b>27485</b>	<b>27485</b>	<b>137425</b>
Develop guidelines for reagent reconstitution and procure equipment for regional hospitals	10310					
Procurement of Equipment for Reagent reconstitution at hospitals		824,250				824250
Procurement of Equipment, HIV test kits and accompanying reagents for all facilities in the country	54815927.9	46503443	50354724.93	54733687.45	59344421.66	265752205.3
Conduct advocacy meetings to increase district storage capacity for laboratory supplies			70164			70164
Procure cold storage equipment for lab supplies	436,000					36,000
Develop guidelines for proper storage at the district and facility levels		14044				14044
Conduct a baseline assessment of expired supplies and obsolete equipment at all levels.			25200			25200
Develop and disseminate guidelines for disposal			27870			27870
Develop standards and policy guidelines for procurement, placement and management of laboratory equipment at all levels			29425			29425
Procure equipment maintain ace contracts for Automated equipment	596500	596500	596500	596500	596500	2982500
Strengthen National and Regional Equipment Maintenance Workshops in collaboration with the infrastructure division (meetings!!!!)	51418					51418

<b>4.5 Human Resource Development</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Total</b>
Hire 2 Consultant to review scheme of service and training curricula for lab training schools		<b>211000</b>				<b>211000</b>
Review of scheme of service for laboratory personnel		77325				77325.2
Development of a continuous professional development program for laboratory personnel		230877				230877.2
Train 450 personnel in CPD per year		180400	180400	180400	180400	721600
Training and mentoring 335 trainers in logistics / inventory management		100522	100522	100522	100522	402088
Train 525 personnel in laboratory safety and biosecurity			218209			218209
Training 1500 personnel for quality management systems and accreditation	229755	229755	229755	229755	229755	1148775
Train 260 personnel for monitoring and evaluation		270186				270186
Train 150 laboratory personnel in research methodology (30 per year)	13,590	13,590	13,590	13,590	13,590	67,950
Train 112 DLFP per year in costing and planning of laboratory services		33,643	33,643			

<b>4.6. Quality Management System</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Total</b>
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Mentorships and audits for continuous process improvement	15165	15165	15165	15165	15165	75825
Pilot, evaluate and rollout the National accreditation plan (assessment and mentoring visits)	10110	10110	10110	10110	10110	50550
Conduct Sensitization of stakeholders on QA structures	19190					19190
Development/review of Quality management documents (guidelines and SOP)		38380				38380
Mentorship for improvement of Internal Quality Assurance System at all levels	5055	5055	5055	5055	5055	25275
Facilitation for regional and district QA Officers		20080	20080	20080	20080	80320
Harmonize and expand Uganda NEQAS proficiency testing scheme	63500	63500	63500	63500	63500	317500

<b>4.7. Information systems</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Total</b>
Advocacy district meetings for seven regions	81109					81109
Support Quarterly Meeting of national LMIS sub-committee	2120	2120	2120	2120	2120	10600
Engage a consultant to facilitate development of an electronic LMIS	49215					49215
Procure e-LIS		150000				150000
<b>Rolling out Electronic Laboratory Information System</b>			2971268			2971268
<b>Publish a semi-annual bulletin for advocacy and dissemination of lab of information</b>	16060	16060	16060	16060	16060	80300

<b>4.8. Research and Development</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Total</b>
Development of research agenda and guidelines for laboratory systems research	28227					28227
Research dissemination and networking of laboratories for research	14436	14436	14436	14436	14436	72180
Award annual research fellowships	25480	25480	25480	25480	25480	127400
Develop guidelines for evaluation of new laboratory methods/techniques	7470					7470
Award 10 Research Grants Annually		100000	100000	100000	100000	400000

<b>4.9. Community</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Total</b>
Sensitize Community on their role in laboratory service		24560	24560	24560	24560	98240
Develop, print and disseminate guidelines for patient confidentiality and Privacy		94624				

<b>4.10. Partnerships</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Total</b>
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Hold Annual partner stake holder's meetings	25000	25000	25000	25000	25000	125000
Procure vendor provided services for viral load testing for 24000 persons on ART annually		1680000	1680000	1680000	1680000	6720000

<b>4.11. Regulatory framework</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Total</b>
Orient AHPC focal persons on Laboratory services		60708				60708
Review and disseminate guidelines for registration, inspection and licensing of laboratories		42730				42730
Customize the IFLBS Code of ethics to Uganda			26730			26730
Facilitate a meeting to chart a way forward for training of pathologists in Uganda	6940					6940

<b>4.12. Monitoring and Evaluation</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Total</b>
Develop an M and E Framework for laboratory services						
Manage data for monitoring and evaluation of lab services	16140	16140	16140	16140	16140	80700

<b>4.13. Finance and Accountability</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Total</b>
Hire consultant to facilitate development of tools for planning and costing for various levels of laboratories	31650					31650
Development and dissemination of tools for planning and costing of lab services (Technical working group, printing and dissemination)	103094					103094
Support districts meetings for development of annual work plans	69835	69835	69835	69835	69835	349176
Establish a think tank to support planning of laboratory services	264300	264300	264300	264300	264300	1321500
Hold monthly financial review and planning meetings	10332	10332	10332	10332	10332	51660
<b>GRAND TOTALS</b>	<b>58,854,626</b>	<b>56,057,448</b>	<b>60,377,191</b>	<b>61,503,645</b>	<b>65,964,379</b>	<b>302,442,169</b>