



Republic of Zambia
Ministry of Health

**Zambia National Biomedical Laboratory
Policy**

2nd Edition
2023

Table of contents

i.	Foreword	2
ii.	Acknowledgement	3
iii.	Acronyms	5
1.	Introduction	6
2.	Situation Analysis.....	7
3.	Vision	10
4.	Mission	10
5.	Rationale.....	10
6.	Guiding Principles.....	10
7.	Strategic policies.....	11
7.1.	Resource Mobilisation and Financing.....	11
7.2.	Local, Regional and International Collaboration	11
7.3.	Human Resources	12
7.4.	Test Selection and Use	13
7.5.	Equipment and maintenance	13
7.6.	Supplies.....	14
7.7.	Infrastructure and Utilities	15
7.8.	National Laboratory Systems and networks.....	15
7.9.	Information Management System	16
7.10.	Ethics	16
7.11.	Research and Development.....	17
7.12.	Biosafety and biosecurity	17

Foreword



As the Minister of Health, I am pleased to present the second edition of the Zambia National Biomedical Laboratory Policy. This policy is a result of extensive consultations and reviews of the current situation and challenges of laboratory services in the country. It provides a comprehensive framework and guidance for the development and improvement of quality, accessible, and cost-effective laboratory services that support the provision of health care and public health.

Laboratory services are essential for the diagnosis and management of diseases, surveillance and control of epidemics, and research and innovation. The COVID-19 pandemic has underscored the need for a strong and resilient laboratory system that can respond to emerging and re-emerging health threats. This policy aims to address the gaps and weaknesses in the laboratory system and to strengthen the coordination and collaboration among various stakeholders, including the public and private sectors, academic and research institutions, and local and international partners.

The successful implementation of this policy will require the commitment and support of all stakeholders, as well as adequate allocation of resources. I urge all the relevant actors to work together to ensure that this policy translates into improved laboratory services and health outcomes for the people of Zambia.

The Ministry of Health wishes to thank all stakeholders for their various contributions made during the review process and up to the finalization of this document.



Hon. Sylvia. T. Masebo, M.P
Minister of Health

Acknowledgement



The Ministry of Health extend our deepest gratitude to all individuals and organizations that contributed to the development of the Zambia National Biomedical Laboratory Policy, 2nd Edition. Your expertise, insights, and dedication have been invaluable in shaping a comprehensive framework that will enhance the quality and accessibility of laboratory services across Zambia.

Special thanks to the Ministry of Health staff, whose tireless efforts and commitment to excellence have been the cornerstone of this policy's revision. We also appreciate the collaborative spirit and support from various stakeholders, including public and private sectors, academic institutions, and international partners, which have been crucial in addressing the multifaceted challenges of laboratory services.

Lastly, we are particularly grateful to the Laboratory Technical Working Group for their meticulous evaluation and recommendations, which have significantly informed this policy's content. Our acknowledgment would not be complete without mentioning the healthcare workers on the ground, whose daily experiences and feedback have been a guiding light in this policy's formulation.

A handwritten signature in dark ink, consisting of a stylized 'K' followed by a horizontal line and a small flourish.

Dr Kennedy Lishimpi
Permanent Secretary – Technical Services
Ministry of Health

List of contributors

NAME	ORGANISATION
Boyd Chirwa	Cabinet Office
Chrispine Sichone	MOH
Davy Nsama	MOH
Aaron Shibemeba	MOH
Juliana Kinkese	MOH
Mutende Mwamba	MOH
Mutinta Shisholeka	MOH
Nshimba Mwansa	MOH
Powell Choonga	MOH
Taurai M Musonda	MOH
Zephaniah Mtonga	MOH
Clement Phiri	APHL
Doreen Shempela	CHAZ
Esther Musongole	UKHSA
Felistas Mwale	Private Freelance Consultant
Fredrick Banda	CVRI
Geoffrey Kwenda	UNZA
Grace Kahenya	ICF/IDDS
Joseph Kasongo	USAID
Kwitaka Maluzi	ZAMBART
Linda Mwila Chibesa	CRS
Mable Mutengo	LMMU
Mpande Mwenechanya	CIDRZ
Fales Zulu	LMUTH
Mpanga Kasonde	ZNPHI
Mutale Mubanga	CIDRZ
Namwaka Mulenga	CHAI
Precious Bwalya	ASLM
Ruth Nakazwe	UTH
Sam Yingst	CDC
Sody Munsaka	UNZA
Sumbukeni Kowa	NFL
Thomas Stevens	CDC

i. Acronyms

APHL	Association of Public Health Laboratories
ASLM	African Society for Laboratory Medicine
CDC	Centres for Disease Control
CHAI	Clinton Health Access Initiative
CHAZ	Churches Association of Zambia
CPD	Continuing Professional Development
CRS	Catholic Relief Services
CVRI	Central Veterinary Research
DNO	Diagnostic Network Optimisation
eLMIS	Electronic Logistics Management Information System
HIV	Human Immunodeficiency Syndrome
HMIS	Health Management Information Systems
HPCZ	Health Professions Council of Zambia
ICT	Information and Communication Technologies
IHR	International Health Regulations
ITSS	Integrated Technical Support Services
LMMU	Levy Mwanawasa Medical University
MOH	Ministry of Health
NFL	National Food Laboratory
NTRL	National Tuberculosis Reference Laboratory
PLSU	Pathology and Laboratory Services Unit
PPPs	Public-Private Partnerships
QMS	Quality Management Systems
SADCAS	Southern African Development Community Accreditation Service
UKHSA	United Kingdom Health Security Agency
UNZA	University of Zambia
USAID	United States Agency for International Development
UTH	University Teaching Hospital
ZAMBART	Zambia AIDS Related Tuberculosis
ZAMMSA	Zambia Medicines And Medical Supplies Agency
ZAMRA	Zambia Medicines Regulatory Authority
ZNPHI	Zambia National Public Health Institute

1. Introduction

Health Laboratories play a vital role in the diagnosis and management of diseases and conditions, epidemiological surveillance, and control of infectious diseases and epidemics. Modern medical practice requires evidence-based approaches to the diagnosis and management of diseases and conditions. Reliable and timely laboratory services are crucial to Zambia's health security and economy and the ability to meet the obligations of the International Health Regulations (IHR). Global pandemics including COVID-19 have further highlighted the need for a strong laboratory system to respond to public health emergencies.

The value of laboratory services is often overlooked, despite its vital contribution to the provision of cost-effective quality health care. Laboratory results often provide a scientific approach to patient management, empowering clinicians to make timely and accurate diagnoses and to rationalize drug use. The emergence of antimicrobial drug resistance results from both the overuse and misuse of drugs and the lack of laboratory data to support therapeutic decisions.

Laboratory support for maternal and child health reduces both infant and maternal morbidity and mortality and facilitates proper management of those most at risk. On this premise, the improvement of laboratory services will ultimately lead to a reduction in national drug expenditure and an increase in quality patient care and public health.

Policy Formulation Process

The changes in guidelines, introduction of new standards and new technologies have necessitated the updating and revision of the 1997 policy.

Policy Document

The policy document summarizes the main recommendations made in the first edition and includes those from the evaluation exercises.

The policy focuses primarily on clinical diagnostic services and research. The provision of safe blood and donor recruitment is captured in the Zambian National Blood Transfusion Policy. Details of other specialized laboratory functions including surveillance and disease intelligence, emergency preparedness and response, and food safety will be covered by the mandated institutions although areas of overlap with clinical services are identified and included in this document. This laboratory policy shall support the One Health Approach concept. The current edition considers the findings of the evaluation exercise which was conducted from November 2020 to March 2022 by the Laboratory Technical Working Group.

2. Situation Analysis

2.1. Laboratory services

As of 2022 there were 534 fully functional laboratories at different levels of health care. There has been an increase in laboratory services and advancement in technologies such as the implementation of multi-disease testing on a single platform, which have improved laboratory diagnosis with goodwill shown by the Government and partners.

However, there has been no corresponding increase in the strengthening of laboratory systems and networks.

2.2. Human resource

2.2.1. Training

There has been an increase in trained laboratory personnel in the country including staff with postgraduate qualifications. Despite this increase, continuing Professional Development (CPD) programmes are weak and do not offer all the required content to develop the competencies of laboratory staff. Further, the preservice practical and research components in some biomedical training institutions are inadequate. By law, lecturers in biomedical laboratory training institutions should have higher academic qualifications than the students they are instructing. However, some institutions do not comply.

2.2.2. Staff recruitment, placement and retention

The MOH staff establishment of laboratory services currently stand at xxx, out of which 1198 are filled. There are 2,048 laboratory staff working in various levels of laboratory services in the public sector. However, challenges still exist including skewed distribution of laboratory staff towards urban areas, creating shortages in rural facilities and weak management and coordination structures at provincial level and below. Other challenges include staff establishment that does not accommodate and support the diverse specialization as personnel advance academically and also promotion to higher positions.

The efficient and effective quality management of biomedical laboratories must be done by appropriately trained and qualified personnel. However, there have been situations in which unqualified staff are found working in medical laboratories, thereby compromising the quality of laboratory services and public health.

2.3. Resource mobilization and financing

Adequate financing for laboratory services is key to the provision of quality laboratory services. However, there is inadequate government financing towards laboratory services and heavy dependency on donor support. There's currently no contingency fund for laboratory expenditure.

2.4. Information systems management

Reliable and accurate information is critical for the management of laboratory services. However, currently not all laboratory information systems are digitalised and integrated for decision-making and continuous improvement of the services. Additionally, information management systems are not adequately developed and utilised as connectivity to link to the needs of clinical care, surveillance, public health emergency response and monitoring and evaluation and human resource management.

2.5. Supplies, Equipment and maintenance

The essential list of laboratory supplies and equipment at each level of care supported by a well-functioning electronic Logistics Management Information System (eLMIS) has been developed. However, the system has not been decentralised to the sub-district level. Partner-supported tests such as HIV viral load have a consistent supply of reagents. However, there are constant stockouts of reagents and consumables for other tests (non-communicable diseases) without partner support. The efficient management of laboratory commodities and the supply chain requires laboratory staff to be in key decision-making positions to manage the commodities. However, this is non-existence in those institutions responsible for the procurement, storage and distribution of laboratory supplies.

Modern and appropriate equipment is essential for the provision of laboratory services as close to the family as possible. However, some laboratories do not have novel equipment with adequate capacity to respond to testing demands for clinical care and public health.

Equipment maintenance is crucial to ensure that equipment remains in service for as long as possible, provides accurate results, and lowers the cost of operations. Currently, the maintenance programme for laboratory equipment is inadequate. Some laboratory equipment is covered by service contracts through reagent rental agreements. However, maintenance contracts for laboratory equipment do not cover equipment such as those used for haematology and chemistry testing.

2.6. Leadership and governance

For the efficient and effective functioning of laboratory services, there is a need for proper organisational structures, clear policy and legal framework. The current organisational structure, policy and legal framework do not adequately address laboratory services to ensure quality.

2.7. Research and development

Research development is important in facilitating evidence-based managerial and policy decisions. Currently, support for biomedical laboratory research and development is suboptimal resulting in low research output.

2.8. Infrastructure and utilities

The number of biomedical laboratory facilities across the country has increased from 203 reported in the 1997 to 534 facilities in the public, private, academic and research sectors as of 2022. However, laboratory designs and infrastructure do not conform to the required standards.

2.9. Surveillance and Public Health Emergency response

The Government has established the Zambia National Public Health Institute (ZNPHI) and a public health reference laboratory in line with the resolution of the 24th Ordinary Session of the Africa Union Assembly of Heads of State and Government held in Addis Ababa, Ethiopia in January 2015 (AU/Dec.554.XXIV Africa Union).

Currently, Zambia does not have a dedicated public health laboratory system to coordinate and manage public health laboratory functions and these are performed by the clinical laboratory system.

2.10. Local, regional and international collaboration

There has been an increase in the number and type of partners in healthcare especially during recent outbreaks such as the COVID-19 pandemic. The creation of Africa Centres for Disease Control and Prevention (Africa CDC) and Zambia being host to its Southern Africa Regional Coordinating Centre (SA RCC) have opened more opportunities for local and international collaboration under the One Health Approach. However, partner support is usually programme or disease-specific and there is duplication of efforts.

2.11. Test Selection and Use

Currently, there's an essential diagnostics list. However, laboratory tests are not implemented as required at all levels of healthcare due to suboptimal support and weak monitoring systems.

2.12. Quality assurance

The Quality Assurance Coordinating Unit (QACU) has been established at MOH HQ and spearheads the nationwide implementation of laboratory quality management systems (QMS) in laboratories.

The QMS Technical Working Group has been created to improve the coordination of QMS implementation among partners. Currently, a total of eleven laboratories have been accredited to ISO:15189 through Southern African Development Community Accreditation Service (SADCAS). Challenges include a lack of implementation of quality management systems at facilities below level II leading to compromised quality of laboratory services. Further, the establishment is not user friendly, there is no designated quality focal point persons in all laboratories, thereby weakening QMS implementation efforts.

2.13. Biosafety and Biosecurity

The laboratory handles infectious materials and hazardous chemicals that are harmful to humans, animals and the environment. The government has started strengthening biosafety and biosecurity by establishing a Technical Working Group to spearhead the Biosafety and Biosecurity programme. However, a comprehensive legal framework is lacking to guide the implementation and improvement of biosafety and biosecurity. Other gaps include weak occupational health and safety programmes for laboratory personnel. Another key challenge is a deficient waste management programme, especially for liquid waste.

3. Vision

Availability of quality, cost-effective, laboratory services that are accessible to all. (MoH)

4. Mission

To provide equitable access to cost-effective, quality healthcare services as close to the family as possible.

5. Rationale

Considering the diverse issues of laboratory services, there is a need to put in place a policy framework that shall support the provision of laboratory services at each level of health care delivery. This policy will also help provide standards that aim at improving and maintaining laboratory services at optimum standards.

6. Guiding Principles

This policy will be guided by the following principles:

- ii. Creating an enabling environment for the delivery of quality laboratory services through effective management, improved referral system and resource mobilization.
- iii. Ensuring equity of access to quality laboratory services.
- iv. Providing provision of uninterrupted quality laboratory services.

- v. Committing to creating a conducive environment for the development of public/private partnership.
 - vi. Ensuring the laboratory services shall be based on good governance, namely transparency, accountability, and integrity.
- Devolution of laboratory services.

7. Strategic policies

7.1. Resource Mobilisation and Financing

7.1.1. Policy objective

The government shall make available trained and competent personnel, facilities, equipment, reagents, consumables, and support services necessary to implement this policy.

7.1.2. Policy Measures

The government shall:

- Commit to the provision of resources required for the implementation of this policy and laboratory systems strengthening.
- Engage key partners to mobilise resources for the provision of quality laboratory services.
- Ensure that adequate funding shall be allocated for the procurement of laboratory equipment, supplies, and services to meet the national health demand and shall be allocated as a separate cost code.
- Ensure that budgetary allocations for District Health Offices and hospitals shall have a separate cost code for laboratory services.
- Ensure that a contingency fund shall be held for emergency laboratory supplies.

7.2. Local, Regional and International Collaboration

7.2.1. Policy Objective

To strengthen and maximize utilization of local, regional, and international resources and expertise.

7.2.2. Policy Measures

The Government shall:

- Strengthen collaboration between relevant stakeholders in the development and implementation of laboratory policies and standards.
- Establish a mechanism to encourage health providers outside the public system to offer laboratory services in under-served areas through Health Professions Council of Zambia (HPCZ)
- Strengthen collaboration with other national ministries to improve organizational financing, management, and delivery of quality laboratory services.

- Promote collaboration with local, regional, and international organisations and professional bodies to support technical, human resource capacity building and research development.
- Establish mechanisms to coordinate partners for efficient and effective use of resources.

7.3. Human Resources

7.3.1. Policy Objective

To develop human resource capacity needed to deliver quality biomedical laboratory services and biomedical laboratory-based research in support of National health policy and principles of one health.

7.3.2. Policy Measures

The government shall:

- Implement strategies to attract and retain biomedical and research laboratory staff and lecturers in the service to meet and maintain the national health requirements.
- Establish progressive qualification and promotion framework for all biomedical and research laboratory staff and lecturers.
- Ensure measures to support and sustain continuing professional development (CPD) in all facilities and institutions carrying out biomedical and laboratory-based research in the work assigned.
- Conduct and continually revise a biomedical laboratory human resource analysis to define staffing levels, required specialties and organograms, according to the MOH staff establishment.
- Endeavour to have a well funded stratified MOH staff establishment for biomedical and research laboratory staff and lecturers.
- Support all public institutions offering biomedical laboratory-based trainings irrespective of their ministerial placement.
- Provide research trainings that include an adequate internship component at well-resourced and approved sites.
- Ensure that the minimum qualification for biomedical laboratory-based lecturers are as follows:
 - a) BSc for diploma level training
 - b) Masters for degree level training
 - c) PhD for Masters level
- Ensure the ZAMMSA establishment includes positions for Biomedical Laboratory staff for efficient management of uninterrupted reagents and laboratory commodities supply chain systems.
- Ensure the minimum qualification of biomedical laboratory personnel is a diploma.
- Have strategies to ensure that all biomedical Laboratory staff carrying out Clinical Laboratory diagnostic roles are licensed by relevant regulatory bodies

including, the Health Professional Council of Zambia (HPCZ) and the Veterinary Council.

7.4. Test Selection and Use

7.4.1. Policy Objective

To select and use appropriate test profiles to improve preventive, diagnostic, research, surveillance, and referral capabilities of laboratories at all levels of healthcare delivery.

7.4.2. Policy Measures

The government shall:

- Establish a mechanism for selecting laboratory test profiles that meet clinical and public health needs.
- Develop and maintain an updated essential diagnostics list to include molecular diagnostic tests.
- Support the implementation of tests required for essential packages of healthcare.
- Monitor the utilization of laboratory services to promote rational selection and use of tests at various levels of healthcare.

7.5. Equipment and maintenance

7.5.1. Policy Objective

To standardize laboratory equipment and its maintenance at all levels of care for effective implementation of test profiles, availability of uninterrupted supplies and delivery of quality health care as close to the family as possible.

7.5.2. Policy Measures

The government shall:

- Ensure standardisation of equipment shall be promoted through the development of minimum standard equipment lists and specifications for each level of care.
- Maintain a national equipment inventory list. This does not include ancillary equipment whose inventory will be maintained by facilities.
- Commit to supplying public laboratories with standard equipment to attain basic requirements to support the essential packages of healthcare.
- Ensure that the terms of equipment purchase, insurance, maintenance, and service contracts/service level agreements shall be in accordance with national guidelines.
- Ensure that government purchases and donations conform to national guidelines.
- Ensure local and national equipment selection committees shall be established and shall have adequate representation of laboratory personnel.
- Promote reagent rental model between the Ministry of Health and reagent suppliers/equipment manufacturers.

- Ensure that all equipment is decommissioned and disposed of according to set equipment end-of-life guidelines.
- Support diagnostic network optimisation (DNO) exercises.
- Where applicable, procure equipment that requires interfacing with computer systems should be compatible with the selected LIMS.

7.6. Supplies

7.6.1. Policy Objective

To develop and strengthen logistics management systems for laboratory supplies.

7.6.2. Policy Measures

The government shall;

- Ensure use of reliable information for forecasting, quantification, monitoring and evaluation activities in the supply chain shall be used to guide budgetary projections to support laboratory services.
- Ensure adequate allocation of funds for the procurement of laboratory supplies to avoid stockouts.
- Work with and provide technical advice to the Zambia medicines and medical supplies agency (ZAMMSA) on the procurement, storage, and distribution of laboratory supplies.
- Ensure adequate representation of laboratory personnel on all local and national tender committees and advisory bodies procuring laboratory equipment and supplies.
- Ensure that the quality and safety of laboratory supplies conform to relevant local and international regulations.
- Ensure relevant regulatory and statutory bodies such as ZAMMSA and Zambia medicines regulatory authority (ZAMRA) shall be engaged to ensure that suppliers and supplies meet set standards of quality and safety.
- Ensure that the management of laboratory supplies shall be in line with the requirements of the current national supply chain system.
- Ensure national laboratory policies and guidelines shall be observed in all matters pertaining to procurement including Zambia Tender Board Policies.
- Ensure that adequate storage facilities shall be provided for laboratory supplies and shall conform to set standards of safety. (See infrastructure section)
- Develop and distribute an essential laboratory supply kit of supplies for health centres and health posts.
- Ensure continuous improvement of logistics and supply chain management systems using input from sources such as complaints, suggestions, incidents, reports.
- Ensure that laboratory staff shall be oriented and trained to effectively forecast and manage supplies.
- Support local production of laboratory supplies including through public-private partnerships (PPPs).

- Ensure that procurement procedures shall be open and transparent and there shall have a provision to purchase from the local, regional, and international markets.

7.7. Infrastructure and Utilities

7.7.1. Policy Objective

To promote the creation of acceptable, appropriate spacious and functional laboratory infrastructure in conformity with relevant national guidelines and level of care.

7.7.2. Policy Measures

The government shall:

- Ensure that the location and design of laboratories conform to national standards and guidelines and specifications to ensure a conducive environment and safety.
- Designate an authority responsible for the approval of planned laboratory designs and drawings before construction of any laboratory facility is commenced.
- Establish and maintain licensing requirements that enforce compliance of laboratories to national regulations, standard, and guidelines to ensure quality and safety.

7.8. National Laboratory Systems and networks

7.8.1. Policy Objective

To create and maintain high-quality laboratory standards to acceptable national and international levels and ensure the provision of quality health care.

7.8.2. Policy Measures

The government shall

- Establish a directorate of laboratory services with quality management experts to lead the implementation and maintenance of laboratory quality management systems.
- Establish and strengthen quality assurance systems through the creation and adoption of national and applicable international standards, respectively.
- Establish a system of tiered supervision to ensure that all laboratories provide quality services that meet national and international laboratory standards.
- Implement laboratory quality management systems (QMS).
- Support national certification and accreditation of laboratories through a functional national accrediting body.
- Appoint appropriate laboratory practitioner at all levels of health care.
- Ensure that all equipment used for laboratory measurements is appropriate and functional

7.9. Information Management System

7.9.1. Policy Objective

To strengthen and maintain an integrated robust Laboratory information management system.

7.9.2. Policy Measures

The government shall;

- Ensure Laboratory Information System (paper and electronic based) shall be strengthened for the laboratories, based on the service and planning requirements of each level of care and shall be interoperable and fully integrated into the national Health Management Information Systems (HMIS).
- Have a national laboratory database for all laboratories indicating the scope of service delivery.
- Ensure that data is enhanced to facilitate routine diagnosis, surveillance, and timely response to epidemics and notifiable diseases.
- Ensure that monitoring and evaluation visits to include data audits, Integrated Technical Support Services (ITSS), and mentorships are conducted.
- Appoint qualified laboratory information and communication technologies (ICT) and informatics personnel who will be supported by relevant subject experts.
- Ensure there is an appropriate training module/ curriculum for Laboratory Information and data management training is developed and implemented for pre-service and in-service staff.
- Ensure that Collaborative efforts on data management are strengthened amongst the various stakeholders involved in clinical, public health and related services.

7.10. Ethics

7.10.1. Policy Objective

To promote and maintain professionalism and ethical conduct amongst laboratory staff.

7.10.2. Policy Measures

The government shall

- Ensure that the national code of ethics is observed and followed.
- That a breach of the national code of ethics shall be a basis for disciplinary action by employers or the licensing authority.
- That the Biomedical Society of Zambia working with MOH shall promote the practice of code of ethics.

7.11. Research and Development

7.11.1. Policy Objective

To promote biomedical research using a One Health Approach in areas of national, regional, and international concern and to actively apply the research findings to improve the quality of health in the community and disease control.

7.11.2. Policy Measures

The government shall

- Support laboratory-based research and development at all levels of care.
- Establish a national research fund to support laboratory research in the country.
- Promote research at local, national, regional and international levels.
- Research institutions with the necessary expertise shall be identified and activities shall be commissioned to these institutions.
- Support local, national and regional research ethics (human and animal) committees.
- Ensure that all medical research proposals are submitted to the appropriate local, institutional, national and regional research ethics committee.
- Develop human resources in support of biomedical research shall be promoted.
- Create research positions in health institutions.

7.12. Biosafety and biosecurity

7.12.1. Policy Objective

To promote and maintain safe practices amongst laboratory staff whilst protecting the community and the environment; to prevent loss, theft or misuse of microorganisms, biological materials and research-related information.

7.12.2. Policy Measures

The government shall:

- Designate a biosafety and biosecurity officer for each laboratory.
- Establish laboratory biosafety and biosecurity committees at each level of care.
- Enforce the safe disposal of laboratory waste in accordance with relevant local and international biosafety and biosecurity regulations.
- Adequately secure national biobanks to protect laboratory staff and the community.
- Allocate adequate resources for each laboratory to implement biosafety and biosecurity programs.
- Develop and/or adopt national biosafety and biosecurity standards and guidelines based on the biorisks.
- Develop a legal framework for biosafety and biosecurity.
- Provide a safe working environment and PPE for all laboratory staff.
- Ensure that the transportation of biohazardous materials follow relevant national and international regulations and guidelines.

7.13. Surveillance and Public Health Emergency Response

7.13.1. Policy Objective

To support, coordinate and strengthen laboratory systems' capacity to conduct surveillance and disease intelligence, emergency preparedness and response to public health threats.

7.13.2. Policy measures

The government shall:

- Establish and maintain a network of tiered public health laboratories in line with the One Health Approach
- Ensure that all public and private laboratories are part of and report to relevant human and animal health surveillance networks.
- Establish a robust laboratory-based surveillance system for diseases of public or animal health importance.
- Coordinate multi-sectoral stakeholders in a One Health Approach through partnerships and collaborations among local, regional and international entities.
- Establish, coordinate, and maintain a national early warning and response surveillance system to address public health emergencies.
- Support and participate in biomedical, public health, operational and other forms of scientific research.
- Establish and implement a national system for efficient, reliable, timely and safe sample referral and reporting system.