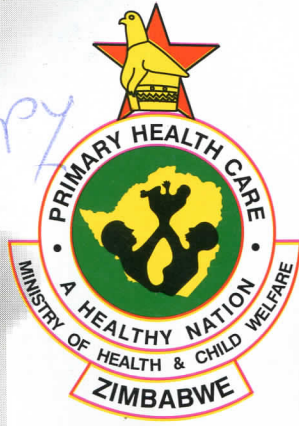


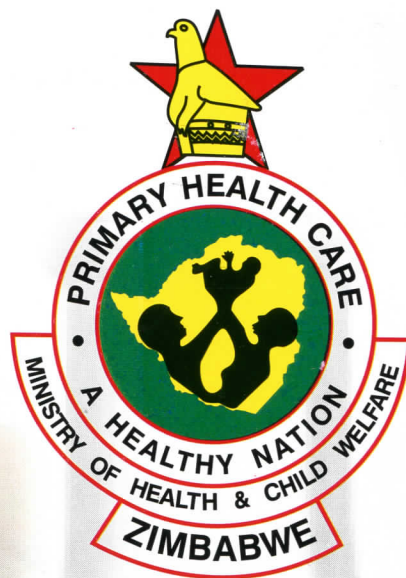
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LABORATORY SERVICES OF ZIMBABWE

National Strategic Plan 2010-2014

GOVERNMENT OF ZIMBABWE



MINISTRY OF HEALTH & CHILD WELFARE

MEDICAL LABORATORY SERVICES STRATEGIC PLAN

2010 - 2014

LABORATORY SERVICES OF ZIMBABWE

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FOREWORD

The value of laboratory services is often overlooked despite its vital contribution to the provision of cost effective quality health care. Laboratory results provide the only scientific approach to patient management allowing the clinician to make accurate diagnosis and rationalize drug use. It is estimated that 70% of all diagnosis depends on the laboratory.

A lack of diagnostic facilities contributes to the high incidence of non specific as well as false diagnoses. This in turn impacts on treatment strategies and lengths of hospital stay, ultimately increasing the cost of health care delivery, and stretching already scarce resources. On this premise an improvement in laboratory service will ultimately lead to a reduction in the national health expenditure, while improving the quality of patient care and health status of the nation.

Laboratories play a vital role in epidemiological surveillance, control of infectious diseases such as cholera, TB, diarrhoeal diseases and other communicable diseases. With the advent of ART, the role of the laboratory is even more critical for initiating treatment and monitoring ART including the emergence of resistance to antiretroviral drugs, SARS, Avian Influenza, H1N1, and the MDR, XDR TB.

The Ministry of Health and Child Welfare recognizes the importance of the laboratory services and that it is an integral part of the health delivery system. The overall objective of the strategic plan is to provide a road map to strengthen laboratory service delivery.

I wish to thank all who contributed to the development of this national laboratory strategic plan and call upon all the concerned stakeholders to implement it. The successful implementation of the plan herein will contribute significantly to improved health service delivery in general.



Honourable Dr Henry Madzorera (M.P.)
MINISTER OF HEALTH AND CHILD WELFARE

LABORATORY SERVICES OF ZIMBABWE

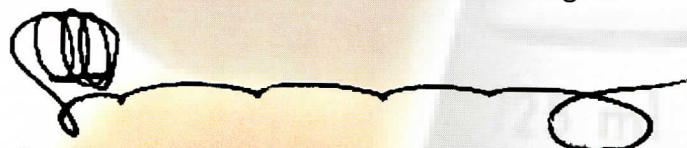
PREFACE

The development of the Zimbabwe National Laboratory Services Plan covering the period 2010-2014 involved the participation of stakeholders at different stages of the consultative process. In particular the consultative process included planning meetings and review of key documents:

- Review of all existing planning documents-
- National Health Strategy 2008 – 2013 Working Document
- Laboratory services planning meeting Sept 2005
- The National HIV and AIDS Strategic Plan
- Medical Laboratory standards document 2004
- MOHCW Equipment policy Document 2005
- National HIV/AIDS Document
- Victoria Falls and Nyanga planning meetings 1996
- National Laboratory policy document 1997 and review of 2006
- Zimbabwe National Quality Assurance Reports
- HRH rapid Assessment Report 2006
- Zimbabwe: Laboratory Services and Supply Chain Assessment December 2009

I would like to acknowledge the working team and all participants from the National reference laboratories, Central and District hospital laboratories, other organizations and individuals for their significant contributions in developing the National Laboratory Strategic plan from inception to completion.

On behalf of the MOHCW, I would like to acknowledge CDC Zimbabwe, which provided both financial and technical support in the development of the strategic plan and policy framework. Other development partners who contributed are also acknowledged.



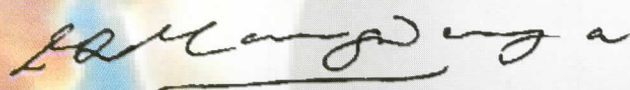
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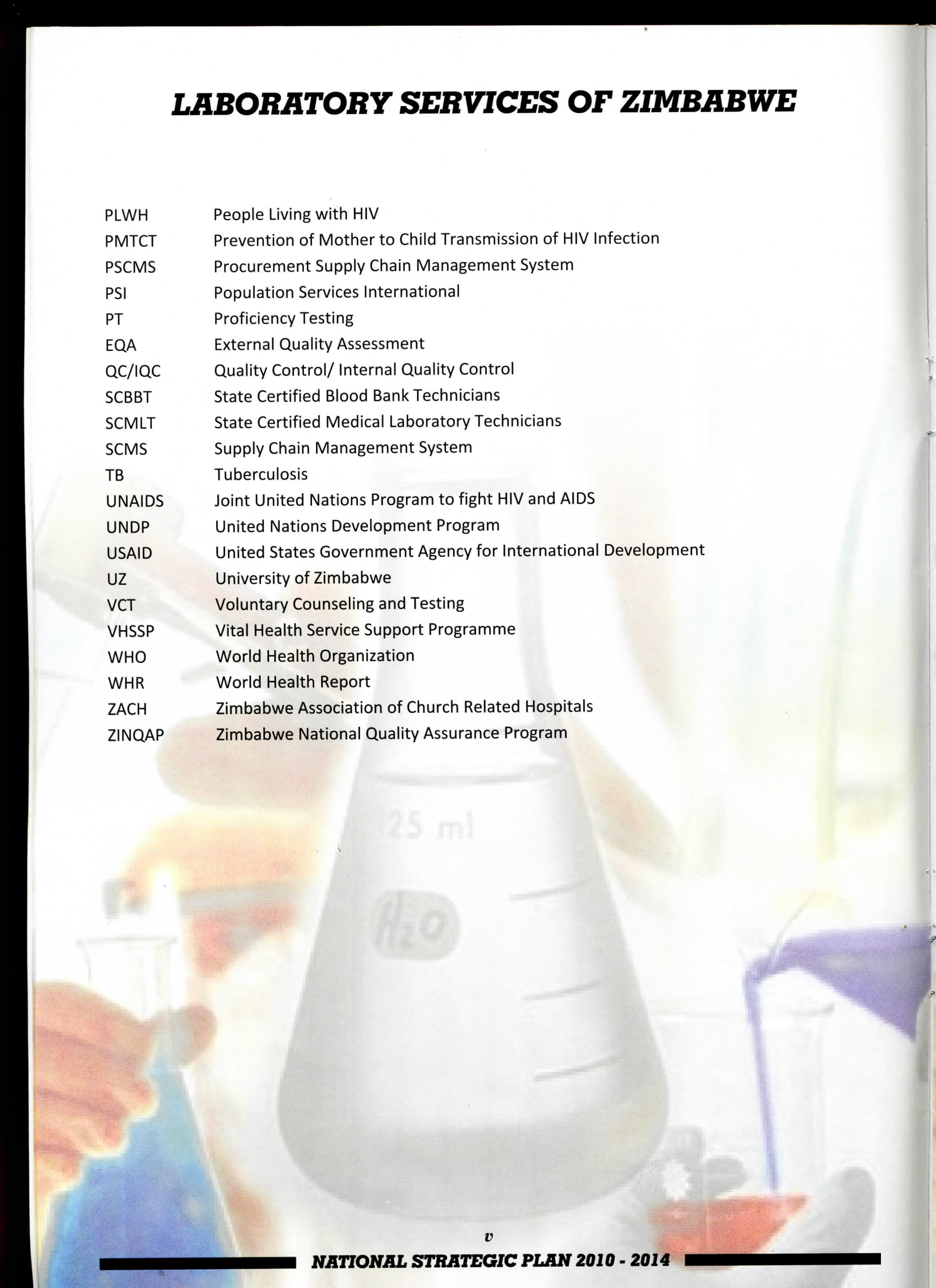
Ministry of Health and Child Welfare

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-retroviral therapy
ARV	Antiretroviral drugs
BEU	Biomedical Engineering Unit
BRTI	Biomedical Research and Training Institute
CDC	Centers for Disease Control and Prevention
CHAI	Clinton HIV and AIDS Initiative
CIMAS	Commercial and Industrial Medical Aid Society
DFID	Department for International Development
ESP	Extended Support Program
EU VHSS	European Union Vital Health Services Support program
FBC	Full Blood Count
GFATM	Global Fund for HIV/AIDS, TB and Malaria
GOZ	Government of Zimbabwe
HIV	Human Immunodeficiency virus
HMIS	Health Management Information System
HRH	Human Resources for Health
HRMIS	Human Resource Management Information System
HSB	Health Service Board
LFT	Liver Function Test
LIMS	Laboratory Information Management System
M&E	Monitoring and Evaluation
MDG	Millennium Development Goals
MLCSCZ	Medical Laboratory and Clinical Scientists Council of Zimbabwe
MLS	Medical Laboratory Scientist
MOHCW	Ministry of Health and Child Welfare
NAC	National AIDS council
NACP	National AIDS control Program
NBSZ	National Blood Services Zimbabwe
NHS	National Health Strategy
NMRL	National Microbiology Reference Laboratory
NTRL	National TB Reference Laboratory
NVRL	National Virology Reference Laboratory

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PLWH	People Living with HIV
PMTCT	Prevention of Mother to Child Transmission of HIV Infection
PSCMS	Procurement Supply Chain Management System
PSI	Population Services International
PT	Proficiency Testing
EQA	External Quality Assessment
QC/IQC	Quality Control/ Internal Quality Control
SCBBT	State Certified Blood Bank Technicians
SCMLT	State Certified Medical Laboratory Technicians
SCMS	Supply Chain Management System
TB	Tuberculosis
UNAIDS	Joint United Nations Program to fight HIV and AIDS
UNDP	United Nations Development Program
USAID	United States Government Agency for International Development
UZ	University of Zimbabwe
VCT	Voluntary Counseling and Testing
VHSSP	Vital Health Service Support Programme
WHO	World Health Organization
WHR	World Health Report
ZACH	Zimbabwe Association of Church Related Hospitals
ZINQAP	Zimbabwe National Quality Assurance Program

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INTRODUCTION

General Background

Zimbabwe is a land-locked country situated in the southern part of Africa and shares borders with Zambia in the Northwest, Mozambique in the North and East, Botswana in the Southwest and South Africa in the South. The country covers an area of 390,757 square kilometers of mainly flat land, with few mountainous areas. It is divided into 10 administrative provinces, two of which are urban (i.e. Harare and Bulawayo). The provinces are in turn divided into 62 districts. The country has a population of approximately 13 million.

Zimbabwe is one of the countries within the Sub-Saharan region that are seriously affected by the HIV and AIDS pandemic. The HIV and AIDS epidemic in Zimbabwe is generalized and mature. Even though HIV prevalence among 15-45 year olds has declined from 24.6% in 2003 to 20.1% in 2005, the rate of new infections and HIV and AIDS related mortality remain very high thereby making the attainment of the country's MDGs difficult. The Ministry of Child and Welfare MOHCW estimated that the number of People Living with HIV (PLWH) in Zimbabwe at the end of 2007 was 1,320,739 of whom 1,085,671 were adults aged 15-49 years. The MOHCW estimates that 250,204 HIV and AIDS related deaths occurred in 2005 and that 342,000 PLWH are in urgent need of anti-retroviral therapy (ART). By September 2008, 120,000 PLWHA were receiving ART. Over 70% of admissions to medical wards in Zimbabwe's major hospitals are patients suffering from HIV and AIDS related opportunistic infections such as TB and other pneumonias (MOHCW 2007).

The Health Sector is guided by the national health policy which is currently being operationalised through a National Health Strategy (NHS 2008-2012). One of the NHS main objectives is to seek equity in health by targeting resources and program to the most vulnerable and needy in the population. HIV and AIDS, Malaria and TB are among priority diseases and conditions to be addressed. The NHS aims to strengthen the national health systems through effective HRH strategic planning and management; HMIS improvement; infrastructure development and refurbishment; introduction of alternative health sector financing mechanisms; decentralization of health service management; transport, communications and equipment improvement; and promotion of wide participation in the health care delivery and financing. The implementation of NHS is supported through national development frameworks (currently the National Economic Development Priority Program (NEDPP)).

The public health system is built on primary health care services which are provided through rural health centers and rural hospitals in each of the rural districts. Rural health centers are usually manned by registered nurses who provide outpatient primary care services including diagnosis and management of simple acute illnesses. Low complexity laboratory tests are carried out at this level by the nurses.

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There is one district hospital in each district. District hospitals in turn refer to provincial or central hospitals. Each province has one provincial hospital providing secondary to tertiary health care services. There are five central hospitals which provide tertiary to quaternary health care services in the country. These hospitals are situated in the three largest cities of the country. Four of these central hospitals are also teaching hospitals. Local authority or municipal clinics provide much of the primary health care in both urban and rural areas. Faith based organizations are a major provider of health services in most rural areas. The Zimbabwe Association of Church Related Hospitals (ZACH) represents and coordinates activities of mission hospitals.

All levels of healthcare are also provided by private sector health facilities and religious/faith based organizations. The private-for-profit sector comprises of mines, large estates, and industrial complexes that provide health facilities at workplaces, private surgeries and hospitals, and independent practitioners who operate mainly in the urban areas. In some districts and provinces where government health institutions have limited capacity, mission hospitals function as designated district or provincial hospitals.

The main purpose of the laboratory strategic plan is to provide a road map for improvement and strengthening the provision and delivery of medical laboratory services to ensure equitable access to quality services based on the adequacy and availability of skilled human and other resource inputs. The objective is to improve, strengthen and promote the institutional and operational capacities of laboratories that will improve their diagnostic and monitoring capabilities in the health care delivery system. Public health laboratories and clinical laboratories are frequently the first sites for the detection of disease outbreaks and also serve as most important source for health information. They produce critical and relevant information for patient care and treatment, disease prevention, epidemiology, surveillance and research. Strong laboratory facilities are therefore essential to health as well as to the national well-being and maintenance of health and economic development in the country.

The national laboratory services, as part of the national health system support curative, preventative and public health components of the health system. The laboratory services constitute a critical component of the national health care delivery system, as they support diseases diagnosis and/ or surveillance; are a basis of treatment and prevention; and well as research.

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Vision

To provide the best, high quality evidence based laboratory services, which are accessible and affordable to the population of Zimbabwe.

Mission Statement

To timely provide the best quality laboratory services and results to clients, in order to fulfill the laboratory services role in the health delivery system.

Policy Statements

1. The policy is guided by the overall national health policy. The Ministry of Health and Child Welfare and all stakeholders in the health laboratory fraternity are committed to the provision of the best health laboratory service and will oversee the establishment of a Technical Advisory Committee (TAC), whose purpose will be to provide technical advice on matters relating laboratory services.
2. Minimum standards of laboratory services will be set by the Medical Laboratory and Clinical Scientists Council of Zimbabwe (MLCSCZ) for the various levels of laboratories and testing sites.
3. Laboratory tests will be performed by appropriately trained, registered and competent personnel as defined by Medical Laboratory and Clinical Scientists Council of Zimbabwe (MLCSCZ).
4. The laboratory will have a procurement supply chain management of diagnostics services.
5. The laboratory will implement QA activities and identify quality indicators to systematically monitor the laboratory's contribution to patient care.
6. A laboratory information system, which will be developed as part of the health management information system, will be the basis for performance monitoring.
7. The laboratory will be based on a monitoring and evaluation plan and laboratory monitoring and evaluation indicators.

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THE STRATEGIC PLAN

A national laboratory strategic plan is important to articulate the shared vision, goals and targets for laboratory services for period 2010 -2014 in order to support the national health delivery system. It will serve as the basis for advocacy, resource mobilization and programming during this period. The five-year National Laboratory Strategic Plan will provide a clear roadmap in the form of strategies and a plan of action. In the next five years, the National Laboratory Services will execute the listed core objectives with the Director of laboratory services providing leadership. Specialized referral services by reference laboratories will become functional, and all laboratory testing sites will be certified and licensed to the National Standard to providing quality assured integrated services.

OVERARCHING GOAL:

A coordinated public health laboratory services strengthened and functioning according to the adopted standards. Advocate for an efficient and effective procurement and maintenance system to be established and implemented.

General Strategic Objectives for the Laboratory Services

- I. Establish a framework within which planning and development of an integrated laboratory service delivery system will be operational.
- ii. Establish and implement operational standards and guidelines.
- iii. Define and implement a network of laboratory structure, system, roles and responsibilities.
- iv. Staff all laboratory services and manage to be functional.
- v. Establish a centralized management information system (MIS) for the laboratory service network for informed decision making.
- vi. Develop and implement a Quality Assurance and Continuous Quality Improvement Programmes for laboratory services.

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CHAPTER 1: POLICY, LEGAL AND REGULATORY FRAMEWORK

STRATEGIC OBJECTIVE 1: Strengthen Legal and Regulatory Framework

Strategic Initiative 1.1: Strengthen the legal and regulatory framework to support implementation of the national regulatory framework & quality systems.

- 1.1.1 Conduct a situational analysis of MLCSCZ and its functions.
- 1.1.2 Mobilize resources for the implementation of the functions of MLCSCZ.
- 1.1.3 Develop Continuous Professional Development (CPD) point system.
- 1.1.4 Mandate minimum CPD points as a pre-requisite for registration of laboratory personnel.
- 1.1.5 Mandate laboratory participation in a PT programme as a pre-requisite for registration of laboratories.
- 1.1.6 Rationalize regulatory body subscription fees to be cognizant of professional salaries.
- 1.1.7 Strengthen the capacity of laboratories to be certified institutions in accordance to national guidelines.
- 1.1.8 Strengthen the capacity of laboratories to be accredited in accordance to ISO 15189 by forming an accreditation body.
- 1.1.9 Strengthen the system to evaluate, certify and register laboratory personnel.
- 1.1.10 Expedite the approval of national standards for laboratories.
- 1.1.11 Disseminate national standards for laboratory.
- 1.1.12 Develop a monitoring system to ensure laboratory equipment, reagents & kits conform to nationally established standards.
- 1.1.13 Develop standards for the relevant areas engaged in clinical and surveillance services such as environmental health, food safety and research.
- 1.1.14 Strengthen and promote Quality Assurance (QA) and Continuous Quality Improvement (CQI) programmes for laboratory services validated by a number of laboratories in compliance with the relevant standards for operation.

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STRATEGIC OBJECTIVE 2: Laboratory Management Frame work: Develop the administrative and technical management structure of the Laboratory Directorate

Strategic Initiative 2.1: Expand and strengthen the administrative and technical management structure of the Laboratory Directorate to enhance linkages between the laboratories to the Director of laboratory services, MOHCW

- 2.1.1 Revise the national laboratory system organogram.
- 2.1.2 Hire the necessary personnel to strengthen the administrative and technical management structure of the laboratory directorate.
- 2.1.3 Develop operation manuals for different levels of management, based on the revised organogram.

Strategic Initiative 2.2: Designate key leadership positions at the different levels of laboratory staff.

- 2.2.1 Develop clearly defined management positions at different levels.
- 2.2.2 Develop descriptive roles and responsibilities for the different levels.
- 2.2.3 Establish a key laboratory technical representative for various programmatic areas at all levels.

Strategic Initiative 2.3: Revise an organizational chart for the national reference, central, provincial and district laboratories.

- 2.3.1 Revise and develop clearly defined charts of the various levels of responsibility at all levels.

Strategic Initiative 2.4: Strengthen the National Laboratory Technical Advisory Committee to provide linkages to programs and partners to support the National Strategic Plan for laboratories.

- 2.4.1 Compose a Terms of Reference for the National Technical Advisory Committee to support the laboratory services in its role in the health sector.

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Strategic Initiative 2.5: Assure adequate financial resources to sustain Quality Laboratory Services and create proper planning mechanism at each level.

- 2.5.1 Develop comprehensive annual budgets that include all available funding.
- 2.5.2 Financial review with provinces and work plans with budgets to be submitted by provincial laboratory manager/s to assist annual budget.
- 2.5.3 Canvas for laboratories to have a separate line item in the district and provincial hospital budget.

Strategic Initiative 2.6: Promote collaboration between laboratory and hospital management

- 2.6.1 Participation of laboratory personnel in hospital management meetings and vice versa, especially for budget planning.

Strategic Initiative 2.7: Strengthen and promote coordination among all laboratories in country to prepare and respond to disease threats.

- 2.7.1 Create a Laboratory Partnership Forum to improve communication and encourage collaboration for integrated disease surveillance, preparedness and response to disease threat

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CHAPTER 2: LABORATORY SERVICES

STRATEGIC OBJECTIVE 1: To improve capacity for diagnostic services through integrated laboratory services.

Strategic Initiative 1.1: Strengthen the tiered laboratory services.

- 1.1.1 Conduct consultative meetings with all program heads to identify testing requirements for current year and projections for the next five years (# of patients, # of tests, personnel and associated costs).
- 1.1.2 Directorate to develop and implement plans for procurement, hiring, training, quality assurance, sample referral system etc., to ensure reliable laboratory services .
- 1.1.3 Conduct quarterly feedback meetings with all laboratory staff and stakeholders.
- 1.1.4 Conduct annual review of plans and re strategies to suit current situation.

Strategic Initiative 1.2: Standardize laboratory testing services.

- 1.2.1 Review existing situation analysis and recent laboratory assessments to analyze capacities for human resource, infrastructure, equipment and services provided to identify gaps in the system with an aim to strengthen service provision.
- 1.2.2 The competences of staff to perform the standardized tests will be based on the qualification and expertise as determined by MOHCW (Annex 4) through a registration with MLCSCZ to conquer staff irregularities in testing services provided.
- 1.2.3 Revise and update standardized test menus guidelines for tier services (Annex 3).
- 1.2.4 Disseminate approved guidelines for standard test menu(s) to all laboratories.
- 1.2.5 List commodity requirements for the test menus to assist with annual budget planning.
- 1.2.6 Review the minimal laboratory equipment requirements for each level of health care to develop a standardized document (Annex 2).
- 1.2.7 Procure equipment and distribute according to testing capacity and complexity at each level. (The type of equipment applicable at each level of testing with current test menu is listed in Appendix II).
- 1.2.8 Develop and implement a plan to enhance capacity for carrying out standardized laboratory testing.

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Strategic Initiative 1.3: Strengthen national specimen referral and result reporting system.

- 1.3.1 Develop guidelines for specimen referral and reporting.
- 1.3.2 Dissemination of referral and reporting guidelines.
- 1.3.3 Training of trainers, orientation and implementation of a national specimen referral and reporting system for the entire laboratory network.
- 1.3.4 Roll out of training to the entire tiered system of laboratories.
- 1.3.5 A system for reliable and safe sample collection, transport and delivery will be established for all sites that require test to be conducted at other laboratories.

Strategic Initiative 1.4: Strengthen the National Reference Laboratories to provide clinical and public health services

- 1.4.1 Develop and implement a national comprehensive plan for specialized laboratory tests (e.g. CD4, viral load, PCR for HIV, communicable and non-communicable diseases including TB and Malaria) at the National Microbiology Reference Laboratory.
- 1.4.2 Support for expansion of NMRL into a multi disciplinary reference laboratory.
- 1.4.3 Continued participation of NMRL, NVRL and NTBRL in EQA's for their respective line of work.
- 1.4.4 Enrollment of NRLs in EQA's for areas of non participation but part of their service package.
- 1.4.5 Strengthen the NRL's to provide laboratory services for evidence based disease surveillance and response in accordance with the WHO-AFRO guidelines on ISDR.

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CHAPETR 3: HUMAN RESOURCES

STRATEGIC OBJECTIVE 1: To strengthen and standardize pre-qualification and in service training programs for laboratory personnel.

Strategic Initiative 1.1: Develop a mechanism for coordinating pre-qualification and in-service training nationally.

- 1.1.1 Campaign through career guidance in high schools throughout the country for careers in laboratory sciences.
- 1.1.2 Conduct partnership forum for donors and educational institutions to come together for funding of scholarship.
- 1.1.3 Review curricular for training institutions and leverage support for stationery, training equipment and tutor compensation Leverage support for stationery, training equipment and tutor compensation.
- 1.1.4 Establish an education program for in service personnel to improve testing services
- 1.1.5 Improve laboratory skills in existing non- qualified/ acting laboratory personnel e.g. laboratory assistants/microscopists through a mentorship program among laboratories..
- 1.1.6 Send laboratory supervisors for management training to improve administration skills.
- 1.1.7 Avail opportunities for laboratory staff at all levels to attend workshops, conferences and other forums.

STRATEGIC OBJECTIVE 2: To improve laboratory personnel recruitment and motivation, achieve the retention through career path development, progression, and welfare.

Strategic Initiative 2.1: Develop a career path for Laboratory professionals.

- 2.1.1 Design and develop a career path for laboratory staff.
- 2.1.2 Improve welfare of laboratory personnel to retain and encourage new recruitment.
- 2.1.3 Establish temporary measure cadres e.g. SCMLT's for continued laboratory testing services.

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CHAPTER 4: COMMUNICATION

STRATEGIC OBJECTIVE 1: Create and strengthen centralized interactive system of communication for effective collection and analysis of laboratory data.

Strategic Initiative 1.1: Establish and implement an electronic Laboratory Information Management System (LIMS) for National Laboratory Services

- 1.1.1 Assess and Develop User Requirement for an electronic LIMS.
- 1.1.2 Develop an information system that includes standardized data collection tools and user manuals.
- 1.1.3 Print data forms and manuals.
- 1.1.4 Conduct training in the use of laboratory information tools.
- 1.1.5 Procure LIMS software vendor to include service contracts.
- 1.1.6 Conduct training in relevant software for laboratory scientists.
- 1.1.7 Procure computers, printers, bar code readers etc. for LIMS.
- 1.1.8 Procure an Internet Service Provider and install appropriate servers. Establish communication facilities including internet within the laboratory to facilitate regular reporting and communication.
- 1.1.9 Conduct in-service trainings of Laboratory Scientists for computer literacy in preparation for LIMS.
- 1.1.10 Pilot LIMS in selected diagnostic centers: Installation and training of LIMS by the vendor in the selected pilot site.
- 1.1.11 Evaluate the functionality of the pilot LIMS.

Strategic Initiative 2.2: Scale-up LIMS to other laboratories

- 2.2.1 Identify additional sites and gaps for LIMS.
- 2.2.2 Install and maintain laboratory data bases.
- 2.2.3 Evaluate LIMS.

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STRATEGIC OBJECTIVE 2: To develop an effective National Monitoring and Evaluation system which will measure the delivery of quality laboratory services in the tiered network.

Strategic Initiative 2.1: Develop and Implement M&E tools to assess laboratory services.

- 2.1.1 Establish a laboratory Monitoring and Evaluation Training Advisory Committee.
- 2.1.2 Review existing laboratory M&E framework.
- 2.1.3 Develop laboratory M&E framework in alignment with the national M&E plan.
- 2.1.4 Develop an M&E training program.
- 2.1.5 Develop indicators for M&E laboratory services.
- 2.1.6 Establish and implement detailed M&E procedures.
- 2.1.7 Procure tools needed for the implementation of M&E system.
- 2.1.8 Train all Laboratory Scientists in the use of M&E procedures and tools.
- 2.1.9 Make provisions for laboratory service vehicles in order to improve support and supervision, monitoring and evaluation and other laboratory activities.

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CHAPTER 5: QUALITY MANAGEMENT SYSTEM

STRATEGIC OBJECTIVE 1: Enhance the Laboratory Quality Assurance to achieve accurate, precise and reliable Medical Laboratory Results in a timely and cost-effective manner.

Strategic Initiative 1.1: Review existing Quality Assurance System and documents (SOPS, standards and internal materials) as the basis for the development and dissemination of a national QA manual.

- 1.1.1 Review key existing QA system and documents and produce a report.
- 1.1.2 Develop a National QA Manual that integrates all laboratory disciplines (TB, HIV, Malaria, Parasitology, Biochemistry etc).
- 1.1.3 Pilot a National QA manual at district level.
- 1.1.4 Review and finalize the QA manual after the pilot.
- 1.1.5 Print and disseminate QA manuals to the laboratory network for implementation.
- 1.1.6 Implement National QA manual.

Strategic Initiative 1.2: Develop & implement standardized training programmes for laboratory quality management.

- 1.2.1 Re-introduce national QA and enroll labs in certification programmes.
- 1.2.2 Employ & train QA managers.
- 1.2.3 Evaluate the National EQA Programme to identify gaps and challenges in the EQA programme.
- 1.2.4 Address gaps & challenges to the EQA programme.

Strategic Initiative 1.3: Develop and implement an integrated national EQA system based on the National QA manual for all laboratory disciplines that are established according to international standards.

- 1.3.1 Strengthen EQA services to look at all testing disciplines and provide EQA PT panels for all laboratories

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- 1.3.2 Recruit and train 8 Heads of Sections, 1 National QA Coordinator and 8 Laboratory Scientists/yr based on the QA framework (Serology , Immuno-Hematology, Parasitology, Biochemistry, Molecular Biology, Bacteriology (TB), Histopathology, Virology)
- 1.3.3 Establish the capacity to disseminate QC materials

STRATEGIC OBJECTIVE 2: Assure that all laboratory activities are performed according to National Safety standards.

Strategic Initiative 2.1: Develop, disseminate and implement a National Safety Guideline for safe laboratory practices and a safe work environment (Infection Control, fire control, waste disposal, BSL, etc).

- 2.1.1 Review existing laboratory safety guidelines and documents
- 2.1.2 Print and disseminate safety guidelines.
- 2.1.3 Implement a National Laboratory Safety training module for pre and in-service training/s.
- 2.1.4 Establish a National Safety Committee responsible for performing safety audits in laboratories.

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CHAPTER 6: SCMS & MAINTANENCE

STRATEGIC OBJECTIVE 1: Ensure proper and timely laboratory reagent and supplies procurement and distribution.

Strategic Initiative 1.1: Design and implement a laboratory logistics system.

- 1.1.1 Conduct a laboratory logistics system design workshop for strategies to build capacity in procurement planning, warehousing and distribution system.
- 1.1.2 Pilot the designed logistic system; review the pilot laboratory logistics system.
- 1.1.3 Develop standard operating procedures and training curriculums for the newly developed logistics system.
- 1.1.4 Train appropriate staff on the new laboratory logistics system.
- 1.1.5 Procure computers to support new laboratory logistics system.
- 1.1.6 Monitor and support the new laboratory logistics system with quarterly reviews.
- 1.1.7 Plan a logistics unit for laboratory services in harmony with existing vertical programs.
- 1.1.8 Hire human resource for logistic unit.
- 1.1.9 Procure office equipment and supplies to support the logistic unit activities.

Strategic Initiative 1.2: Harmonize procurement and distribution for integrated laboratory services.

- 1.2.1 Conduct National physical inventory for all laboratory commodities.
- 1.2.2 Conduct equipment mapping for all sites.
- 1.2.3 Conduct a forecasting and quantification of laboratory reagents and supply.

Strategic Initiative 1.3: Provide supply chain management training to both pre-service and in-service laboratory scientist.

- 1.3.1 Develop supply chain curriculum for laboratory commodities and train laboratory personnel.

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Strategic Initiative 1.4: Provide support for strengthening Natpharm (central stores) specifically for integrating laboratory commodity storage, cold chain and refrigerated vehicles.

- 1.4.1 Support Natpharm to procure 3 refrigerated vehicles for cold chain management of laboratory supplies.
- 1.4.2 Develop specifications for Natpharm warehouses to store laboratory supplies.
- 1.4.3 Disseminate and implement specifications to all storage facilities for laboratory supplies (All Natpharm warehouses)

STRATEGIC OBJECTIVE 2: Establish a Biomedical Engineering Unit (BEU) for Preventive and Corrective Maintenance.

Strategic Initiative 2.1: Create a BEU to maintain and service all laboratory equipment in the tiered network.

- 2.1.1 Create a biomedical engineering unit that will service and maintain laboratory equipment.
- 2.1.2 Create a database of all existing equipment in the tiered network both functional and non functional.
- 2.1.3 Identify essential equipments requiring specialized training.
- 2.1.4 Create incentives for existing cadre of engineers for positions at the national level for the BEU.
- 2.1.5 Make the unit operational through the provision of a base office and connecting sub offices.
- 2.1.6 Establish tiered services maintenance network.
- 2.1.7 Make provisions for vehicles and fuel allowance as well as funding for spare parts.
- 2.1.8 Identification of International Training Course for biomedical engineers for refresher trainings and ongoing personnel development to improve maintenance services.
- 2.1.9 Engage one MOH contract to rehabilitate all existing equipment in the system donor/non donor.

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Strategic Initiative 2.2: Conduct National trainings of laboratory staff in appropriate application of preventive and corrective laboratory maintenance.

2.2.1 Develop and integrate SOPs for preventive and corrective maintenance in the National Laboratory SOPs.

2.2.2 Develop and integrate the preventive and corrective maintenance module in the training manuals for both pre-service and in-service training.

2.2.3 Conduct Training of appropriate laboratory personnel on use, preventive and corrective maintenance of equipment.

Strategic Initiative 2.3: Create and implement a laboratory policy for environmentally safe disposal of laboratory equipment.

2.3.1 Review, consolidate and develop safety disposal guidelines for laboratory equipment.

2.3.2 Disseminate safety disposal guidelines for non functional laboratory equipment.

2.3.3 Train on implementation of guidelines.

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Policy, Legal and Regulatory Framework

ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIMEFRAME (2010-2014)				
				10	11	12	13	14
STRATEGIC OBJECTIVE 1: Strengthen Legal and Regulatory Framework								
STRATEGIC INITIATIVE 1. 1: Strengthen the legal and regulatory framework to support implementation of the national regulatory framework & quality systems.								
1.1.1. Conduct a situation analysis of MLCSCZ and its functions	Resources available for MLCSCZ to implement its functions.							
1.1.2. Mobilize resources for the implementation of the functions of MLCSCZ	Report on gaps identified							
1.1.3. Develop Continuous Professional Development (CPD) point system	CPD point system developed & implemented							
1.1.4. Mandate minimum CPD points as a pre-requisite for registration of laboratory personnel.	CPD point system mandated.							
1.1.5. Mandate laboratory participation in a PT programme as a pre-requisite for registration of laboratories	Participation in PT mandated							
1.1.6. Rationalize regulatory body subscription fees to be cognizant of professional salaries.	Realistic registration fees							
1.1.7. Strengthen the capacity of laboratories to be certified institutions in accordance to national guidelines.	All public & private labs certified by 2010							
1.1.8. Strengthen the capacity of laboratories to be accredit in accordance to ISO 15189 by forming an accreditation body	Accreditation body formed							
1.1.9. Strengthen the system to evaluate, certify and register laboratory personnel.	All lab personnel registered.							

LABORATORY SERVICES OF ZIMBABWE

ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIMEFRAME (2010-2014)				
1.1.10. Expedite the approval of national standards for laboratories.	National standards in place							
1.1.11. Disseminate national standards for laboratory.	All labs aware of the national standards							
1.1.12. Develop a monitoring system to ensure laboratory equipment, reagents & kits conform to nationally established standards.	Monitoring system in place							
1.1.13 Develop standards for the relevant areas engaged in clinical and surveillance services such as environmental health, food safety and research	Universal Standards in place.							
1.1.14 Strengthen and promote Quality Assurance (QA) and Continuous Quality Improvement (CQI) programmes for laboratory services validated by a number of laboratories in compliance with the relevant standards for operation	QA & CQI implemented by all labs by 2010							
STRATEGIC OBJECTIVE 2: Laboratory Institutional and Management Frame work: Develop the administrative and technical management structure of the national reference, central, provincial and district laboratories								
STRATEGIC INITIATIVE 2. 1 Strengthen linkages between the National reference laboratories, central, provincial and district laboratories to the Director of laboratory services, MOHCW								
2.1.1 Revise the national laboratory system organogram	Revised organogram							
2.1.2 Hire the necessary personnel to strengthen the administrative and technical management structure of the laboratory directorate	Organogram approved, adopted and disseminated							

LABORATORY SERVICES OF ZIMBABWE

ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIMEFRAME (2010-2014)					
2.1.3 Develop operation manuals for different levels of management, based on the revised organogram	Job descriptions developed								
STRATEGIC INITIATIVE 2. 2 Designate key leadership positions at different levels									
2.2.1 Develop clearly defined management positions at different levels	Management positions in place								
2.2.2 Develop descriptive roles and responsibilities for the different levels of laboratory staff	Roles and responsibilities developed and functioning								
2.2.3 Establish a key laboratory technical representative for various programmatic areas at all levels	Assigned personnel attending appropriate foray								
STRATEGIC INITIATIVE 2.3 Revise an organizational chart for the national reference, central, provincial and district laboratories									
2.3.1 Revise and develop clearly defined charts of the various levels of responsibility at all levels	Revised charts approved and adopted								
STRATEGIC INITIATIVE 2.4 Revive the National Laboratory Technical Advisory Committee to provide linkages to programs and partners to support the National Strategic Plan for laboratories									
2.4.1 Compose a Terms of Reference for the National Technical Advisory Committee to support the laboratory services in its role in the health sector	Linkages developed through Technical Committee for laboratory services to programs and partners								

LABORATORY SERVICES OF ZIMBABWE

ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIMEFRAME (2010-2014)				
STRATEGIC INITIATIVE 2.5 Assure Adequate Financial Resources To Sustain Quality Laboratory Services And Create Proper Planning Mechanism At Each Level.								
2.5.1 Develop comprehensive annual budgets that include all available funding	Specific donor support (funding) identified for national laboratory services each year and budget available							
2.5.2 Financial review with provinces and work plans with budgets to be submitted by provincial laboratory manager/s to assist annual budget	Financial review report							
2.5.3 Canvas for laboratories to have a separate line item in the district and provincial hospital budget	Line item in district and provincial budget for laboratories							
STRATEGIC INITIATIVE 2.6 Promote collaboration between laboratory and hospital management								
2.6.1 Participation of laboratory personnel in hospital management meetings and vice versa, especially for budget planning	Participation in management meetings							
STRATEGIC INITIATIVE 2.7 : Strengthen and promote coordination among all laboratories in country to prepare and respond to disease threats								
2.7.1 Create a Laboratory Partnership Forum to improve communication and encourage collaboration for integrated disease surveillance, preparedness and response to disease threats	Active Laboratory Partnership Forum							

LABORATORY SERVICES OF ZIMBABWE

Laboratory Services

ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIME FRAME (2010-2014)				
				10	11	12	13	14
STRATEGIC OBJECTIVE 1 To improve capacity for diagnostic services through integrated laboratory services.								
STRATEGIC INITIATIVE 1. 1 Strengthen the tiered laboratory services								
1.1.1 Conduct consultative meetings with all program heads to identify testing requirements for current year and projections for the next five years (# of patients, # of tests, personnel and associated costs)	Meetings held and requirements identified							
1.1.2 Directorate to develop and implement plans for procurement, hiring, training, quality assurance, sample referral system etc. to ensure reliable laboratory services	Integrated plan for laboratory services to respond to HIV/TB/Malaria/EID/PMTC T/STI/Communicable and non communicable diseases implemented							
1.1.3 Conduct quarterly feedback meetings with all laboratory staff and stakeholders.	Feed back meetings held							
1.1.4 Conduct annual review of plans and re strategies to suit current situation	Annual review report							

LABORATORY SERVICES OF ZIMBABWE

ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIMEFRAME (2010-2014)				
STRATEGIC INITIATIVE 1. 2 Standardize laboratory testing Services								
1.2.1 Review existing situation analysis and recent laboratory assessments to analyze capacities for human resource, infrastructure, equipment and services provided to identify gaps in the system with an aim to strengthen service provision	Laboratory services improved							
1.2.2 The competences of staff to perform the different tests will be based on the qualification and expertise standards as determined by MOHCW (Annex 4) through a registration with MLCSCZ to address staff irregularities in testing services provided	Competent staff providing testing services at all levels according to register							
1.2.3 Revise and update standardized test menus guidelines for tier services (Annex 3)	Revised test menus							
1.2.4 Disseminate approved guidelines for standard test menu(s) to all laboratories	Test menus approved and disseminated							
1.2.5. List commodity requirements for the test menus to assist with annual budget planning	Commodity requirements for test menu available							
1.2.6 Review the minimal laboratory equipment requirements for each level of health care to develop a standardized document (Annex 2)	Standardized equipment document							
1.2.7 Procure equipment and distribute according to testing complexity at each level. (The type of equipment applicable at each level of testing with current test menu is listed in Appendix II)	Each testing level will have appropriate testing equipment							

LABORATORY SERVICES OF ZIMBABWE

ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIMEFRAME (2010-2014)					
1.2.8 Develop and implement a plan to enhance the capacity for standardized laboratory testing	Plan for enhancing standardized laboratory testing								
STRATEGIC INITIATIVE 1.3 Strengthen national specimen referral and result reporting system.									
1.3.1. Develop guidelines for specimen referral and reporting	Guidelines developed								
1.3.2 Dissemination of referral and reporting guidelines	Guidelines available								
1.3.3 Training of trainers , orientation and implementation of a national specimen referral and reporting system for the entire laboratory network	Referral system improved								
1.3.4 Roll out of training to the entire tiered system of laboratories	All handlers trained								
1.3.5 A system for reliable and safe sample collection, transport and delivery will be established for all sites that require test to be conducted at other laboratories	Referral service available								
STRATEGIC INITIATIVE 1.4 Strengthen the National Reference Laboratories to play their role in the public and health sector									
1.4.1. Develop and implement a national comprehensive plan for specialized laboratory tests (e.g. CD4, viral load, PCR for HIV, communicable and non-communicable diseases including TB and Malaria) at the National Microbiology Reference Laboratory.	National comprehensive plan for specialized laboratory tests implemented								

LABORATORY SERVICES OF ZIMBABWE

ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIME FRAME (2010-2014)				
1.4.2 Support for expansion of NMRL into a multi disciplinary reference laboratory	NMRL as a multidisciplinary laboratory							
1.4.3 Continued participation of NMRL, NVRL and NTRL in EQA's for their respective line of work	Continuous Participation of National Reference Laboratories in EQA's							
1.4.4 Enrollment of NRLs in EQA's for areas of non participation but part of their service package	New enrollments achieved							
1.4.5 Strengthen the NRL's to provide laboratory services for evidence based disease surveillance and response in accordance with the WHO-AFRO guidelines on IDSR	NRL's providing disease surveillance and response							

LABORATORY SERVICES OF ZIMBABWE

Human Resources

ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIME FRAME (2010-2014)				
				10	11	12	13	14
STRATEGIC OBJECTIVE 1 To strengthen and standardize pre- qualification and in service training programs for laboratory personnel.								
STRATEGIC INITIATIVE 1. 1 Through the laboratory directorate coordinate pre - qualification and in-service training								
1.1.1 Campaign through career guidance in high schools throughout the country for careers in laboratory sciences	Campaigns conducted							
1.1.2. Conduct partnership forum for donors and educational institutions to come together for funding of scholarships	For a established							
1.1.3. Review curricular for training institutions and leverage support for stationery, training equipment and tutor compensation	Revived curricular and institutions							
1.1.4. Establish an education program for in service personnel to improve testing services	Education program available							
1.1.5. Improve laboratory skills in existing non- qualified/ acting laboratory personnel e g. laboratory assistants/microscopists through a mentorship program among laboratories.	Mentorship program in place							
1.1.6 Send laboratory supervisors for management training to improve administration skills	Mangers trained							
1.1.7 Avail opportunities for laboratory staff at all levels to attend workshops, conferences and other forums.	Number of staff attending workshops/for a							

LABORATORY SERVICES OF ZIMBABWE

ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIMEFRAME (2010-2014)				
STRATEGIC OBJECTIVE 2 To improve laboratory personnel recruitment and motivation, achieve the retention through career path development, progression, and welfare.								
STRATEGIC INITIATIVE 2. 1 Develop a career path for Laboratory professionals								
2.1.1 Design and develop a career path for laboratory staff	Career path designed and adopted							
2.1.2 Improve welfare of laboratory personnel to retain and encourage new recruitment	National laboratory personnel staffing percentage increased							
2.1.3 Establish temporary measure cadres e.g. SCMLT's for continued laboratory testing services	SCMLT 's available to work							

LABORATORY SERVICES OF ZIMBABWE

COMMUNICATION

ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIME FRAME (2010-2014)				
STRATEGIC OBJECTIVE 1 Create and strengthen centralized interactive system of communication for effective collection and analysis of laboratory data				10	11	12	13	14
STRATEGIC INITIATIVE 1.1 Establish and implement an electronic Laboratory Information Management System (LIMS) for National Laboratory Services								
1.1.1 Assess and Develop User Requirement for an electronic Laboratory Information Management System (LIMS)	Specifications for LIMS established							
1.1.2 Develop information system that include standardized data collection tools and user manuals	Data collection tools and user manuals in place							
1.1.3 Print data forms and manuals	Forms and manuals printed							
1.1.4 Conduct training in the use of laboratory information tools	Laboratory scientist trained							
1.1.5 Procure of LIMS software vendor to include service contracts	LIMS Vendor selected							
1.1.6 Conduct training in relevant software for laboratory scientists	Laboratory scientist trained							
1.1.6 Conduct training in relevant software for laboratory scientists	Laboratory scientist trained							

LABORATORY SERVICES OF ZIMBABWE

ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIME FRAME (2010-2010)				
1.1.8 Procure an Internet Service Provider and installation of appropriate Servers. Establish communication facilities including internet within the laboratory to facilitate regular reporting and communication	Server installed Laboratories Networked							
1.1.9 Conduct in-service training of laboratory scientists for computer literacy in preparation for LIMS	Laboratory scientist trained							
1.1.10 Pilot LIMS in selected diagnostic centers: Installation and training of LIMS by the vendor in the selected pilot sites	LIMS software in the Server; LIMS competent lab techs in place; LIMS modules operational in pilot labs							
1.1.11 Evaluate the functionality of the pilot LIMS	Performance of LIMS determined							
STRATEGIC INITIATIVE 2. 2 Scale-up LIMS to other laboratories								
2.2.1 Additional sites and gaps identified for LIMS.	LIMS modules operational in laboratories							
2.2.2 Install and maintain laboratory data bases	Data bases established							
2.2.3 Evaluate LIMS	Performance of LIMS determined							
STRATEGIC OBJECTIVE 2 To develop an effective National Monitoring and Evaluation system which will measure the delivery of quality laboratory services in the tiered network								
STRATEGIC INITIATIVE 2.1 Develop and Implement M&E tools to assess laboratory services								
3.1.1 Establish a laboratory Monitoring and Evaluation Training Advisory Committee	Lab M&E status determined					-		

LABORATORY SERVICES OF ZIMBABWE

ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIME FRAME (2010-2010)				
3.1.2 Review existing laboratory M&E Framework	An integrated lab M&E framework							
3.1.3 Develop laboratory M&E Framework in alignment with the national M&E plan	M&E program							
3.1.4 Develop an M&E training program	Advisory committee active							
3.1.5 Develop indicators for M&E laboratory services	Indicators developed							
3.1.6 Establish and implement detailed M&E procedures	Procedures developed							
3.1.7 Procurement of tools needed for the implementation of M&E system.	Procurement of tools							
3.1.8 Train all Laboratory Scientists in the use of M&E procedures and tools	Laboratory Scientists trained							
2.19 Make provisions for laboratory service vehicles in order to improve support and supervision, monitoring and evaluation and other laboratory activities	Laboratory vehicles available							

LABORATORY SERVICES OF ZIMBABWE

Quality Management System

ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIME FRAME (2010-2010)				
STRATEGIC OBJECTIVE 1 Enhance the Laboratory Quality Assurance To Achieve Accurate, Precise And Reliable Medical Laboratory Results In A Timely And Cost-Effective Manner				10	11	12	13	14
				STRATEGIC INITIATIVE 1. 1 Review existing Quality Assurance System and documents (SOPS, standards and internal materials) as the basis for the development and dissemination of a national QA manual				
1.1.1 Reviewing key existing QA system and documents and produce a report	Review held							
1.1.2 Development of a National QA Manual that integrates all laboratory disciplines (TB, HIV, Malaria, Parasitology, Biochemistry etc)	National QA Manual developed							
1.1.3 Pilot National QA manual at Central, Provincial and District level	Pilot across the tiered network							
1.1.4. Review and finalize QA manual after pilot	QA Manual							
1.1.5. Print and disseminate QA manuals to the laboratory network for implementation	Workshop held for dissemination							
1.1.6 Implement National QA manual	National QA manual being used							

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ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIME FRAME (2010-2010)				
STRATEGIC INITIATIVE 1. 2 Develop & implement standardized training programmes for laboratory quality management.								
1.2.1 Re-introduce national QA and enroll labs in certification programmes	National QA re-introduced							
1.2.2 Employ & train QA managers	QA Managers in post							
1.2.3 Evaluate the National EQA Programmes to identify gaps & challenges in the EQA programmes.	EQA programmes evaluation document							
1.2.4 Address gaps & challenges to the EQA programmes	Gaps and challenges being addressed							
STRATEGIC INITIATIVE 1.3 Develop and implement an integrated national EQA system based on the National QA manual for all laboratory disciplines that are established according to international standards								
1.3.1 Strengthen EQA services to look at all testing disciplines and provide EQA PT panels for all laboratories	EQA system established							
1.3.2 Recruit and train 8 Heads of Sections , 1 National QA Coordinator and 8 Laboratory Scientists/yr based on the QA framework (Serology , Immuno-Hematology, Parasitology, Biochemistry, Molecular Biology, Bacteriology (TB), Histopathology, Virology)	Staff recruited							
1.3.3 Establish capacity to disseminate QC materials	QC materials readily available							

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ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIME FRAME (2010-2010)				
STRATEGIC OBJECTIVE 2 Assure That All Laboratory Activities Are Performed According To National Safety Standards								
STRATEGIC INITIATIVE 2. 1 Develop, disseminate and implement a National Safety Guideline for safe laboratory practices and a safe work environment (Infection Control, fire control, waste disposal, BSL, etc).								
2.1.1 Review existing laboratory safety guidelines and documentations	Reviewed documents							
2.1.2 Print and disseminate safety guidelines	Printed guidelines							
2.1.3 Implement a National Laboratory Safety training module for pre and in service training/s	Safety Training module available							
2.1.4 Establish a national safety committee responsible for performing safety audits in laboratories	National safety committee							

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SCMS & Maintenance

ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIME FRAME (2010-2014)				
				10	11	12	13	14
STRATEGIC OBJECTIVE 1 Ensure proper and timely laboratory reagent and supplies procurement and distribution								
STRATEGIC INITIATIVE 1. 1 Design and implement a laboratory logistics system								
1.1.1 Conduct a laboratory logistics system design workshop for strategies to build capacity in procurement planning, warehousing and distribution system	Laboratory logistics system							
1.1.2 Pilot the designed logistic system, review the pilot laboratory logistics system	Piloted and reviewed logistics system							
1.1.3 Develop standard operating procedures and training curriculums for the newly developed logistics system	SOP's and curriculums developed							
1.1.4 Train appropriate staff on the new laboratory logistics system	Training conducted							
1.1.5 Procure computers to support new laboratory logistics system	Computers available							
1.1.6 Monitor and support the new laboratory logistics system with quarterly reviews	Quarterly M&E reviews							
1.1.7 Plan a logistics unit for laboratory services in harmony with existing vertical programs.	Logistic unit development plan							
1.1.8 Hire human resource for logistic unit	Logistic unit staffed							
1.1.9 Procure office equipment and supplies to support the logistic unit activities	Office operational							
STRATEGIC INITIATIVE 1. 2 Harmonize procurement and distribution for integrated laboratory services								
1.2.1 Conduct National physical inventory for all laboratory commodities	Inventory available							
1.2.2 Conduct equipment mapping for all sites	Equipment map available							

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ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIME FRAME (2010-2014)					
1.2.3 Conduct a forecasting and quantification of laboratory reagents and supply	Quantification available								
STRATEGIC INITIATIVE 1. 3 Provide supply chain management training to both pre-service and in-service									
1.3.1 Develop supply chain curriculum for laboratory commodities and train laboratory personnel	Curriculum developed								
STRATEGIC INITIATIVE 1.4 Provide support for strengthening Natpharm (central stores) specifically for integrating laboratory commodity storage, cold chain and refrigerated vehicles									
1.4.1 Support Natpharm to procure 3 refrigerated vehicles for cold chain management of laboratory supplies	Refrigerated Vehicles available								
1.4.2 Develop specifications for Natpharm warehouses to store laboratory supplies	Specifications developed								
1.4.3 Disseminate and implement specifications to all storage facilities for laboratory supplies (All NATPHARM warehouses)	Specifications disseminated and implemented								
STRATEGIC OBJECTIVE 2 Establish a Biomedical Engineering Unit for Preventive And Corrective Maintenance									
STRATEGIC INITIATIVE 2. 1 Create a BEU to maintain and service all laboratory equipment in the tiered network									
2.1.1 Create a biomedical engineering unit that will service and maintain laboratory equipment	BEU created and functional								
2.1.2 Create a database of all existing equipment in the tiered network both functional and non functional.	Database operational								
2.1.3 Identify essential equipments requiring specialized training	Equipment identified								

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ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIME FRAME (2010-2014)				
2.1.4 Create incentives for existing cadre of engineers for positions at the national level for the BEU.	Biomedical engineers hired							
2.1.5 Make the unit operational through the provision of a base office and connecting sub offices	Offices available							
2.1.6 Establish tiered services maintenance network	Network of maintenance services established							
2.1.7 Make provisions for vehicles and fuel allowance as well as funding for spare parts	All commodities available							
2.1.8 Identification of International Training Course on biomedical engineering for refresher trainings and ongoing personnel development	Engineers trained yearly							
2.1.9 Engage one MOH contract to rehabilitate all existing equipment in the system donor/ non donor.	Contract issued							
STRATEGIC INITIATIVE 2. 2 Conduct National trainings of laboratory staff in appropriate application of preventive and corrective laboratory maintenance								
2.2.1 Develop and integrate SOPs for preventive and corrective maintenance in the National laboratory SOPs	SOP's available							
2.2.2 Develop and integrate the preventive and corrective maintenance module in the training manual for both pre-service and in-service training	Training manual available							
2.2.3 Conduct Training of appropriate laboratory personnel on use, preventive and corrective maintenance of equipment	Laboratory staff trained							
STRATEGIC INITIATIVE 2. 3 Create and implement a laboratory policy for environmentally safe disposal of laboratory equipment								
2.3.1 Review, consolidate and develop safety disposal guidelines for laboratory equipment	Guidelines available							

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ACTIVITIES	PERFORMANCE INDICATORS	BUDGET	SOURCE OF FUNDS	TIME FRAME (2010-2014)				
2.3.2 Disseminate safety disposal guidelines for non functional laboratory equipment	Guidelines disseminated							
2.3.3 Train on implementation of guidelines	Trainings conducted							

LABORATORY SERVICES OF ZIMBABWE

APPENDICES

Appendix 1: Distribution of Public Health Facilities by Level of Care (NHIU-MOHCW 2006)

<i>Level Of Care</i>					
	Primary Level	1st Referral Level	2nd Referral Level	3rd Referral Level	<i>Total</i>
Harare	45	0	0	7	52
Manicaland	253	36	1	0	290
Mashonaland Central	130	13	1	0	144
Mashonaland East	168	22	1	0	191
Mashonaland West	128	22	1	0	151
Matabeleland North	92	17	0	0	109
Matabeleland South	105	18	1	0	124
Midlands	206	28	1	0	235
Masvingo	170	23	1	0	194
Bulawayo	34	0	0	7	41
Grand Total	1331	179	7	14	1531

Key:

Primary Level:	Clinics and rural health centers
1st referral level:	District, mission and rural hospitals
2nd referral level:	Provincial hospitals
3rd referral level:	Central hospitals and infectious diseases hospitals

LABORATORY SERVICES OF ZIMBABWE

Appendix II: Minimum Laboratory Equipment Required for Each level of Health Care

Equipment	Rural	District	Provincial	Central	NMRL	NTBRL	NVRL	NBSZ
Histology Equipment				X				
Equipment								
Anaerobic, aerobic and CO2 incubators		X	X	X	X	X	X	X
CO2 jars		X	X	X	X	X	X	X
Bench top autoclave (Media)		X	X			X	X	X
Autoclave (Sterilization)		X	X	X	X	X	X	X
Autoclave large floor standing (Media)		X	X	X	X	X	X	X
Blood bank fridge		X	X	X				X
Blood tube roller/mixer		X	X	X	X		X	X
Bunsen burner (with LPG gas)		X	X	X	X	X	X	X
CD4/CD8 instrument		X	X	X				
Centrifuge (Minimum 12 tube)		X	X	X	X	X	X	X
Chemistry analyzer		X	X	X				
Chromatography equipment				X				
Computer with LIS		X	X	X	X	X	X	X
Printer		X	X	X	X	X	X	X
Distillation unit		X	X	X	X	X	X	X
Electrophoresis Equipment				X	X			
Elisa equipment			X	X	X		X	X
ELISA /washer			X	X	X		X	X
ELISA /Reader			X	X	X		X	X
ELISA/incubator			X	X	X		X	X
ELISA/printer			X	X	X		X	X
Ion Selective Electrode		X	X	X				
Freezer (-20 degree Celsius)		X	X	X	X	X	X	X
Freezer (-80 degree Celsius)				X	X	X	X	X
Fridge (2-8 degree Celsius)	X	X	X	X	X	X	X	X
Glucometer		X	X					
Haematocytometer (counting chamber)		X	X	X				
Haematology Analyzer		X	X	X				X
Hot air oven		X	X	X	X	X	X	X

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Equipment	Rural	District	Provincial	Central	NMRL	NTBRL	NVRL	NBSZ
Hot plates		X	X	X	X	X	X	X
Incubator (35o -37o C)		X	X	X	X	X	X	X
Incubator low temp	X	X	X	X	X	X	X	X
Laboratory Information System		X	X	X	X	X	X	X
Micropipettes/single channel (5-50 microliters)		X	X	X	X	X	X	X
Micropipettes/single channel (50-100 microliters)		X	X	X	X	X	X	X
Micropipettes/single channel (100-1000 microliters)		X	X	X	X	X	X	X
Micropipettes/multi-channel (20-100 microliters)		X	X	X	X	X	X	X
Micropipettes/multi-channel (50-300 microliters)		X	X	X	X	X	X	X
Microscope Binocular	X	X	X	X	X	X	X	X
Microscope Fluorescent			X	X	X	X	X	
RPR rotator		X	X	X	X			X
Generator		X	X	X	X	X	X	X
Solar system	X	X	X					
Water tank	X	X	X	X	X	X	X	X
Biological Safety Cabinet Class 1		X	X	X		X	X	X
Biological Safety Cabinet Class 11		X	X	X	X	X	X	
Surge Protect bars		X	X	X	X	X	X	X
Timer		X	X	X	X	X	X	X
Tally counter		X	X	X	X			
Tally Counter (differential)		X	X	X	X			
Vortex mixer		X	X	X	X	X	X	X
Uninterrupted power supply 1Kva		X	X	X	X	X	X	X
Uninterrupted power supply 2Kva		X	X	X	X	X	X	X
Water bath		X	X	X	X	X	X	X
Weighing balance (analytical)		X	X	X	X	X	X	X
Weighing balance (non-analytical)		X	X	X	X	X	X	X
Blood grouping			X	X				X
PCR			X	X	X		X	X

LABORATORY SERVICES OF ZIMBABWE

Appendix III. List of Tests for Each Level of Health Care

Laboratory Tests	Rural	District	Provincial	Central	NMRL	NTBRL	NVRL	NBSZ
Haematology								
Haemoglobin		X	X	X	X			X
Differential white cell count		X	X	X	X			X
Peripheral blood film		X	X	X	X			X
Platelet Count		X	X	X	X			X
Sickle Cell Test		X	X	X				
Reticulocyte Count				X	X			
MCHC		X	X	X	X			X
PCV		X	X	X	X			X
Full Haemogram (blood count)		X	X	X	X			X
Clotting Time				X				X
Bleeding Time				X				
Prothrombin Time			X	X				
Partial Thromboplastin Time			X	X				
Thrombin Time				X				
LE Test				X				
Heinz bodies			X	X				
ESR		X	X	X				
Transfusion Medicine:								
ABO & Rh Grouping		X	X	X				X
Blood Transfusion Collection, Screening, Storage								X
Compatibility Testing		X	X	X				X
		X	X	X				X
Antibody Screening								X
Whole blood			X	X				X
Packed cells		X	X	X				X
Antibody titrations		X	X	X				X
Bacteriology:								
Gram Stain		X	X	X	X			X
Ziehl Nielsen Stain	X	X	X	X	X	X		
Potassium Hydroxide Preps		X	X	X	X			
Wet Preparation		X	X	X	X			

LABORATORY SERVICES OF ZIMBABWE

		X	X	X				
Laboratory Tests	Rural	District	Provincial	Central	NMRL	NTBRL	NVRL	NBSZ
Urine Microscopy		X	X	X				
Stool Culture		X	X	X	X			
Urine Culture		X	X	X	X			
Pus swabs		X	X	X	X			
Serous Fluid Culture		X	X	X				
CSF Culture		X	X	X	X			
Sensitivity Testing		X	X	X	X			X
Examination of Aspirates		X	X	X	X			
Blood culture		X	X		X			X
Mycology								
Water Analysis(faecal coli forms)			X	X	X			
TB Culture & sensitivity					X	X		
Clinical chemistry:								
Urinalysis		X	X	X				
Blood Glucose		X	X	X				
Total Protein		X	X	X				
Albumin/Globulin Ratio		X	X	X				
Total and Direct Bilirubin		X	X	X				
Electrolytes		X	X	X				
Alkaline Phosphatase		X	X	X				
Aspartate Transferase (SGOT)		X	X	X				
Alanine Transferase (SGPT)		X	X	X				
Creatinine		X	X	X	X			
Calcium			X	X				
Uric acid			X	X				
Occult Blood								
Blood Urea Nitrogen								
Cholesterol		X	X	X	X			
Glucose Tolerance Test		X	X	X				
Blood gases				X	X			
Lactate dehydrogenase				X				
Creatine phosphokinase				X				
Serum & Urine Amylase			X	X				
Gamma GT		X	X	X				
Lipid profile			X	X				
High Density Lipoprotein (HDL)			X	X				

LABORATORY SERVICES OF ZIMBABWE

Laboratory Tests	Rural	District	Provincial	Central	NMRL	NTBRL	NVRL	NBSZ
Low Density Lipoprotein (LDL)			X	X				
Thyroid Function Tests				X				
Prostate Specific Antigen (PSA)				X	X			
Magnesium			X	X				
Neonatal screening				X				
Toxicology					X			
Tumour markers					X			
Hormone assays				X	X			
Cardiac Profile				X	X			
Foetal maternal studies				X	X			
Blood Gas analysis				X	X			
Parasitology:								
Stool o/c								
Blood Slide for Malaria & other parasites	X	X	X	X	X			
Urine Microscopy		X	X	X				
Rapid Test for malaria	X	X	X	X	X			
Serology:								
Pregnancy Test		X	X	X				
Syphilis Screening		X	X	X	X			X
HIV ELISA			X	X	X			X
HIV rapid	X	X	X	X	X			X
DBS for referral	X	X	X	X	X			
Widal Test		X	X	X				
ASOT		X	X	X				
Hepatitis B Virus Screening		X	X	X				X
Hepatitis C Virus screening			X	X				X
Rheumatoid factor		X	X	X				
CD4/CD8 Counts		X	X	X				X
Brucella Test				X				
Semen analysis		X	X	X				
PCR				X	X	X	X	X
Virology								
Rotavirus							X	
Measles							X	
Torch screen							X	
Histopathology/cytology:								
				X				

LABORATORY SERVICES OF ZIMBABWE

Laboratory Tests	Rural	District	Provincial	Central	NMRL	NTBRL	NVRL	NBSZ
Cytological examination of fluids				X				
Cytological examination of aspirates				X				
Histological examination of Tissues				X				
Frozen Sections				X				
Biopsy				X				
Biopsy with Special Stain				X				

Appendix V. The competences of staff to perform the required tests at different tiers

Type Of Cadre	Rural	District	Province	Central	Reference	NBSZ
Microscopist	X	X				
SCMLT/SCBBT		X				X
MLS		X	X	X	X	X
Specialist			X	X	X	X
Clinical Scientists				X	X	