NATIONAL HEALTH
LABORATORY SERVICE

ANNUAL REPORT

2022-2023

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NATIONAL HEALTH LABORATORY SERVICE

FINANCIAL HIGHLIGHTS (2022–2023)

The NHLS maintained an unqualified audit report for the **2022-2023** financial year.

The NHLS creditors' days have decreased to **34 days**.

The NHLS total assets increased from a restated **R7.8 billion** to **R10.5 billion**.

The NHLS' current liabilities have decreased from a restated **R2.2 billion** to **R1.9 billion.**

NHLS generated a surplus of **R3.2 billion** for the financial year. This is primarily driven by the recalculation of the provision for doubtful debt in line with the new accounting framework (GRAP104).

Cashflow has improved and the cashflow ratio is 6:1, which represents cash reserves for six **(6) months**

NON-FINANCIAL HIGHLIGHTS (2022–2023)

The pass rate of registrars training to be pathologists has been increasing for the Colleges of Medicine in South Africa Part I examinations, from **68%** (2018) to **78%** in the year under review.

The National Cancer Registry was designated as the collaborating centre for childhood cancers and monitoring cervical cancer elimination in Sub- Saharan Africa by the International Agency for Global Initiative for Cancer Registry (GICR) development.

The NHLS Board has **approved a number of major tenders** to procure modern laboratory equipment and other items to enhance the facilities and ensure the organisation successfully delivers on its mandateon its mandate.

The count of test volumes administered increased from **106 million** in the 2021-2022 fiscal year to **110 million** in the 2022-2023 fiscal year, signifying a noteworthy **4%** increase in tests.

TB test volumes increased by **17%** due to implementation of the TB recovery plan, which addressed the gaps incurred during lockdown measures in response to the COVID-19 pandemic.

The NHLS published **664 articles** in peer-reviewed journals in the year under review.

The NHLS achieved an impressive milestone with **96% (277 links)** of its sites successfully cutting over into MTN Multiprotocol Label Switching (MPLS), significantly increasing bandwidth and improving connectivity.

NICD continued to play a pivotal role in ensuring swift interventions regarding communicable **disease outbreaks such as cholera, typhoid fever, and measles** in South Africa.

Internal Audit function achieved General Conformance to the Quality Assurance and Improvement programme, perfectly integrating with the prestigious International Professional Practise Framework (IPPF) pillars.

OHASIS continues to be a valuable monitoring and management information tool assisting with health and safety compliance, health case management and **hazardous waste tracking**. In addition, it provides a platform for health, safety and environment incident reporting and investigation.

PART A

GENERAL INFORMATION

GENERAL INFORMATION

Registered name:	National Health Laboratory Service (NHLS)
Legal status:	Schedule 3A Public Entity
Practice number:	PR5200296
Registered office	1 Modderfontein Road, Rietfontein, Sandringham,
Address:	Johannesburg, 2000
Postal address:	Private Bag X8 Johannesburg 2131
Telephone number:	011 386 6000
Email address:	enquiries@nhls.ac.za
Website address:	http://www.nhls.ac.za
Company Secretary:	Adv Mpho Mphelo
External auditors:	Nexia SAB&T and Auditor General of South Africa
Bankers:	First National Bank Limited, Rand Merchant Bank Limited, Investec Limited and Nedbank Limited

ABBREVIATIONS AND ACRONYMS

AAR	Academic Affairs and Research
AARQA	Academic Affairs, Research and Quality Assurance
AFP	Acute Flaccid Paralysis
AGSA	Auditor-General of South Africa
AIA	Approved Inspection Authority
AIDS	Acquired Immune Deficiency Syndrome
AMR	Antimicrobial Resistance
APCA	Anti-parietal Cell Antibody
APEC	Anatomical Pathology Expert Committee
APP	Annual Performance Plan
ARC	Audit and Risk Committee
ART	Antiretroviral Therapy
ARV	Antiretroviral
ASLM	African Society for Laboratory Medicine
BLUC	Blood and Laboratory User Committee
CANSA	Cancer Association of South Africa
CCMA	The Commission for Conciliation, Mediation and Arbitration
CD4	Cluster of Differentiation 4
CDC	Centers for Disease Control and Prevention
CDW	Central Data Warehouse
CED	Centre for Enteric Diseases
CEO	Chief Executive Officer
CEZPD	Centre for Emerging Zoonotic and Parasitic Diseases
CHARM	Centre for Healthcare-Associated Infections and Antimicrobial Resistance
CHBAH	Chris Hani Baragwanath Academic Hospital
CHC	Community Healthcare Centre
CHE	Council on Higher Education
CHIVSTI	Centre for HIV and STI

ABBREVIATIONS AND ACRONYMS (CONTINUED)

CIDB	Construction Industry Development Board
CMJAH	Charlotte Maxeke Johannesburg Academic Hospital
CMSA	Colleges of Medicine of South Africa
CoCT	City of Cape Town
CPD	Continuing Professional Development
CPI	Consumer Price Index
CPUT	Cape Peninsula University of Technology
CrAg	Cryptococcal Antigen
CRDM	Centre for Respiratory Diseases and Meningitis
CRF	Case Report Form
CSC	Correctional Services Centres
CSIR	Council for Scientific and Industrial Research
CTB	Centre for Tuberculosis
CU	Comprehensive University
CVI	Centre for Vaccine and Immunology
DBB	Division for Bio Safety
DCS	Dried Culture Spots
DGM	Dr George Mukhari Hospital
DEL	Department of Employment and Labour
DFFE	Department of Agriculture, Forestry and Fisheries
DMP	Diagnostic Media Products
DNA	Deoxyribonucleic Acid
DoH	Department of Health
DPHSR	Division of Public Health Surveillance And Response
DRC	Democratic Republic of Congo
DSI	Department of Science and Innovation
DTM&H	Diploma In Tropical Medicine and Hygiene
EAP	Employee Assistance Programme

ABBREVIATIONS AND ACRONYMS (CONTINUED)

ECHO	Project Extension for Community Healthcare Outcomes
EDCTP	European and Developing Countries Clinical Trials Partnership
EE	Employment Equity
EGK	Electronic Gatekeeping
EID	Early Infant Diagnosis
EOC	Emergency Operations Centre
EQA	External Quality Assessment
EXCO	Executive Management Committee
FBC	Full Blood Count
FCLs	Forensic Chemistry Laboratories
FETP	Field Epidemiology Training Programme
FinCom	Finance Committee
FIND	The Foundation for Innovative New Diagnostics
FPS	Forensic Pathology Service
GERMS-SA	Group for Enteric, Respiratory and Meningeal Disease Surveillance in SA
GFO	Grant Finance Office
GICR	Global Initiative for Cancer Registry
GRAP	Generally Recognised Accounting Practice
GSEC	Governance and Social Ethics Committee
GXP	GeneXpert
HAART	Highly Active Antiretroviral Therapy
HAST	HIV and AIDS/STI/TB
HCF	Health Care Facilities
HCW	Healthcare workers
HHV	Human Herpesvirus
HIV	Human Immunodeficiency Virus
HIV PCR	Human Immunodeficiency Virus - Polymerase Chain Reaction
HIV VL	Human Immunodeficiency Virus Viral Load

ABBREVIATIONS AND ACRONYMS (CONTINUED)

HoD	Head of Department
HPCSA	Health Professions Council of South Africa
HPV	Human Papillomavirus
HTA	Health Technology Assessment
IAEA	International Atomic Energy Agency
IALCH	INkosi Albert Luthuli Central Hospital
IAPC	Institutional Academic Pathology Committees
IARC	International Agency for Research on Cancer
ICOH	International Commission on Occupational Health
ICT	Information and Communications Technology
IEC	International Electrotechnical Commission
ILO	International Labour Organization
IRBA	Independent Regulatory Board for Auditors
ISA	International Standards on Auditing
ISO	International Organization for Standardization
IT	Information Technology
ITIL	Information Technology Infrastructure Library
IVDs	In Vitro Devices (IVDs)
KEH	King Edward VIII Hospital
KPA	Key Performance Area
LabCoP	Laboratory Systems Strengthening Community of Practice
LBC	Liquid-Based Cytology
LIS	Laboratory Information System
LSHTM	London School of Hygiene and Tropical Medicine
MBOD	Medical Bureau for Occupational Diseases
MCDS	Minimum Clinical Data Set
MDO	Missed Diagnostic Opportunity
MDR-TB	Multidrug-resistant Tuberculosis

ABBREVIATIONS AND ACRONYMS (CONTINUED)

MDO	Missed Diagnostic Opportunity
MDR-TB	Multidrug-resistant Tuberculosis
MEC	Member of the Executive Council
MMed	Master of Medicine
MPLS	Multiprotocol Label Switching
MSI	Medical Scientist Interns
MTB	Mycobacterium Tuberculosis
MTBC	Mycobacterium Tuberculosis Complex
MTB/RIF	Mycobacterium Tuberculosis/Rifampicin
NAAT	Nucleic Acid Amplification Test
NAGI	National Advisory Group on Immunization
NAPC	National Academic And Pathology Committee
NAPHISA	National Public Health Institute of South Africa
NCR	National Cancer Registry
NDoH	National Department of Health
NEDLAC	National Economic Development and Labour Council
NHA	National Health Act
NHI	National Health Insurance
NHLS	National Health Laboratory Service
NHRC	National Health Research Committee
NIC	National Influenza Centre
NICD	National Institute for Communicable Diseases
NIH	National Institutes of Health
NIOH	National Institute for Occupational Health
NIP	Namibia Institute of Pathology
NMC	Notifiable Medical Condition
NPP	National Priority Programmes
NTI	National Treasury Instruction
NTT	National Task Team

ABBREVIATIONS AND ACRONYMS (CONTINUED)

OECD	Organisation for Economic Co-operation and Development
OHS	Occupational Health and Safety
PAIA	Promotion of Access to Information Act
PathRed	Pathology Research and Development
PCR	Polymerase Chain Reaction
PEPFAR	The President's Emergency Plan for Aids Relief
PFMA	Public Finance Management Act
PHC	Primary Health Care
PIVOTAL	Professional, Vocational, Technical, and Academic Learning
PMC	Peri-Mining Communities
PMS	Post-Marketing Surveillance
PMTCT	Prevention of Mother-to-Child Transmission
POCT	Point-of-care Testing
POPI	Protection of Personal Information
PPA	Public Audit Act
PPC	Parliamentary Portfolio Committee
PPE	Personal Protective Equipment
PPP	Public Private Partnership
PPPFA	Preferential Procurement Policy Framework Act
PPR	Policyholder Protection Rules
PRECCA	Prevention and Combating of Corrupt Activities Act
PrEP	pre-exposure prophylaxis
PRF	Poliomyelitis Research Foundation
PSC	Plasma Separation Card
PTS	Proficiency Testing Schemes
QA	Quality Assurance
QAD	Quality Assurance Unit
QC	Quality Control
QCA	Quality Compliance Audit

ABBREVIATIONS AND ACRONYMS (CONTINUED)

QMS	Quality Management System
RCoEBB	Regional Centre of Excellence for Biosafety and Biosecurity
R&D	Research and Development
RDDC	Regional Diagnostic Demonstration Centre
RDT	Rapid Diagnostic Test
RfA	Results for Action
RFQ	Request for Quotation
RHRC	Remuneration and Human Resources Committee
RIC	Research and Innovation Committee
RIF	Rifampicin
RSV	Respiratory Syncytial Virus
RT–PCR	Real-time Polymerase Chain Reaction
SACCESS	South African Collaborative COVID-19 Environmental Surveillance
SADC	Southern African Development Community
SAHCS	Southern African HIV Clinicians Society
SAIOH	Southern African Institute for Occupational Hygiene
SAIMR	South African Institute for Medical Research
SALDA	South African Laboratory Diagnosis Association
SAMRC	South African Medical Research Council
SANAS	South African National Accreditation System
SANDF	South African National Defence Force
SANReN	South African National Research Network
SAHPRA	South African Health Products Regulatory Authority
SAPS	South African Police Service
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus
SARI	Severe Acute Respiratory Infection
SASOHN	South African Society of Occupational Health Nursing Practitioners
SASOM	South African Society of Occupational Medicine
SAVP	South African Vaccine Producers

ABBREVIATIONS AND ACRONYMS (CONTINUED)

SDL	Skills Development Levy
SLA	Service Level Agreement
SLMTA	Strengthening Laboratory Management Toward Accreditation
SMS	Short Message Service
SOP	Standard Operating Procedure
STI	Sexually Transmitted Infection
SU	Stellenbosch University
TAT	Turnaround Time
TB	Tuberculosis
TEPHINET	Training Programs in Epidemiology and Public Health Interventions Network
TMS	Tissue Microarray Analysis
ToR	Terms of Reference
TQM	Total Quality Management
TR	Treasury Regulations
TWG	Technical Working Group
UCT	University of Cape Town
U&E	Urea and Electrolytes
UFS	University of the Free State
UIF	Unemployment Insurance Fund
UKZN	University of KwaZulu-Natal
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UoT	University of Technology
UPS	Uninterruptible Power Supply
USAID	United States Agency for International Development
VAT	Value-Added Tax
VL	Viral Load
WCA	Workers Compensation Assistance
WHO	World Health Organization
WHO/AFRO	World Health Organization / Regional Office for Africa
Wits	University of the Witwatersrand
WSP	Workplace Skills Plan

FOREWORD BY THE CHAIRPERSON

Prof Eric Buch

On behalf of the National Health Laboratory Service (NHLS) Board, it is my pleasure to present the Annual Report of the NHLS for the 2022/2023 financial year and to congratulate the Executive Committee on attaining the goals that had been set out. The Annual Report reflects our sincere efforts towards achieving the NHLS mandate, outlined in the National Health Laboratory Service Act, 37 of 2000.

The achievements of our organisation can be attributed to the exceptional collaboration between the NHLS Board, our esteemed management team, and the diligent efforts of our dedicated employees. Throughout the year, the NHLS has demonstrated unwavering dedication and commitment in executing its diverse range of programmes, thereby making substantial contributions towards fulfilling its mandate. Despite encountering challenges, the NHLS remained steadfast in its pursuit of excellence. This annual report, therefore, provides a comprehensive overview of the activities of the NHLS as well as financial and non-financial performance for the 2022/2023 financial year.

In addition, I am pleased to convey in this annual report that the NHLS officially took over the Forensic Chemistry Laboratories (FCLs), formerly belonging to the National Department of Health. The integration of FCLs into the NHLS took effect on 1 April 2022. The period under review, therefore, represents the FCL's first year as a division of the NHLS. As a result of this strategic integration, the NHLS has broadened its service portfolio to encompass the comprehensive range of offerings provided by the FCLs. The FCLs have facilities in Cape Town, Johannesburg, Pretoria, and Durban.

With an extensive national network of laboratories, the NHLS is pivotal in delivering indispensable laboratory and public health services to more than 80% of the population. As a distinguished entity, the NHLS encompasses specialised institutes, namely the National Institute for Communicable Diseases (NICD), the National Institute for Occupational Health (NIOH), and recently, the FCLs as well as the subsidiary, the South African Vaccine Producers (SAVP). With a formidable presence in all nine provinces, the NHLS proudly employs over 8 000 highly skilled workers.

Our diverse activities include diagnostic laboratory services, pioneering research endeavours, comprehensive teaching and training initiatives, the manufacturing and production of life-saving anti-snake and other venom sera, and reagents and media.

These and other activities illustrate our organisation's firm commitment to carrying out our mandate to:

- Provide cost-effective and efficient health laboratory services to all public sector healthcare providers;
- Support and conduct health research; and
- Provide training for health science education in conjunction with medical faculties at universities and universities of technology.

Furthermore, the NHLS assumes a pivotal role in numerous critical endeavours, including but not limited to:

- Playing a vital role in the national antiretroviral rollout programme, conducting Cluster of Differentiation 4 (CD4) and viral load studies, and offering essential HIV treatment monitoring services.
- Providing essential diagnostic testing services for non-communicable diseases, contributing to early detection and effective management.
- Taking a proactive approach in monitoring tuberculosis (TB) diagnosis and treatment to curtail the impact of this significant public health concern.
- Leading the way in cervical cancer screening initiatives, ensuring timely identification and intervention for this prevalent condition.

- Serving as a cornerstone in safeguarding public health within South Africa by actively engaging in epidemiology, surveillance, and swift response measures to tackle outbreaks effectively.
- Extending unwavering support to occupational health services, reinforcing the well-being and safety of the workforce across various sectors.

Throughout the review period, the NHLS exhibited unwavering dedication towards enhancing our efficiencies and optimising our systems. The diligent efforts during this period have yielded remarkable results and further strengthened our operational capabilities.

It is also heartening to report that the NHLS has again maintained an unqualified audit from the Auditor-General of South Africa for the fifth year. This is evidence and a reflection of the strength and integrity of the organisation's corporate governance structure. It is important to indicate that NHLS adheres to the highest standards of corporate governance, as demonstrated by its adherence to the principles contained in the King IV Report on Corporate Governance.

Our primary responsibility as the Board is to monitor and review the organisation's performance in accordance with the NHLS' mission, as defined in our strategic plan. We have made numerous vital decisions and positioned the organisation on a path of more significant value generation for the future of healthcare in South Africa, guided by the strong leadership of Dr Kamy Chetty, our Chief Executive Officer.

STRATEGIC OVERVIEW

Considering our strategic plan, we thoroughly evaluated our accomplishments and opportunities for improvement. We have defined a roadmap for the future by recognising the challenges that lie ahead. We aim to position the NHLS as a forward-thinking diagnostic pathology service that aspires to excellence in providing equitable and accessible healthcare.

This strategy is centred on four primary strategic goals, which we have prioritised as follows:

- Laboratory service modernisation;
- Improving total turnaround times;
- Modernising information technology systems; and
- Providing good governance.

We can propel the NHLS forward as a progressive diagnostic pathology service by focusing our efforts on these strategic objectives. We will continue advancing towards a future where quality healthcare is available to all by pursuing excellence and our mission with zeal.

LABORATORY SERVICE

Laboratory testing is critical to providing efficient and timely service to the South African indigent population , which relies on public health services. It is essential to guarantee that these tests are completed on time, ensuring quality and cost-effectiveness.

ACADEMIC AFFAIRS, RESEARCH, AND QUALITY ASSURANCE

The Academic Affairs, Research, and Quality Assurance department is responsible for establishing and maintaining beneficial cooperation with health sciences faculties at South African medical universities, comprehensive universities (CUs), and universities of technology (UoTs). This department diligently oversees the implementation and refinement of the quality management system (QMS) within laboratories and departments in accordance with numerous renowned international benchmarks as part of our commitment to maintaining high standards and teaching, training, and research. Throughout the reporting period, the NHLS effectively implemented QMS, significantly increasing the number of accredited diagnostic laboratories, as validated by SANAS's successful initial assessments across several laboratories.

FORENSIC CHEMISTRY LABORATORIES

The FCLs assist the country's law enforcement agencies in matters such as analysing ante- and post-mortem blood for the presence of alcohol content not limited to suspected drunken driving cases, testing biological tissues and fluids in cases of alleged unnatural deaths, and sampling food and cosmetics as per the Foodstuffs Act. The FCLs have facilities in Cape Town, Johannesburg, Pretoria, and Durban.

SURVEILLANCE OF COMMUNICABLE DISEASES

The NICD plays a vital role in the early detection, containment, and response to infectious disease threats across South Africa, the SADC, and Africa. It provides technical support to the National Department of Health (NDoH), as well as the World Health Organization (WHO), the Africa Centres for Disease Control and Prevention (Africa CDC), and other relevant bodies through the surveillance of communicable disease, outbreak response, specialised diagnostic services, research and training, capacity building, and the various scientific outputs in terms of guidelines or publications.

OCCUPATIONAL HEALTH AND SAFETY

The NIOH, yet again, played a fundamental role in providing OHS expertise in the country, with various staff members being part of drafting and revising specific occupational health legislation and guidelines for both the formal and informal economies. The NIOH provided strategic leadership and participated in various stakeholder forums convened by the NDoH, the Department of Employment and Labour, the WHO, the International Labour Organisation (ILO), the International Congress for Occupational Health (ICOH), the Africa CDC, the Council for Scientific and Industrial Research (CSIR), and academia in accelerating and strengthening occupational health resilience concerning occupational allergies and infectious diseases.

ADMINISTRATION

The administration component is essential to our operations and is vital to our business, directly influencing service delivery. Administration comprises many critical responsibilities that contribute to an organisation's seamless running. These functions include human resources, labour relations, information technology, property management, security, legal services, communication, and integrated planning. To ensure the unified operation of its critical components, the NHLS has established four essential programmes: financial management, governance and compliance, information technology, and human resource management. These programmes are the foundation for the organisation's operational efficiency and trajectory.

STRATEGIC RELATIONSHIPS

The NHLS is exceptionally proud of its remarkable achievement in establishing, maintaining, and nurturing strong partnerships with key stakeholders, including esteemed entities such as national and provincial health departments and renowned global bodies and agencies such as the World Health Organization and the Centres for Disease Control and Prevention. These partnerships have regularly played a crucial role in furthering our purpose and expanding the reach of our impactful activities. We have built a collective and synergistic approach to tackling pressing healthcare challenges and ensuring optimal public health outcomes because of our constant commitment to these collaborations.

THE NHLS BOARD

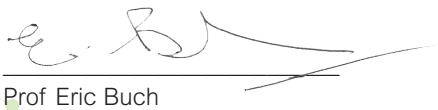
The Board appointed Ms Pumeza Mayekiso as Chief Financial Officer (CFO), effective 1 January 2023. As CFO, Ms Mayekiso takes responsibility for the financial function of the NHLS. The Board also appointed Dr Clothilde Oliphant as Chief Operating Officer: Strategic Initiatives during the fiscal year under review, effective 6 February 2023.

We look forward to assisting them as they continue to drive the organisation's primary and strategic priorities alongside our CEO, Dr Kamy Chetty. The Board wishes them success in leading their respective areas.

ACKNOWLEDGEMENTS

It is worth noting that during this period, the NHLS maintained an unqualified audit opinion from the Auditor-General, which speaks volumes about the institution's leadership quality. As the NHLS, we take great pride in these accomplishments and aim to build upon them, leaving a legacy for future generations at an institutional and societal level. I would like to sincerely express my gratitude to the Minister of Health and Deputy Minister for their unwavering support of the NHLS. I also want to express my heartfelt gratitude to my fellow Board members, whose experience and unshakable devotion make the responsibility of providing leadership and oversight to the NHLS go more smoothly.

On behalf of the Board, I sincerely thank Dr Chetty and the NHLS senior management team for their exceptional dedication in guiding this organisation towards its remarkable achievements. I am proud of these accomplishments as we look ahead to 2024 and beyond. I encourage you to keep working hard to make this transformed organisation worthy of admiration. The NHLS Board and executive management team remain dedicated to ensuring that South African citizens obtain timely access to high-quality diagnostic services. We are committed to developing a mutually beneficial working relationship at the Board level as we work together to achieve our shared objectives.



Prof Eric Buch
NHLS Chairperson

CHIEF EXECUTIVE OFFICER'S OVERVIEW

Dr Kamy Chetty

INTRODUCTION

The National Health Laboratory Service (NHLS) diligently upholds its mandate, which serves as the cornerstone for all our endeavours. This mandate encapsulates our purpose, outlining our obligations to deliver cost-effective and efficient health laboratory services to all public sector healthcare providers, support health research, and provide comprehensive training for health science education. Guided by this unwavering mission, we leverage our multidisciplinary strength as an organisation and collaborate closely with the public health sector.

With great pleasure, I provide an overview of our accomplishments in all operations during the fiscal year 2022/2023. We warmly welcome the Forensic Chemistry Laboratories (FCLs) as they join the NHLS family, as mentioned by the Chairperson of the Board in his foreword. It is worth noting that these facilities were successfully integrated into our systems.

I am also pleased to highlight a significant accomplishment from our Internal Audit function who achieved General Conformance to the Quality Assurance and Improvement programme, perfectly integrating with the prestigious International Professional Practise Framework (IPPF) pillars. Furthermore, Mr Nkosinathi Khumalo (NHLS Head of the Risk Management and Internal Audit department) received the Excellence in Internal Audit Leadership Award from the Institute of Internal Auditors (IIA) in November 2022. This accomplishment underscores our steadfast commitment to maintaining the highest standards of quality and excellence within our operational processes. It is also worth mentioning that the late Dr Elvira Singh posthumously received the AG Oettlé Memorial Award as a fitting recognition of her extraordinary cancer registration and epidemiology efforts as a distinguished scientist who contributed to advancing cancer research and understanding a devastating disease, underscoring CANSA's recognition of the National Cancer Registry's efforts.

We thank the dedicated individuals who contributed to this success, exemplifying the NHLS' ongoing pursuit of professional excellence.

FINANCIAL OVERVIEW

I am pleased to report that the NHLS has maintained an unqualified audit opinion with findings. The NHLS has maintained and improved on its financial stability. Our cashflow has improved and the cashflow ratio at NHLS is at 6:1 which represents cash reserves for 6 months (six). The auditors have concurred with our assessment that the NHLS is a going concern.

Our creditor days have decreased to 34 days, a marginal decrease from the prior year of 2%. The NHLS experienced a 4% increase in total volumes compared to the prior financial period. The NHLS' revenue declined by 3% compared to the prior year due to a significant decrease in COVID-19 test volumes. The NHLS collected R11.0 billion from provincial departments compared to R10.8 billion in the previous year.

As of the end of the fiscal year 2023, trade debtors amounted to R6.3 billion. Most of the debt is owed by KwaZulu-Natal (historical disputed debt) and Gauteng. The settlement agreement that was reached with the Gauteng Department of Health has seen a significant reduction in the debt owed by Gauteng. The negotiations with the KwaZulu-Natal Department of Health regarding the debt are ongoing. The NHLS will continue to engage the provinces regarding timely payments of debt in arrears.

PEOPLE MANAGEMENT

In the 2022-2023 financial year, the NHLS actively enrolled 741 trainees across diverse training platforms. This inclusive figure encompassed 373 medical technology students, 129 intern medical scientists, and 239 pathology registrars. The NHLS remains committed to nurturing and supporting the next generation of healthcare professionals through comprehensive training opportunities, ensuring the continuous development of skilled individuals in critical healthcare disciplines. These trainees are invaluable in advancing the organisation's mission to provide exceptional laboratory services and improve healthcare delivery.

By providing invaluable hands-on experience and comprehensive training, we aim to equip these trainees with the necessary skills and knowledge to excel in their respective fields. We firmly believe that investing in the education and growth of these trainees will enhance their capabilities and contribute to the overall advancement of the healthcare industry.

During the review period, the NHLS spent 1% of its salary bill on training activities. This expense is consistent with current skills development regulations, where the average cost or expenditure per employee surpasses R8,000. Furthermore, the NHLS has invested R42 million in PIVOTAL programmes focused primarily on unemployed learnerships and internships for learners pursuing health science qualifications, and 351 students pursuing health science qualifications were successfully placed at the NHLS, allowing them to gain the necessary professional experience for future employability in the sector and industry.

IMPROVEMENTS IN SYSTEMS

The NHLS issued a new tender to improve the bandwidth of its Information Technology Systems. The NHLS achieved an impressive milestone with 96% (277 links) of its sites successfully cutting over into MTN Multiprotocol Label Switching (MPLS), significantly increasing bandwidth and improving connectivity.

The project has also faced challenges such as power outages and vandalism, but effective management strategies are in place to address these difficulties.

A comprehensive order entry solution, including essential specimen tracking capability, has been built to improve test efficiency and appropriateness. The development phase is currently 95% complete. This technology enables order placement directly on the Laboratory Information System (LIS), reducing the possibility of human mistakes and improving data integrity. In the first quarter of fiscal year 2023-2024, a trial deployment will be implemented in a primary health clinic in Gauteng, allowing for real-time testing and modification of the system.

To ensure prompt accessibility of test results for clinicians, the NHLS has diligently established system interfaces with three private laboratory systems, augmenting the existing repertoire of interfaces that have been progressively developed over the years. These system interfaces serve as vital conduits, expediting the transmission of crucial information to healthcare providers and enabling them to access test results promptly.

The Forensic Chemistry Laboratories' (FCLs) IT system migration process is nearing completion, with a particular emphasis on scrutinising the solution for compliance and compatibility with regulatory requirements. The primary goal is the rigorous evaluation of system-generated forensic reports and affidavits to ensure they have passed through the critical chain of custody process, making them admissible in court.

Our Information and Communication Technology (ICT) department led a broad effort towards digitisation and digitalisation to optimise and automate critical business processes. This programme identified and mapped essential processes and implemented an electronic system for supply chain management deviations and electronic signatures.

SERVICE DELIVERY

The overall number of diagnostic tests performed across all pathology disciplines increased by 4%, from 106 837 537 in the fiscal year 2021-2022 to 110 728 830 in the fiscal year 2022-2023. Of the total number of tests performed during the

2022-23 fiscal year, 3 363 928 (12%), 1 548 447 (6%), and 1 457 874 (5%) were for Creatine, Full Blood Count (FBC), and Urea and Electrolytes (U&E) tests.

Notably, the number of TB tests performed increased by 17% during this period. This increase is attributed to the National Department of Health's (NDoH) adoption of the TB Recovery Plan, intended to intended to fill the gaps left by lockdown measures in response to the COVID-19 pandemic. Since the commencement of the TB molecular testing programme, 23.5 million tests have been performed, including 11.2 million Xpert MTB/RIF Ultra tests. Nationally, 2 569 042 Xpert MTB/RIF Ultra tests were conducted between April 2022 and March 2023. The four provinces with the highest number of tests were KwaZulu-Natal (37.2%), the Eastern Cape (15.5%), Gauteng (15.3%), and the Western Cape (11.6%).

For monitoring patients on antiretroviral therapy, 6.48 million viral load (VL) tests were performed in 2022-2023, compared to 6.07 million in 2021-2022, a 6.7% increase (408 893 tests). Of these, 93.5% met the WHO criterion of virological suppression (1 000 copies/mL). In 69.5% of tests, the lower limit of 50 copies/mL demonstrated viral suppression. Regionally, KwaZulu-Natal processed the most HIV VL tests, with 29.8% (1 929 069), followed by Gauteng with 23.3% (1 509 449). The Northern Cape had the fewest HIV VL tests, accounting for 1.2% (79 286) of all tests.

The Forensic Chemistry Laboratories (FCLs) were integrated were integrated into the NHLS on April 1, 2022. At the time of the integration the FCLs reported challenges regarding the turnaround times for results in the blood alcohol and toxicology sections due to various factors. Despite the historical challenges, the NHLS implemented a service improvement plan and was able to reduce the backlogs significantly in the blood alcohol section. The NHLS is working on strategies to reduce the toxicology section backlogs. In addition, the NHLS is working closely with the South African Police Services (SAPS) and Forensic Pathology Services to further reduce these backlogs. In addition, the NHLS is working closely with the South African Police Services (SAPS) and Forensic Pathology Services to reduce the backlogs.

The South African Vaccine Producers (SAVP) (Pty) Ltd., a wholly-owned subsidiary of the NHLS, serves as the exclusive manufacturer of antivenom for the treatment of snake, scorpion and spider envenomation in Africa. During the period under review, the SAVP encountered a challenge with the availability of snakebite antivenom. The NHLS put measures in place and was able to scale up production of the snakebite antivenom. During December 2022, the NHLS was able to supply snakebite antivenom to all the facilities and veterinarians across South Africa.

THE YEAR AHEAD

The unwavering commitment of our team breathes life into our mandate. It inspires us to generate meaningful solutions for real-world challenges, allowing us to make the transformative impact we aspire to achieve. We are dedicated to continuously enhancing the societal impact of our work, not only by delivering outstanding service but also by actively contributing to improved health outcomes and upholding principles of good governance.

ACKNOWLEDGEMENTS

I want to express my sincere gratitude to the esteemed members of the Board, under the leadership of Prof Eric Buch, for their invaluable guidance, patience, and meticulous evaluation of our work throughout the past year. Their wise counsel has played a pivotal role in enabling us to achieve our objectives.

Furthermore, I would like to extend my heartfelt appreciation to the Minister of Health, Dr Joe Phaahla, and Deputy Minister, Dr Sibongiseni Dhlomo, as well as the Director-General of Health, Dr Sandile Buthelezi and his team, and the MECs for the provincial health departments and their respective Heads of Department, whose valuable input and guidance have been instrumental in advancing the well-being of our nation. Their continued support is greatly appreciated.

I would also like to acknowledge the exceptional dedication and support provided by the executive management team and staff of the NHLS. Their dedicated commitment and leadership have been vital to our success.

Finally, I am sure that we have laid a solid foundation for the NHLS, which is firmly committed to providing high-quality services to the indigent people of our country and serves as a model for a competent state agency.

Dr Kamy Chetty
NHLS Chief Executive Officer

BOARD MEMBERS

Prof Eric Buch
Chairperson

Prof Jeffrey Mphahlele
Vice-Chairperson

Dr Kamy Chetty
Chief Executive Officer

Mr Koena Nkoko

Mr Michael Sachs

Prof Thanyani Mariba

Dr Balekile Mzangwa

Mr Jonathan Mallett

Mr Nic Buick

Prof Tivani Phosa Mashamba-Thompson

Dr Lesley Bamford

Prof Mpho Klass Kgomo

Mrs Nicolene van Westhuizen

Dr Mahlane Phalane

Mrs Penelope Msimango

Dr Siseko Martin

Ms Nyameka Macanda

Dr Naledzani Ramalivhana

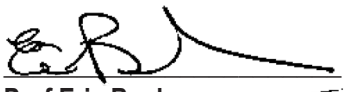
STATEMENT OF RESPONSIBILITY AND CONFIRMATION OF THE ACCURACY OF THE NATIONAL HEALTH LABORATORY SERVICE ANNUAL REPORT

To the best of our knowledge and belief, we confirm the following:

- All the information and amounts disclosed in the NHLS Annual Report are consistent with the annual financial statements audited by Nexia SAB&T; and the AGSA;
- The annual report is complete, accurate, and error-free;
- The annual report was prepared in accordance with the Annual Report Guidelines as issued by the National Treasury;
- The annual financial statements (Part E) were prepared in accordance with the Standards of Generally Recognised Accounting Practice (GRAP), as applicable to the NHLS;
- The Accounting Authority is responsible for the preparation of the annual financial statements and the judgements made on this information;
- The Accounting Authority is responsible for establishing and implementing a system of internal control designed to provide reasonable assurance as to the integrity and reliability of the performance information, the human resources information, and the annual financial statements; and
- The external auditors are engaged to express an independent opinion on the annual financial statements.

In our opinion, the NHLS Annual Report fairly reflects the operations, performance information, human resources information, and financial affairs of the NHLS for the financial year that ended **31 March 2023**.

Yours faithfully



Prof Eric Buch
Chairperson of the Board

Date:

Dr Kamy Chetty
Chief Executive Officer

Date:

OVERVIEW OF THE NATIONAL HEALTH LABORATORY SERVICE

The National Health Laboratory Service (NHLS) is a Schedule 3A national public entity, established in terms of the National Health Laboratory Service Act, No. 37 of 2000, governed by a Board to provide quality, affordable, and sustainable health laboratory services, training, and research. It was established by amalgamating the former South African Institute for Medical Research (SAIMR), the National Institute for Virology, and the National Centre for Occupational Health. It is managed according to the provisions of the National Health Laboratory Service Act, No. 37 of 2000, the NHLS Rules, and the Public Finance Management Act (PFMA), No. 1 of 1999 (as amended). In 2022, the Forensic Chemistry Laboratories (FCLs), which were part of the Act, were proclaimed and integrated into the NHLS.

Through its public countrywide network of quality-assured diagnostic laboratories, the NHLS is the sole provider of diagnostic pathology services to more than 80% of the South African population. It also provides surveillance support for communicable diseases, occupational health and cancer.

It has a clear organisational structure consisting of a head office in Sandringham, Johannesburg; six regions (Eastern Cape; Free State and North West; Gauteng; KwaZulu-Natal; Limpopo and Mpumalanga; and Northern and Western Cape); institutes, namely: Forensic Chemistry Laboratories (FCLs); the National Institute for Communicable Diseases (NICD), incorporating the National Cancer Registry (NCR); the National Institute for Occupational Health (NIOH); and a unit called Diagnostic Media Products (DMP); and subsidiary the South African Vaccine Producers (SAVP). SAVP is a wholly-owned subsidiary of the NHLS and the only South African manufacturer of antivenom for the treatment of snake, scorpion, and spider envenomation.

The six regions are purposefully designed to ensure that the NHLS plans, agrees on budgets, and monitors laboratory services jointly with provincial health partners, with the intention of laboratory services being part of the public health delivery system. The NHLS delivers services for the entire public sector, from academic, provincial, tertiary, regional, and district hospitals to primary healthcare facilities. The level of complexity and sophistication of services increases from peripheral laboratories to central urban laboratories (with specialised surveillance infrastructure existing at specific sites).

The NHLS also has three in-house Diagnostic Media Products (DMP) units that manufacture microbiological culture media and reagents for use in clinical diagnostic laboratories. The diagnostic media products are supplied internally to NHLS laboratories as well as externally to private laboratories and some laboratories within the African continent. During the financial year the DMP site in Johannesburg was renovated and Media Products were bought from the private sector. Going forward, the NHLS intends to enhance and integrate these units under single management and strengthen it to become a revenue-generating unit.

THE NHLS VISION, MISSION AND VALUES

VISION

To provide high-quality pathology and laboratory services that are clinically efficient and cost-effective.

MISSION

To provide pathology and laboratory services through competent professionals and state-of-the-art technology, supported by evidence-based research, training, and innovation to enhance integrated service delivery to meet the needs of the population.

VALUES

The following values form the guiding principles that govern and align the behaviour of all NHLS employees:

01 **Care**
The primary goal of the NHLS is to ensure the overall care and well-being of patients by supporting a strong and effective public healthcare system.

02 **Unity of purpose, shared vision and teamwork**
All employees should be united by a common vision and support each other to contribute to a beneficial and safe working environment.

03 **Service excellence**
This represents being committed to working with customers and building good relationships with them by understanding their needs, responding quickly, and providing appropriate solutions.

04 **Transformation**
We will invest in the professional growth of staff by sharing knowledge and experience, peer networking, education through training, and seeking opportunities to develop.

05 **Innovation**
We are committed to fostering an environment that supports research, with particular emphasis on innovative approaches to diagnostics, surveillance, and the strengthening of health systems to support national programmes.

06 **Integrity**
We will set and achieve goals, consistently delivering business results while complying with standards and meeting deadlines.

07 **Continuous improvement**
The constant drive for process improvement is the key to a successful organisation. The NHLS needs to create a culture of continuous improvement by empowering ALL team members within the organisation to continuously seek opportunities for improvement.

LEGISLATIVE AND OTHER MANDATES

The legislative mandate of the NHLS is derived from the Constitution, the National Health Act, No. 61 of 2003 (NHA), the NHLS Act 37 of 2000, and several laws, regulations and policies issued by Parliament.

CONSTITUTIONAL MANDATE

The NHLS is guided by the following sections and schedules, among others, in terms of constitutional provisions:

1. The Republic of South Africa's 1996 Constitution requires the state to gradually realise socioeconomic rights, including access to healthcare;
2. Section 27 of the Constitution stipulates the following regarding healthcare, food, water, and social security:

   (a) Everyone has the right to have access to the following:

   i) Healthcare services, including reproductive healthcare;
   ii) Sufficient food and water; and
   iii) Social security, including appropriate social assistance in instances where they are unable to support themselves and their dependents.

3. The state must take reasonable legislative and other measures within its available resources to achieve the progressive realisation of each of these rights; and
4. No one may be refused emergency medical treatment.

THE NATIONAL HEALTH ACT, NO. 61 OF 2003

This act provides a framework for a structured and uniform health system within South Africa, considering all the obligations imposed by the Constitution and other laws on the national, provincial and local governments regarding health services.

The objectives of the National Health Act (NHA) are to:

- Unite the various elements of the national health system in pursuit of a common goal to actively promote and improve South Africa's national health system;
- Provide for a system of cooperative governance and management of health services within national guidelines, norms, and standards to guide each province, municipality and health district to address questions of health policy and the delivery of quality healthcare services;
- Establish a health system based on decentralised management, principles of equity, efficiency, sound governance, internationally recognised standards of research, and a spirit of enquiry and advocacy that encourages participation;
- Promote a spirit of cooperation and shared responsibility among public and private health professionals and providers and other relevant sectors within the context of national, provincial and district health plans; and
- Create a foundation for the healthcare system that must be interpreted and implemented alongside other laws and policies that relate to health.

THE NATIONAL HEALTH LABORATORY SERVICE ACT, NO. 37 OF 2000

This Act mandates the NHLS to provide cost-effective and efficient health laboratory services to all public sector healthcare providers; any other government institution inside and outside of South Africa that may require such services; and any private healthcare provider that requests such services. The act also mandates the NHLS to support health research and provide training for health science education.

PUBLIC FINANCE MANAGEMENT ACT, NO. 1 OF 1999 (AS AMENDED)

The Act mandates to regulate financial management in the national government; to ensure that all revenue, expenditure, assets and liabilities of that government are managed efficiently and effectively; to provide for the responsibilities of persons entrusted with financial management in that government; and to provide for matters connected therewith.

The objective of this Act is to secure transparency, accountability and sound management of the revenue, expenditure, assets and liabilities of the institutions to which this Act applies.

CRIMINAL PROCEDURE ACT, NO. 51 OF 1977

The following paragraphs of Section 212 specifically applies:

- (4)(a) (v) Whenever any fact established by any examination or process requiring any skill in biochemistry, in metallurgy, in microscopy, in any branch of pathology or in toxicology is or may become relevant to the issue at the criminal proceedings, a document purporting to be an affidavit made by a person who in that affidavit alleges that he or she is in the service of the State or of a provincial administration or any university in the Republic or any other body designated by the Minister for the purposes of this subsection by notice in the Gazette, and that he or she has established such fact by means of such an examination or process, shall, upon its mere production at such proceedings be prima facie proof of such fact: Provided that the person who may make such affidavit may, in any case in which skill is required in chemistry, anatomy or pathology, issue a certificate in lieu of such affidavit, in which event the provisions of this paragraph shall mutatis mutandis apply with reference to such certificate.

- (8)(a) In criminal proceedings in which the collection, receipt, custody, packing, marking, delivery or despatch of any fingerprint or body-print, article of clothing, specimen, bodily sample, crime scene sample, tissue (as defined in section 1 of the National Health Act), or any object of whatever nature is relevant to the issue, a document purporting to be an affidavit made by a person who in that affidavit alleges- (i) that he or she is in the service of the State or of a provincial administration, any university in the Republic or anybody designated by the Minister under subsection (4).

MEDICINES AND RELATED SUBSTANCES ACT, NO. 101 OF 1965

The Medicines and Related Substances Act, which was amended by Amendment Act, 2008 (Act No. 72 of 2008) and Amendment Act, 2015 (Act No. 14 of 2015) and enacted in May 2017, enabled, amongst others, the establishment of the South African Health Products Regulatory Authority (SAHPRA), the licensing of manufacturers and importers of active pharmaceutical ingredients, and the regulation of medical devices.

The purpose of the Act, among others, is to:

- Provide for the registration of medicines and related substances intended for human and for animal use;
- Provide for the control of medicines and scheduled substances and medical devices; and
- Provide for the licensing of certain persons to compound, dispense, or manufacture medicines and medical devices and to act as wholesalers or distributors.

NATIONAL ROAD TRAFFIC ACT, NO. 93 OF 1991

Section 65 specifically applies:

- (1) No person shall on a public road-
  (a) drive a vehicle; or
  (b) occupy the driver's seat of a motor vehicle the engine of which is running, while under the influence of intoxicating liquor or a drug having a narcotic effect.
- (2) No person shall on a public road-
  (a) drive a vehicle; or
  (b) occupy the driver's seat of a motor vehicle the engine of which is running, while the concentration of alcohol in any specimen of blood taken from any part of his or her body is not less than 0,05 gram per 100 millilitres, or in the case of a professional driver referred to in section 32, not less than 0,02 gram per 100 millilitres.
- (3) If, in any prosecution for an alleged contravention of a provision of subsection (2), is proved that the concentration of alcohol in any specimen of blood taken from any part of the body of the person concerned was not less than 0,05 gram per 100 millilitres.

At any time within two hours after the alleged contravention, it shall be presumed, in the absence of evidence to the contrary, that such concentration was not less than 0,05 gram per 100 millilitres at the time of the alleged contravention, or in the case of a professional driver referred to in section 32, not less than 0,02 gram per 100 millilitres, it shall be presumed, in the absence of evidence to the contrary, that such concentration was not less than 0,02 gram per 100 millilitres at the time of the alleged contravention.

INQUEST ACT, NO. 58 OF 1959

The act provides for the holding of inquests in cases of deaths or alleged. deaths apparently occurring from other than natural causes and for matters incidental thereto, and to repeal the Fire Inquests Act, 1883 (Cape of Good Hope) and the Fire Inquests Law, 1884 (Natal).

FOODSTUFF, COSMETICS AND DISINFECTANTS ACT, NO. 54 1972

The act provides for the regulation of foodstuffs, cosmetics, and disinfectants and quality standards that must be complied with by manufacturers as well as the importation and exportation of these items.

PROTECTION OF PERSONAL INFORMATION ACT, NO. 4 OF 2013

The Protection of Personal Information (POPI) Act aims to bring South Africa in line with existing data protection laws around the world.

The purpose of this Act is to, among others to:

- Promote the protection of personal information processed by public and private bodies.
- Introduce certain conditions to establish minimum requirements for the processing of personal information.
- Provide for the establishment of an Information Regulator to exercise certain powers and to perform certain duties and functions in terms of this Act and the Promotion of Access to Information Act.
- Regulate the flow of personal information across the borders South Africa.

The POPI Act applies to all private and public organisations that process personal information, referring to information that is processed electronically, recorded manually and used in both health and public authority records. With specific reference to Sections 19 to 22 the Act differentiates between a Responsible Party and an Operator Party and allocate different responsibilities to these parties. In any agreement it is essential to clarify these roles upfront and to ensure that all parties comply not only with the general provisions of the Act, but also with specified responsibilities.

POPI act obligations apply throughout the full period that the organisation is processing personal

data. So do the rights of individuals in respect of personal data. Disposal of data is included in the POPI act – data must be disposed of securely and in a way which does not prejudice the interests and rights of the individual concerned.

The Act deals extensively with the following issues:

- Data collection;
- Data preservation;
- Third party access;
- Compromised data; and
- Compliance.

PROMOTION OF ACCESS TO INFORMATION ACT, NO. 2 OF 2000

The purpose of the Promotion of Access to Information Act (PAIA) is to promote the right of access to information, to foster a culture of transparency and accountability in South Africa. Furthermore, PAIA is aimed at encouraging an open democracy where individuals from all walks of life are empowered to engage with government and participate in decisions which affect their lives. The introduction of the POPI Act necessitated several changes to this Act but did not fundamentally change its principles or content. Access to health information is covered in Sections 30 (public) and 61 (private) of the Act, while Sections 34 (public) and 63 (private) deals with the mandatory protection of privacy of a third party who is natural person. The Act provides for access requests through an Information Officer who is obligated to comply with the protection clauses in the Act.

ADDITIONAL GOVERNANCE CONTEXTS

The NHLS is required to comply, among other things, with the following additional prescripts that form part of its governance context:

- Preferential Procurement Framework Act, No. 5 of 2000 Companies Act, No. 71 of 2008.
- General rules established in terms of section 27 of the NHS Act.
- Protocol on Good Governance in the Public sector.
- King IV Code of Corporate Governance.
- Treasury Regulations issued in terms of PFMA.
- All laws that apply to the health sector.

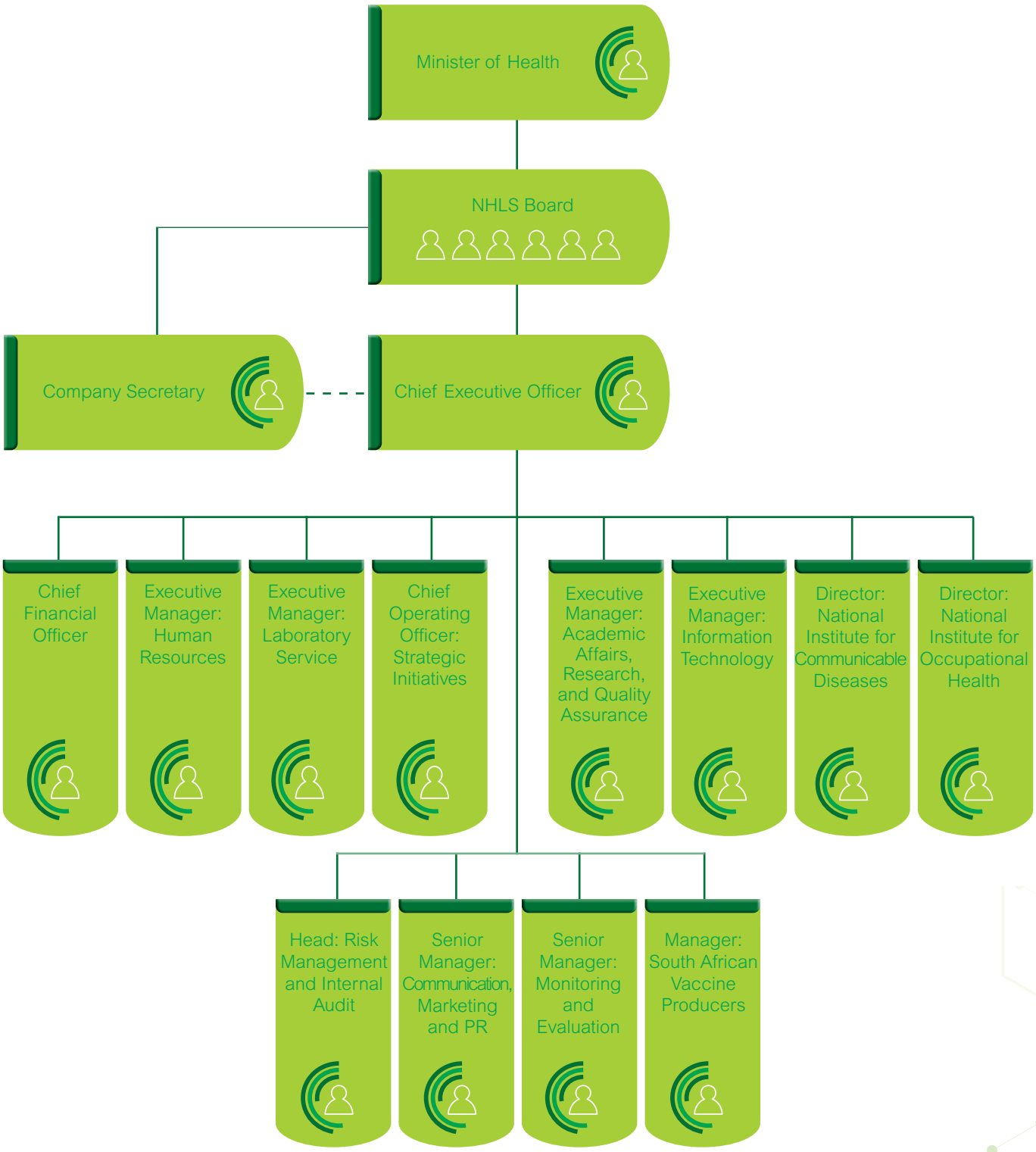
POLICY INITIATIVES

As articulated in its Strategic Plan 2020–2025, the NHLS is committed to supporting the following:

- National Health Insurance (NHI) will cover a defined repertoire of pathology services aligned with the package of services required per level of care. The pathology services will be delivered at the public healthcare level, as well as at higher levels of care as defined by the NHLS Act, and in line with the NHA. The latter requires the establishment, monitoring and enforcement of quality control standards applicable to pathology services to ensure patient safety.
- The National Public Health Institute of South Africa (NAPHISA) has the following functions:
  - Communicable diseases;
  - The National Cancer Registry;
  - Occupational health;
  - Non-communicable diseases; and
  - Injury and violence prevention.

It is anticipated that the National Institute for Communicable Diseases (NICD), including National Cancer Registry (NCR), and the National Institute for Occupational Health (NIOH) will be incorporated into NAPHISA.

HIGH-LEVEL ORGANISATIONAL STRUCTURE



PART B

PERFORMANCE INFORMATION

AUDITOR'S REPORT PREDETERMINED OBJECTIVES

The independent auditor performed the necessary audit procedures on the performance information of the NHLS to provide reasonable assurance in the form of an audit conclusion. The audit conclusion on the performance of the NHLS against its predetermined objectives is included in the audit report, with findings being reported under the "Report on the audit of the annual performance report" heading in the report section of the auditor's report on pages 165 to 170.

OVERVIEW OF PERFORMANCE

Performance information enables the organisation to track how well it is progressing in meeting its planned strategic goals and objectives. Performance information is key to effective management, including planning, budgeting, implementation, monitoring, and reporting of information. It also improves accountability by allowing stakeholders and interested parties to track progress, identify the scope of improvement plans, and better understand the issues involved (Framework Performance of Information: National Treasury).

ORGANISATIONAL ENVIRONMENT

Extended loadshedding, which resulted in frequent downtime of IT systems and laboratory analysers, continued to impact negatively on the provision of uninterrupted service delivery. The NHLS managed to achieve 70% of its set targets. The NHLS is in the process of purchasing more UPS systems, boosting power generation capacity, and installing solar power. Significant progress has been made in the procurement of twelve generators which will bring some stability in the generation of power resulting in improved service delivery outputs. The procurement of the solar system is in advance stages.

Service delivery environment

Total test volumes increased post COVID-19 pandemic, from 106 million in 2021–2022 to 110 million (~4% increase) in 2022–2023. The TB recovery plan was implemented in the period under review to address the gaps incurred during lockdown measures in response to the COVID-19 pandemic. This resulted in a 17% increase in TB test volumes. The increase in test volumes resulted in an increase in demand for the testing kits. However, due to a global stock shortage of the Xpert Ultra cartridges, the turnaround times for TB test results were negatively impacted. There were other factors, over and above load shedding, such as frequent breakdowns of analysers that negatively impacted test turnaround times. The NHLS has invested on replacing the old analysers and implementation of the new ones started towards the end of the period under review. The transition from old equipment to new equipment, as well as the ongoing issues of load shedding and Internet connectivity, have impacted total turnaround times. However, it is important to highlight that implementing these tenders has its own set of advantages.We should expect a significant reduction in service downtimes and interruptions after the installation and transition are completed.

Steps have been taken to remedy the load shedding challenges. The NHLS procured 40 Uninterruptable Power Supply (UPS) for the laboratories. The tender for the generators has been awarded and the tender for solar power solutions is in progress.

The NHLS performed exceptionally well in the accreditation of district laboratories. However, because of the long accreditation process, the accreditation of the remainder of Provincial Tertiary and Regional laboratories can only be completed in the next financial year.

The Forensic Chemistry Laboratories (FCLs) were fully integrated into the NHLS effective 1 April 2022. The FCLs experienced challenges with regard to the turnaround time of results in the blood alcohol and toxicology sections at the time when the laboratories were integrated into the NHLS. These were reported to be due to deteriorated infrastructure, old equipment, and a shortage of human resources. A lot has been done by the NHLS since then, and backlogs in the blood alcohol

section have been reduced. The NHLS continues to implement a service improvement strategy for the FCLs to improve efficiencies and clear backlogs, especially in toxicology.

INSTITUTIONAL PROGRAMME PERFORMANCE INFORMATION

The NHLS has six programmes contributing to its IMPACT of "providing better clinical outcomes for patients". The programmes are outlined in the document to demonstrate the performance of each programme towards providing high-end diagnostic services.

PROGRAMME 1: LABORATORY SERVICE

PURPOSE OF THE PROGRAMME:

This programme represents the NHLS' core business, which is to provide cost-effective and efficient health laboratory services to all public sector healthcare providers, any other government institution within and outside South Africa that may require such services, and any private healthcare provider that requests such services, as mandated by the NHLS Act. The NHLS must provide equitable, comprehensive, high-quality, timely, and cost-effective pathology services that will improve patient care.

Performance Information

Key performance indicator	Reporting period	Annual target	Actual achievement	Reason for deviation from the target	Corrective measures to be implemented
Percentage of TB GeneXpert tests performed within 40 hours	Quarterly	93%	91%	A global stock shortage of the Xpert Ultra cartridges and increased demand due to an increase in test volumes resulted in an increased turnaround time for TB GeneXpert tests. This was compounded by higher stages of loadshedding resulting in protracted instrument downtime. Even though the stock backlogs got cleared in December 2022, the impact of test kit shortages in the first three quarters exacerbated the situation.	The NHLS is procuring more Uninterruptible Power Supply (UPS) systems, increasing the generators capacity, and investing in solar energy to overcome these energy challenges. Over and above that, the stock backlogs of the Xpert Ultra cartridges were cleared.
Percentage of CD4 tests performed within 40 hours	Quarterly	94%	93%	In the third quarter of the fiscal year, new analysers replaced old analysers that were constantly breaking down. The transitional testing laboratories encountered delays in turnaround times while analysers were placed, tested, and confirmed. In addition, the shortage of reagents early in the year had a knock-on effect on the turnaround time.	The NHLS is procuring more UPS systems to increase the capacity of the generators as well as investing in solar energy, to overcome these energy challenges. Over and above, the tender for CD4 testing has been implemented and new analysers installed. The placement of analysers are phased, and this will result in improved efficiencies and therefore, improve the CD4 test turnaround times. The NHLS will also consider increasing the number of laboratories testing for CD4s to increase testing capacity.

Key performance indicator	Reporting period	Annual target	Actual achievement	Reason for deviation from the target	Corrective measures to be implemented
Percentage of HIV viral load tests performed within 96 hours	Quarterly	82%	95%	New equipment was placed, tested and verified. All teething problems were addressed during the implementation which resulted in the service running efficiently, exceeding the turnaround times. Programmatic monitoring and frequent visits to the testing laboratories also contributed to the TAT being exceeded.	N/A
Percentage of HIV PCR tests performed within 96 hours	Quarterly	81%	93%	New equipment was placed, tested and verified. All teething problems were addressed during the implementation and resulted in the service running efficiently, exceeding the turnaround times. Programmatic monitoring and frequent visits to the testing laboratories also contributed to the TAT being exceeded.	N/A
Percentage of cervical smear screening performed within five weeks	Quarterly	91%	88%	Cervical cancer screening campaigns during August, September and October resulted in increased test volumes, which created a backlog in high volume laboratories. In addition, an unplanned campaign in Gauteng in December 2022, compounded the backlogs in Braamfontein. The NHLS also experienced breakdown of equipment at DGM and Braamfontein, which contributed to the increased turnaround time.	The NHLS has awarded the tender for new liquid-based cytology (LBC) equipment. Furthermore, the NHLS is engaging with stakeholders so that laboratories can plan for any campaigns or activities that will affect their operations.
Percentage of laboratory tests (full blood count) performed within eight hours	Quarterly	94%	95%	Improved processes and efficiencies in the laboratories resulted in the over achievement.	N/A
Percentage of laboratory tests (urea and electrolytes) performed within eight hours	Quarterly	94%	91%	Gauteng contributes approximately 28% of the total test volumes and has had challenges with the breakdown of analysers, especially in large volume laboratories. The Eastern Cape installed new analysers, which need a lot of water to operate. The shortages of water in the province had a negative impact on the turnaround times of these tests. Loadshedding also impacted productivity negatively, resulting in increased turnaround times.	The NHLS is procuring more UPS systems, increasing generator capacity, and investing in solar energy to overcome these energy challenges. In addition, The NHLS is procuring water tanks as backup in all the areas that have challenges with water shortages. Also, the NHLS is in the process of improving supply chain management processes and capacitating the department to improve efficiencies.

Key performance indicator	Reporting period	Annual target	Actual achievement	Reason for deviation from the target	Corrective measures to be implemented
Percentage of SARS-CoV-2 PCR tests performed within 48 hours	Quarterly	85%	98%	A decrease in test volumes resulted in the NHLS exceeding the target.	N/A
Develop and implement a POCT plan	Annually	Implement the pilot to assess feasibility and cost benefit	Not achieved	Progress has been made in the implementation of the POCT plan as follows: Developed the implementation plan; identified the pilot sites; engaged with the relevant Provincial Departments of Health for implementation; the test basket has been determined; and a tender for the instrumentation has been awarded. The purchase orders have been raised and will be delivered. Testing will be conducted in the 2023–2024 fiscal year. The target was not achieved because the feasibility and cost-benefit assessment could not be completed in the period under review.	A feasibility and cost-benefit assessment will be completed in 2023–2024 in preparation for the roll out of the POCT.
Implement digital pathology	Annually	Prepare for implementation of digital pathology	Achieved	The Anatomical Pathology Expert Committee (APEC) had meetings to discuss which laboratories should be part of the pilot. Those laboratories must raise orders for scanners.	N/A

Programme 1 Laboratory Service	Budget	Actual Expenditure	(Over)/Under Expenditure	Budget	Actual Expenditure	(Over)/Under Expenditure
	R'000	R'000	R'000	R'000	R'000	R'000
Laboratory Service	2022-2023			2021-2022		
EXPENSES	8 812 761	8 220 704	592 057	8 964 389	9 009 552	(45 163)
Compensation of employees	4 154 129	3 701 961	452 168	3 917 587	3 695 487	222 100
Goods and service	4 658 632	4 518 743	139 889	5 046 802	5 314 065	(267 263)

Underspending on the compensation of employees decreased because of control over vacancies that were not filled as most of our adverts are internal before we advertise externally. Furthermore, spending on goods and services is due to control over controllable expenditure.

PROGRAMME 2: Academic Affairs, Research and Quality Assurance

PURPOSE OF THE PROGRAMME

The main purpose of this programme is to help the NHLS strengthen its mandate of maintaining and providing high-quality assured, and accredited laboratory medicine to the academic platform. Two of the focus areas within this programme are to ensure that research is conducted to improve service delivery and quality and to ensure national coverage by NHLS pathologists. The aim is to oversee and collaborate with various training institutions that contribute to the development of qualified and skilled people operating within the scientific field of pathology services.

Performance Information

Key performance indicator	Reporting period	Annual target	Actual achievement	Reason for deviation from the target	Corrective measures to be implemented
Percentage compliance achieved by laboratories during annual quality compliance audits	Annually	93%	100%	Improved implementation of the NHLS Quality Management System.	N/A
Percentage of laboratories achieving proficiency testing scheme performance standards of 80%	Annually	92%	99%	Improved implementation of the NHLS Quality Management System.	N/A
Number of national central laboratories that are SANAS accredited	Annually	53	53	N/A	N/A
Number of provincial tertiary laboratories that are SANAS accredited	Annually	16	15	One provincial tertiary laboratory was recommended to apply for the initial assessment on 31 January 2023. This laboratory will be accredited in 2023–2024 financial year.	Progress has been made in assessing the last remaining provincial tertiary laboratory. The laboratory will be assessed in the 2023–2024 financial year.
Number of regional laboratories that are SANAS accredited	Annually	35	34	One laboratory was assessed in February 2023 and will be recommended in the 2023–2024 financial year.	Two more regional laboratories have been recommended by internal audit to apply for assessments in the 2023–2024 financial year.

Key performance indicator	Reporting period	Annual target	Actual achievement	Reason for deviation from the target	Corrective measures to be implemented
Number of district laboratories that are SANAS accredited	Annually	40	65	Improved implementation of the NHLS Quality management System	N/A
Number of ISO 9001 certified departments	Annually	5 departments	4 departments	Certification of DMP Sandringham was suspended due to the closure of the department and renovations taking place.	The Information Technology Department passed the internal pre-certification. Applications for certification audits are in progress.
Develop and implement the pathologists' national coverage plan	Annually	30% implementation of the pathologists' national coverage plan	30% implementation of the pathologists' national coverage plan	N/A	N/A
Number of articles published in peer-reviewed journals	Annually	660	664	N/A	N/A
Number of pathology registrars admitted and trained in the NHLS	Annually	40	53	The admission of registrars for training is depended on the feed from the universities.	N/A
Number of intern medical scientists admitted and trained in the NHLS	Annually	50	63	The admission of registrars for training is depended on the feed from the universities.	N/A

Programme 2	Budget	Actual Expenditure	(Over)/Under Expenditure	Budget	Actual Expenditure	(Over)/Under Expenditure
	R'000	R'000	R'000	R'000	R'000	R'000
Academic Affairs, Research and Quality Assurance	2022-2023			2021-2022		
EXPENSES	350 228	270 036	80 192	343 190	383 315	(40 125)
Compensation of employees	118 208	114 923	3 285	111 170	114 255	(3 085)
Goods and service	232 020	155 113	76 907	232 020	269 060	(37 040)

Underspending on the compensation of employees decreased because of control over vacancies that were not filled as most of our adverts are internal before we advertise externally. Furthermore, spending on goods and services is due to control over controllable expenditure.

PROGRAMME 3: Surveillance of Communicable Diseases

PURPOSE OF THE PROGRAMME

The National Institute for Communicable Diseases is a national public health institute for South Africa that provides reference microbiology, virology, epidemiology, surveillance, and public health research to support the government's response to communicable disease threats.

Performance Information

Key performance indicator	Reporting period	Annual target	Actual achievement	Reason for deviation from the target	Corrective measures to be implemented
Percentage of identified prioritised diseases under surveillance	Quarterly	90%	99%	GERMS-SA data are cumulative and by the time we do this analysis, the majority of cases have been collected and Case Report Form (CRF) filled.	N/A
Percentage of outbreaks of Category 1 notifiable medical conditions responded to within 24 hours after notification	Quarterly	100%	100%	N/A	N/A
Percentage of NICD laboratories that are SANAS accredited	Annually	100%	100%	N/A	N/A
National HIV surveillance reporting	Quarterly	90%	100%	Reports are run on the fifth of each month containing data for the previous month and are manually distributed thereafter before the eighth of the month. This process supports complete and accurate reporting.	N/A
National TB surveillance reporting	Quarterly	85%	100%	Reports and email distribution have been automated. During this period, we have not experienced any technical issues interrupting this activity.	N/A
Number of articles published in peer-reviewed journals	Annually	170	251	Increased surveillance of new disease outbreaks has resulted in increased research output for the fiscal year.	N/A
Number of field epidemiologists qualified	Annually	8	12	Increased the recruitment to improve capacity.	N/A

Programme 3	Budget	Actual Expenditure	(Over)/Under Expenditure	Budget	Actual Expenditure	(Over)/Under Expenditure
	R'000	R'000	R'000	R'000	R'000	R'000
Surveillance of Communicable Disease	2022-2023			2021-2022		
EXPENSES	459 886	381 550	78 336	443 244	420 165	23 079
Compensation of employees	322 993	284 298	38 695	284 344	279 009	5 335
Goods and service	136 893	97 252	39 641	158 900	141 156	17 744

Underspending on the compensation of employees decreased because of control over vacancies that were not filled as most of our adverts are internal before we advertise externally. Furthermore, spending on goods and services is due to control over controllable expenditure.

PROGRAMME 4: Occupational and Environmental Health and Safety

In this context, environment refers to the environment that is contaminated by workplace activities or that can be protected from contamination through workplace interventions. Safety in this context refers to the synergies between occupational health and safety, such as in risk assessments, ergonomic assessments, teaching and training, and the surveillance of occupational diseases and injuries.

PURPOSE OF THE PROGRAMME

The National Institute for Occupational Health is a national public health institute that provides occupational and environmental health and safety support across all sectors of the economy to improve and promote workers' health and safety. National and provincial government departments and public entities are important clients, including the MBOD of the NDoH. The Institute achieved this by providing occupational medicine, hygiene, advisory, statutory pathology, and laboratory services, conducting research, and providing teaching and training in occupational and environmental health and safety.

Performance Information

Key performance indicator	Reporting period	Annual target	Actual achievement	Reason for deviation from the target	Corrective measures to be implemented
Percentage of occupational, and environmental health laboratory tests conducted within the predefined turnaround time	Quarterly	90%	98%	Test volumes dropped due to COVID-19 and they have not picked up since then.	N/A

Key performance indicator	Reporting period	Annual target	Actual achievement	Reason for deviation from the target	Corrective measures to be implemented
Number of occupational, environmental health and safety assessments completed	Annually	15	20	The NIOH has had access to workplaces since the COVID-19 restrictions were lifted. This has enabled the unit to conduct more assessments, exceeding the target.	N/A
Number of occupational health surveillance reports produced	Annually	4	5	N/A	N/A
Percentage of NIOH laboratories that are SANAS accredited	Annually	100%	100%	N/A	N/A

Programme 4	Budget	Actual Expenditure	(Over)/Under Expenditure	Budget	Actual Expenditure	(Over)/Under Expenditure
	R'000	R'000	R'000	R'000	R'000	R'000
Occupational and Environmental Health and Safety	2022-2023			2021-2022		
EXPENSES	166 009	140 231	25 778	157 732	141 247	16 485
Compensation of employees	134 216	117 802	16 414	113 470	112 931	539
Goods and service	31 793	22 429	9 364	44 262	28 316	15 946

Underspending on the compensation of employees decreased because of control over vacancies that were not filled as most of our adverts are internal before we advertise externally. Furthermore, spending on goods and services is due to control over controllable expenditure.

PROGRAMME 5: Forensic Chemistry Laboratories

PURPOSE OF THE PROGRAMME

This programme is responsible for pre-and post-mortem analyses of blood alcohol levels for drunk driving, as well as toxicology analyses of biological fluids and human organs in the event of unnatural deaths like murder and suicide, in accordance with the Criminal Procedure Act, and in accordance with the Foodstuffs Act for food and cosmetic analyses.

Performance Information

Key performance indicator	Reporting period	Annual target	Actual achievement	Reason for deviation from the target	Corrective measures to be implemented
Percentage of blood alcohol tests completed within a normative period of 90 days	Annually	60%	34%	Turnaround times were not achieved due to deficiencies in infrastructure and equipment breakdowns, which limited the sample processing capacity at laboratories. The delays were compounded by the increased frequency and duration of power outages. Delays in procurement that occurred during the incorporation of the Forensic Chemistry Laboratories from the National Department of Health to the NHLS contributed to increased test turnaround times.	The NHLS is procuring more UPS systems, increasing generator capacity, and investing in solar energy to overcome these energy challenges. In addition, the NHLS is in the process of acquiring additional and larger facilities for the laboratories laboratories, which have been severely impacted by infrastructure deficiencies. Additional equipment is being acquired to achieve sample processing capacity at laboratories to address the backlog and manage all new specimens that are received. The NHLS has reviewed and updated the FCLs organogram to improve oversight. Additional positions were created, and vacant positions were filled. Overtime working hours were implemented to assist in addressing the backlog. The NHLS is working closely with the Forensic Pathology Service (FPS) and the South African Police Service (SAPS) to review the backlogs and harmonise the data.
Percentage reduction of backlogged toxicology cases	Quarterly	20%	7%		
Percentage of perishable food samples tested within 30 days of sampling	Quarterly	50%	72%	The test volumes dropped making it possible for the laboratories to cope with the work.	

Key performance indicator	Reporting period	Annual target	Actual achievement	Reason for deviation from the target	Corrective measures to be implemented
Percentage of non-perishable food samples tested within 60 days of sampling.	Quarterly	50%	40%	Turnaround times were not achieved due to deficiencies in infrastructure and equipment breakdowns, which limited the sample processing capacity at laboratories. The delays were compounded by the increased frequency and duration of power outages. Delays in procurement that occurred during the incorporation of the FCLs from the NDoH to the NHLS.	

Programme 5	Budget	Actual Expenditure	(Over)/Under Expenditure	Budget	Actual Expenditure	(Over)/Under Expenditure
	R'000	R'000	R'000	R'000	R'000	R'000
Forensic Chemistry Laboratories	2022-2023			2021-2022		
EXPENSES	138 400	128 373	10 027	-	976	-976
Compensation of employees	85 000	92 691	-7 691	-	-	-
Goods and service	53 400	35 682	17 718	-	976	-976

Underspending on the compensation of employees decreased because of control over vacancies that were not filled as most of our adverts are internal before we advertise externally. Furthermore, spending on goods and services is due to control over controllable expenditure.

PROGRAMME 6: Administration

PURPOSE OF THE PROGRAMME

Sub-Programme: Financial Management

Key performance indicator	Reporting period	Annual target	Actual achievement	Reason for deviation from the target	Corrective measures to be implemented
Ratio of current assets to current liabilities	Quarterly	02:01	4:8:01	This is mainly driven by the cash balance.	N/A
Cash flow coverage ratio (operating cash in-flows / total debt)	Quarterly	02:01	6.0:01	This is mainly driven by the cash balance.	N/A
Number of creditor days	Quarterly	30 days	34 days	Implementation of efficient processes in receipting of goods resulted in the improved payment of suppliers.	N/A
Number of debtors days	Quarterly	100 days	146 days	Payments from provinces have not been sufficient to cover current and prior debt, as provinces' budgets have been decreasing.	Continuous engagement with provinces.
Percentage turnaround time for awarding tenders that are below R10 million within 180 days	Quarterly	75%	75%	N/A	N/A
Percentage turnaround time for awarding tenders that are above R10 million within 180 days	Quarterly	70%	50%	Two tenders above R10 million were awarded by the Board, one of which was over 180 days.	The finalisation of tenders and audit of tenders above R10 million will be expedited. Capacity and additional posts within the SCM tender and contracts unit are being implemented.
Audit opinion of the Auditor-General	Annually	Unqualified	Unqualified		
Percentage of allegations reported through the NHLS' tipoff platform that are investigated and completed within 180 days	Annually	90%	91%	N/A	N/A

Sub-Programme: Information and Communication Technology

Key performance indicator	Reporting period	Annual target	Actual achievement	Reason for deviation from the target	Corrective measures to be implemented
High-capacity bandwidth rollout (new MPLS)	Quarterly	Implement to 80% of the NHLS sites	Implemented to 96% of the NHLS sites	The NHLS implementation partner MTN, has invested additional resources to fast track the roll out.	N/A
Distribution of CDW summary reports to provinces	Quarterly	80% of the public hospitals serviced by the NHLS receive monthly reports	100% of the public hospital serviced by the NHLS received monthly reports	All reports were successfully submitted to the provinces.	N/A
Implementation of stock management system and analytics	Quarterly	Implement to 80% of the NHLS' laboratories	Implemented to 80% of the NHLS' laboratories	The stock management module is implemented to 100% of the laboratories through the Oracle system. The NHLS is evaluating several analytical tools including Oracle BI for implementation in the new financial year.	N/A
Percentage system uptime for critical systems at laboratory level	Quarterly	99%	99%	N/A	N/A

Sub-Programme: Human Resources

Key performance indicator	Reporting period	Annual target	Actual achievement	Reason for deviation from the target	Corrective measures to be implemented
Staff turnover ratio	Quarterly	5%	3.2%	The NHLS is generally an employer of choice for the laboratory personnel.	N/A
B-BBEE compliance	Annually	Level 4	Not achieved	The NHLS is in the process of improving processes in supply chain management to comply with the requirements of the check list.	The implementation of enhanced processes to improve efficiencies is in progress. In addition, additional posts within SCM are being implemented.
Number of intern medical technologists and student medical technicians admitted and trained in the NHLS	Annually	250	308	N/A	N/A
Percentage of employees trained as per the approved training plan (WSP)	Quarterly	70%	87%	The organisation adapted and adopted both online and face-to-face training. The organisation continues to do blended learning.	N/A
Percentage of employees with approved and evaluated performance agreements	Semester	98%	95%	There were employees who were on maternity leave, and some were on incapacity leave and there were few technical challenges who could complete the final assessments at the time of reporting.	The employees will be given an opportunity to complete their assessments before the end of September 2023.

Programme 6	Budget	Actual Expenditure	(Over)/Under Expenditure	Budget	Actual Expenditure	(Over)/Under Expenditure
	R'000	R'000	R'000	R'000	R'000	R'000
Administration	2022-2023			2021-2022		
EXPENSES	1 805 381	334 992	1 470 389	1 004 670	2 774 461	(1 769 791)
Compensation of employees	761 644	330 579	431 065	407 998	419 620	(11 622)
Goods and service	1 043 737	4 413	1 039 324	596 672	2 354 841	(1 758 169)

With underspending on the compensation of employees decreased because of control over vacancies that were not filled as most of our adverts are internal before we advertise externally. Furthermore, spending on goods and services is due to control over controllable expenditure and the adoption of GRAP 104.

BUSINESS UNIT PERFORMANCE

The NHLS has five business units that help it carry out its fundamental mandate, which includes the following primary objectives:

- Support the National Department of Health (NDoH) through delivering laboratory services to South Africans;
- Provide training in health sciences in partnership with universities and the Universities of Technology (UoTs); and
- Promote and undertake relevant and innovative health-related research.

The Business Units are as follows:

- Laboratory Service, which is further classified into six regions: Eastern Cape; Free State and North West; Gauteng; KwaZulu-Natal; Limpopo and Mpumalanga; Northern and Western Cape;
- Academic Affairs, Research and Quality Assurance (AARQA);
- Strategic Initiatives;
- National Institute for Communicable Diseases (NICD); and
- National Institute for Occupational Health (NIOH).

In addition, the organisation has the following support service departments:

- Communication, Marketing and Public Relations;
- Finance;
- Human Resources; and
- Information and Communication Technology.

The NHLS has a subsidiary, the South African Vaccine Producers (SAVP).

LABORATORY SERVICE

AREA MANAGERS

Tabita Makula
Eastern Cape

Jone Mofokeng
Free State and North West

Bahule Motlonye
Gauteng

Sibulele Bandezi
KwaZulu-Natal

Jacob Lebudi
Limpopo and Mpumalanga

Nasima Mahomed
Northern and Western Cape

INTRODUCTION

The NHLS' six regions (Eastern Cape, Free State and North West, Gauteng, KwaZulu-Natal, Limpopo and Mpumalanga, and Western and Northern Cape) are critical in guaranteeing the public's access to quality and timely diagnostic pathology services. The NHLS efficiently serves approximately 80% of the population through a well-established network of strategically located laboratories around the country. This comprehensive coverage ensures widespread access to the NHLS' key healthcare services, supporting equitable healthcare for all.

THE NHLS' NATIONAL FOOTPRINT

Operating model

- Nine provinces with national presence:
  - Nationwide laboratory network.
- Regional presence:
  - Administration by 6 regions
- Individual business units within region.

Province	GAUTENG
# of NHLS laboratories	27
# of health facilities	542
Population (2022)	16.1 million
Total Revenue (2022-2023)	3.25 billion
Total Test Volumes (2022-2023)	30.7 million

Province	LIMPOPO
# of NHLS laboratories	37
# of health facilities	642
Population (2022)	5.9 million
Total Revenue (2022-2023)	596 million
Total Test Volumes (2022-2023)	6.9 million

Province	NORTH WEST
# of NHLS laboratories	14
# of health facilities	397
Population (2022)	4.2 million
Total Revenue (2022-2023)	518 million
Total Test Volumes (2022-2023)	6.1 million

Province	MPUMALANGA
# of NHLS laboratories	21
# of health facilities	407
Population (2022)	4,7 Million
Total Revenue (2022-2023)	619 million
Total Test Volumes (2022-2023)	6.1 million

Province	NORTHERN CAPE
# of NHLS laboratories	5
#of health facilities	228
Population (2022)	1,3 Million
Total Revenue (2022-2023)	137 million
Total Test Volumes (2022-2023)	2.0 million

Province	FREE STATE
# of NHLS laboratories	9
# of health facilities	387
Population (2022)	2,9 Million
Total Revenue (2022-2023)	631 million
Total Test Volumes (2022-2023)	5.5 million

Province	WESTERN CAPE
# of NHLS laboratories	19
# of health facilities	532
Population (202)	7.2 million
Total Revenue (2022-2023)	1.29 billion
Total Test Volumes (2022-2023)	13.6 million

Province	EASTERN CAPE
# of NHLS laboratories	45
#of health facilities	1053
Population (2022)	6,7 Million
Total Revenue (2022-2023)	1.08 billion
Total Test Volumes (2022-2023)	11.2 million

Province	KWAZULU-NATAL
# of NHLS laboratories	56
# of health facilities	809
Population (2022)	11,5 Million
Total Revenue (2022-2023)	2.88 billion
Total Test Volumes (2022-2023)	28.4 million

* Population statistics are based on StatsSA's mid-year population estimates (2022).

Figure 1: Laboratory network and operating model.

Diagnostic services and new developments

TEST VOLUMES

A total of 110,728,830 test volumes were performed in the 2022–2023 financial year, reflecting a 4% increase compared to 106 837 537 in the previous financial year. Notably, TB test volumes experienced a surge of 17% during this period. This increase is attributed to the implementation of the TB Recovery Plan, aimed at addressing the gaps incurred during lockdown measures in response to the COVID-19 pandemic, by the National Department of Health (NDoH).

Table 1 Total test volumes completed per province

Province	2021 to 2022	2022 to 2023
Eastern Cape	11 017 127	11 214 985
Free State	5 455 296	5 538 124
Gauteng	29 174 909	30 708 691
KwaZulu-Natal	21 719 816	28 409 286
Limpopo	6 288 905	6 929 096
Mpumalanga	6 166 245	6 123 017
Northern Cape	2 100 139	1 995 016
North West	5 818 934	6 055 039
Western Cape	12 932 604	13 583 512
Total	**100 673 975**	**110 728 830**

Table 2 Top ten tests by volume

	Volume			
Description	**PY**	**% Contr to PY Total Volume**	**CY**	**% Contr to CY Total Volume**
Creatinine - Automated	3 363 928	12%	3 516 539	13%
HIV Viral Load	1 619 301	6%	1 688 079	6%
Full Blood Count Including Platelet	1 548 447	6%	1 618 007	6%
Profile Discrete Analyser U&E	1 457 874	5%	1 536 812	6%
Alanine Transaminase	819 983	3%	829 117	3%
C-Reactive Protein Nephelometer	741 978	3%	797 336	3%
GeneXpert PCR TB	642 517	2%	718 694	3%
Cholesterol Total	630 515	2%	685 908	2%
Albumin	640 018	2%	673 388	2%
Bilirubin Total	626 402	2%	653 056	2%
Grand Total of Test Volume	27 182 177		27 811 277	
Total Top 10 Test Volume	12 090 963		12 716 936	
Total Of Volume Growth		2%		
Other Test Volume	15 091 214		15 094 341	
% Contribution of Top Ten	**44%**		**46%**	

Test turnaround times

The turnaround time of test results is one of the most prominent indicators of laboratory service performance and quality of service, and it is often used as a key performance indicator. In recent years, the NHLS has achieved good turnaround times during the analytical phase. It continues to perform well in terms of the timely delivery of test results.

Table 3 Turnaround times of test results per region.

Region	TB GXP	CD4	HIV VL	HIV PCR	Cervical smear	FBC	U&E
	Target =92%	Target =93%	Target =80%	Target =80%	Target =90%	Target =93%	Target =93%
Eastern Cape	89%	93%	94%	85%	86%	90%	89%
Free State	97%	96%	98%	96%	99%	93%	92%
Gauteng	97%	94%	96%	91%	89%	96%	85%
KwaZulu-Natal	88%	90%	96%	95%	82%	96%	94%
Limpopo	93%	92%	90%	96%	99%	95%	94%
Mpumalanga	94%	92%	95%	88%	99%	93%	93%
Northern Cape	99%	98%	-	-	-	98%	85%
North West	96%	97%	98%	92%	99%	95%	93%
Western Cape	90%	96%	99%	98%	99%	97%	97%

UPGRADED LABORATORIES

During the financial year under review, the NHLS invested in upgrading its laboratories, optimising workflow processes and ensuring a safer working environment. Several regions completed significant renovations throughout the year under review to enhance workplace conditions and accommodate new state-of-the-art equipment, improving overall efficiencies.

Eastern Cape

Several laboratories were upgraded, and some were offered new space by the hospitals to be renovated in the new financial year. Renovations at three laboratories are underway to improve workflow, namely the St. Elizabeth, Livingstone, and Queenstown laboratories. The Humansdorp, Port Alfred and Grahamstown laboratories were offered new premises, and renovations will start in the new financial year.

Free State

The fourth phase of renovations for NHLS Pelonomi Laboratory was completed. New stainless steel basin and table top for the microbiology department and the installation of cabinets. Construction of the new laboratory as part of hospital revitalisation at Bethlehem Laboratory commenced in March 2022 and is expected to be completed by mid-2024 to mid-2025 of the fiscal year. The offices, staff restrooms, and staff kitchen were renovated on the first floor of the Universitas Business Unit.

Figure 2: The fourth phase of renovations for NHLS Pelonomi Laboratory was completed.

Figure 3: Newly revamped Kroonstad Laboratory.

Figure 4: The New Microbiology Laboratory at Pelonomi Hospital.

Gauteng

The network overhaul project to replace old network infrastructure continued. Many of the renovation projects are outstanding and will be rolled over to the new financial year.

Figure 5: Tambo Memorial Hospital Laborotory new analysers.

KwaZulu-Natal

The Fire Suppression Project was completed in INkosi Albert Luthuli Central Hospital (IALCH) during 2022 after infrastructural gaps were identified by the fire engineers. Although no suppression system was installed in the building, the renovations were commissioned to limit the spread of fire in the voids, the lift shafts, and between laboratories. The TB laboratory's structural changes were resumed in 2022. Both lifts in the IALCH Pathology Laboratory Building and the lift at King Edward Hospital (KEH) were functional.

Edendale and Appelsbosch laboratories were upgraded to be in line with the NHLS strategic plan. Although there is a plan in place to build a new laboratory structure for Grey's Hospital, various challenges have been encountered in finalising the plan and awarding the relevant tender.

Figure 6: Edendale TB processing and Auramine staining laboratory.

Figure 7: Edendale TB GeneXpert laboratory.

Dr Pixley Ka Isaka Seme Memorial Hospital opened on 1 May 2022. It offers full blood count, differential count, reticulocyte tests, coagulation and Point of Care Tests (POCT), which include blood gas, troponin T and D dimer. Chemistry, and microbiology samples are referred to INkosi Albert Luthuli.

Limpopo

A new park home laboratory was procured and placed at Helen Franz Hospital to provide an adequate and safe working environment to improve service delivery and the image of the organisation.

Figure 8: A park home laboratory at Helen Franz Hospital.

Mpumalanga

The planned laboratory renovation projects could not be carried out during this financial period due to various challenges. These had to be rolled over to the next financial year and include renovations at Rob Ferreira, Tintswalo, Matikwana, and Evander laboratories.

The new Mmametlhake Laboratory was fitted with benchtops, steel cabinets, and other components to make it functional. This upgrade will result in expanded laboratory space, enhanced workflow, improved working conditions, and compliance with health and safety standards. The laboratory is expected to relocate into this new space in the new financial year. The NHLS benefited from a hospital renovation project within which a new laboratory was built.

Figure 9: The new Mmametlhake Laboratory.

North West

The Business Unit planned and budgeted for the renovation of two more laboratories (Ganyesa and Wolmaranstad). Renovations at Ganyesa have been completed, and a haematology analyser has been installed. An RFQ was recently advertised for the installation of network points and a successful bidder will be appointed for Wolmaranstad, a procurement tender process is in progress. Equally, renovations for the upgrade of the Tshepong TB laboratory to BSL3 have been initiated.

It was recently discovered that the laboratory space allocated for the Rustenburg laboratory is not big enough to accommodate all laboratory equipment and personnel. This is partly because there is a shortage of space on the hospital premises. Therefore, a consensus was reached between the NHLS and hospital management that a vacant space be allocated to build a new laboratory. Likewise, this project could not be achieved in the same financial year and was moved to the following year.

The Business Unit experienced challenges with network connectivity in terms of IT and upgrades to the infrastructure, which were worsened by incessant load shedding. However, the MPLS WAN project cutover and migration was successfully implemented in most of the laboratories in the Business Unit and this brought about some sense of stability in terms of network connectivity.

Northern Cape

The Kimberly Chemistry and Haematology Core Laboratories have undergone renovations in preparation for the total automation instrumentation implementation. Renovations to the microbiology laboratory were also done to improve the workflow.

Western Cape

Figure 10: Renovations at the Kimberly Core Laboratory staining laboratory.

Figure 11: Microbiology laboratory upgrade.

Public Health Microbiology Laboratory at Green Point Complex:

At the onset of the COVID-19 pandemic, the Public Health Microbiology Laboratory at Green Point Complex was put on hold and staff placed on secondments in order to establish the COVID PCR Laboratory. Work to establish the laboratory continued throughout 2022, including test method selection, validations, training, and the acquisition of equipment. The laboratory officially opened in October 2022. Method validations for water, food, and environmental swabs are ongoing to increase the testing repertoire.

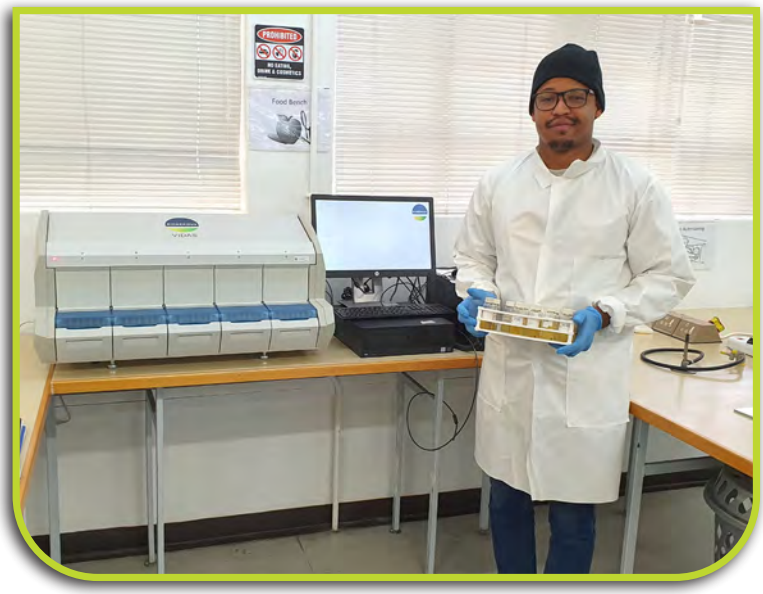


Figure 12: Public Health Laboratory.

The newly established service delivery Anatomical Pathology laboratory at Greenpoint Complex was renovated in 2022 and became fully functional on 13 January 2023.

During the setup phase, the laboratory started with two pathologists, a laboratory manager, one medical technologist and a clerk. This small laboratory is providing a pathology service to the Northern Cape region. This is a huge cost saving for the Northern and Western Cape NHLS, as there are more more referrals of anatomical pathology samples to private laboratories. This laboratory also assisted with slide reviews for East London and Port Elizabeth from March 2022 to September 2022. 1330 cases were reviewed. The laboratory then assisted the Universitas laboratory, assisting with their backlog during December and January 2023. In time, we hope to expand and offer this service to other regions in the NHLS in order to reduce their outsourcing and revenue loss to private laboratories.

STAKEHOLDER RELATIONS

Figure 13: Green Point Complex Anatomical Pathology Laboratories.

Eastern Cape

Relations were maintained with all stakeholders, and engagements with the Eastern Cape continued. The mobile laboratories were used for the provincial campaigns.

Aliwal North's laboratory manager and staff participated in the World AIDS Day event held on 1 December 2022. The event was hosted by the provincial Department of Health and took place in Joe Gqabi's Walter Sisulu Sub-District.

Figure 14: Staff from the Aliwal North Laboratory attending World Aids Day..

Free State

The Blood and Laboratory User Committees (BLUC) are intermittently functional at all sites. Relations with the University of Free State (UFS) remained excellent and amicably cooperative, as experienced at informal and formal meetings with the Dean and at Institutional Academic Pathology Committee meetings (IAPC). The relationship with the Free State Department of Health, including district health, our major stakeholder, remained positive. Various virtual and physical meetings were held with clients. The Business Units also maintained an excellent working relationship with the Free State Department of Health Laboratory Services Manager, enabling positive results for interventions and communications on the use of laboratory services in line with the Service Level Agreement (SLA) and Free State Department of Health requirements for Electronic Gatekeeping and a minimum clinical data set. There has been a huge improvement in customer satisfaction, as indicated below.

Table 4 Customer Satisfaction Survey outcome.

Laboratory name	2021-2022	2022-2023
Welkom	80%	81%
Kroonstad	72%	91%
Sasolburg	88%	90%
Pelonomi	81%	85%
Manapo	N/A	85%
Botshabelo	93%	88%
Bethlehem	94%	92%

North West

The main stakeholders for the North West Business Unit are the North West DoH, the Department of Correctional Services (DCS), and the South African National Defence Force (SANDF). Regular meetings with these stakeholders have not taken place since they were halted during the COVID-19 pandemic period. This is something that will be rectified in the next financial year. However, the North West DoH meetings, as the Phuthuma meetings, were attended as and when an invitation was extended. In addition, provincial Service Level Agreement meetings were also attended, both virtually and physically. These meetings were used to strengthen working relationships with the North West Department of Health, including with district and sub-district health managers, who are equally major stakeholders.

The Business Unit also enhanced and maintained a healthy working relationship with the North West DoH Deputy Director for Laboratory Services by regularly regularly engaging with her on various issues that needed laboratory interventions, such as Electronic Gatekeeping (eGK), rejections, and the Minimum Clinical Data Set. In the same vein, staff of the Business Unit attended annual events such as World AIDS Day, which was held in Ngaka Modiri Molema District, Mafikeng, and World TB Day, which was held in Bojanala District, Rustenburg.

The Business Unit is utilising these events to enhance and promote a healthy working relationship with stakeholders. Moreover, laboratory managers are also attending clinical meetings at their local laboratories. There has also been interaction between North West Laboratories and private partners such as SEAD and the Aurum Institute for the benefit of supporting National Priority Programmes (NPP).

Gauteng

The good relationship with the stakeholders, including the DoH partners, continues to be strengthened. This is accomplished through (but not limited to) Medical Advisory Committees, Laboratory Users meetings, Pathology Management Committees, District meetings and Clinic visits with representatives from the DoH and their partners.

The Chris Hani Baragwanath Hospital received an Annual National Batho Pele Excellence Award for Best Responsive Government Institution during the COVID-19 pandemic while continuously serving South African citizens in a positive way. This has been achieved in collaboration with the NHLS, where COVID-19 testing TAT closed at 99.96% for the CHBAH laboratory.

Figure 15: Certificate of Excellence awarded to the Chris Hani Baragwanath Academic Hospital.

In March 2023, the Chris Hani Baragwanath Academic Hospital (CHBAH) Laboratory took part in the City of Johannesburg's World Tuberculosis Day commemoration, including providing a mobile laboratory for sputum collection and registration.

Figure 16: City of Johannesburg World TB Day celebration in March 2023.

KwaZulu-Natal

Several meetings and engagements formed part of our continued stakeholder engagement, both physical and virtual. Client relations meetings and training sessions with the Primary Health Care (PHC) and Community Healthcare Centre (CHC) clinics that drain to KEH were held, including COVID-19 training. Web view access for the clinics and hospitals was enabled for new doctors and clinic sisters to view results. Training was conducted on rapid COVID-19 testing for 64 DoH employees. Customer satisfaction surveys for the laboratories were conducted, and the average score for the Business Unit was 95.5%.

DoH-NHLS management meetings at IALCH and KEH were held during the financial year to discuss laboratory user issues, cost efficiencies, rejection rate monitoring, clinical gatekeeping, electronic gatekeeping, specimen-taking practices, LIS-HIS challenges, and the Global Green Healthy Hospital Initiative. Additional meetings were convened with NHLS to discuss the Public Private Partnership (PPP) transition, the Fire Suppression Project, contingency plans, the referral of specimens, the asset replacement cycle, and the transition from PPP-Consortium services to NHLS in anticipation of the IMPILO end of contract date of 31 July 2023. Several internal NHLS meetings were also held to ensure the transition was smooth and to fast-track the procurement of critical Capex items.

An intern orientation workshop was held at KEH in January to orient incoming medical interns on good specimen-taking practices, MCDS, eGK, TrakCare Laboratory and protocols. The medical interns were also given web access to enable the viewing of laboratory results via the internet.

KEH clinics were visited, and issues were addressed regularly. SMS printers have been working in all of the clinics. The frequency of the courier collection was maintained and extended to St. Aidans Hospital, which now falls under KEH.

NHLS continued to attend IALCH Extended Management meetings, Hlanganani meetings, penalty meetings, HoDs meetings, and Laboratory User Committee meetings at INkosi Albert Luthuli Hospital. Test statistics have been provided to clinical HoDs to assist them with electronic and clinical gatekeeping, rejections, contamination, TAT, pre-ordering, future orders, and to enforce compliance with the MCDS and management of COVID-19 patients. The Laboratory User Committee meetings foster good client relations, attend to operational efficiency matters, optimise clinical gatekeeping and rejections, and minimise costs.

Meetings between NHLS and Impilo Consortium focused on day-to-day operational issues, which involved ensuring compliance with regulations of the Department of Employment and Labour, the municipality, and the PPP namely, damage by fire, insurance assessments, forensic investigations, fire engineers' assessments, asset audits, equipment placement cycles, power outages, floor repairs, PPP transitional changes, infrastructural changes, security, waste disposal, and health and safety, amongst others. To this end, the NHLS also had meetings with designated fire engineers and contractors with respect to various operational infrastructural changes to close the infrastructural gaps identified in the building.

The University of KwaZulu-Natal (UKZN) School of Laboratory Medicine and Medical Sciences Board meetings were attended by jointly appointed staff. School meetings with the NHLS academic staff were held and chaired by the Registrar Academic Leader, who is the coordinator for the Registrar programme. Discussions revolved around motivating academics to pursue postgraduate studies, in particular, PhD degrees, KPAs, the undergraduate curriculum, postgraduate support, the visual learning project, the ROBOT system, to name just a few. Many meetings had to be virtual because of the COVID-19 regulations. The issue of poor performing registrars was discussed with individual HoDs.

IAPC meetings were held to address operational and academic matters escalated from PMC level and other matters, as per the Umbrella Agreement. The local bilateral agreement between UKZN and NHLS KwaZulu-Natal Academic Complex has not been signed off by the university yet. The school's operational manager and dean, as well as the Head of School on occasion, attended PMC meetings to ensure that academic challenges are identified and handled, and that delivery platforms for teaching, training, and research are optimised. Other IAPC meetings with DUT and MUT were also attended.

Constant interaction with clients has strengthened relationships with partners, including the DoH, the Department of Forestry, Fisheries and the Environment (DFFE), the SANDF, Correctional Services Centres (CSC), and municipalities. This interaction happens at all levels, that is laboratory managers attending hospital management meetings, PHC meetings, clinic visits, the business manager attending district health meetings, city health meetings and visits.

Limpopo

Relations with stakeholders were maintained through different types and levels of engagement throughout the year.

Support was provided at the provincial commemoration of World TB Day hosted in the Capricorn District, at Ga Mathabatha Village.

Engagements were made for the preparation of the outbreak responses with the provincial DoH on cholera and measles. Engagements with the provincial DoH on intern and community doctors' induction were also held.

The laboratory management in Limpopo province also engaged with DoH partners, namely ANOVA and USAID, to monitor, evaluate, and come up with improvement plans where necessary.

The Area Manager worked with hospital management teams to award certificates and celebrate laboratory successes, such as SANAS accreditation, at various hospitals. One notable example is the Dilokong Laboratory.

Figure 17: Mr Jacob Lebudi (centre) is accompanied by the Dilokong Hospital Clinical Manager and Nursing Manager during the presentation of the SANAS accreditation certificate.

Mpumalanga

The NHLS in Mpumalanga ensured customer satisfaction by maintaining a strong relationship with all stakeholders through various forms of engagement, planned and unplanned.

The NHLS also participated in health-related campaigns and roadshows hosted by stakeholders in the province; for example, the NHLS participated in the Neglected Tropical Disease Day and the Comprehensive Health Awareness Campaigns, which were held in Ehlanzeni District.

The NHLS Mpumalanga is an active member of the Laboratory and Blood Transfusion Committee set up by the Provincial Department of Health. In these meetings, NHLS contributes to improving the management of laboratory service costs and sample rejections in pathology services by various hospitals.

Meetings were held with the HIV and AIDS/STI/TB (HAST) Directorate of the Mpumalanga Department of Health where their performance on the HIV Mother-To-Child Transmission programme was presented. Challenges experienced by laboratories regarding high rejection rates due to electronic gatekeeping were presented to the department, and measures to curb or reduce these were shared with the stakeholders.

The NHLS Mpumalanga provincial DoH quarterly meetings to discuss the Service Level Agreement are ongoing. These engagements go a long way towards fostering and entrenching a good working relationship with our major stakeholder. The NHLS Mpumalanga engaged with interns and community service doctors in the province to induct them into the services offered by the NHLS.

The NHLS Mpumalanga engaged with interns and community service doctors in the province to induct them on the services offered by NHLS.

The NHLS Mpumalanga engages regularly with some Non-Governmental Organisations (Right to Care and Equity Innovations), which are supporting and implementing partners for the Mpumalanga Department of Health.

A customer satisfaction survey was conducted to measure the quality of service delivery and identify gaps. An overall satisfaction score of 92% was achieved during this financial period and improvement plans were put into place, where performance was not satisfactory.

Northern and Western Cape

Western Cape maintained a strong working relationship with its stakeholders: the provincial DoH Western Cape, UWC, UCT, CPUT, SU, City of Cape Town Health, SANDF, DCS, environmental health and social welfare, as well as private stakeholders. Each business unit holds monthly Pathology Management Committee (PMC) meetings to address and resolve operational and academic concerns. PMC academic matters are raised and resolved at the quarterly IAPC meetings. Regular meetings with the DoH, the City of Cape Town (CoCT), and other stakeholders are attended to address any service-related challenges and implement programmes affecting service delivery in the region, e.g., eGK, sample rejection rates, and TAT. The constant interaction with clients has strengthened the relationship and improved overall service delivery in the Western Cape and Northern Cape.

In the Western Cape, the HIV coordinator and senior phlebotomist have embarked on a comprehensive training strategy to reduce the scourge of high rejections due to sample phlebotomy technique errors. The four major causes of rejection are haemolysis, insufficient volumes of both blood and sputa, incorrect tubes, and inaccurate paperwork. We have trained over 650 health care workers in the last year, and our objective is to incorporate phlebotomy training into the nursing curriculum.

The client liaison officer actively engages clients at all levels and is responsible for training clients at the facility level in applicable laboratory methods and processes, procedures, and technology. A total of 472 healthcare workers were trained during one hundred and thirty-six engagements and facility visits.

The Northern and Western Cape region managed to retain its high level of service delivery performance. Stakeholder relations with the Northern Cape Department of Health and other stakeholders, including the mining sector, are solid. The Northern Cape team is extremely dedicated and focused on maintaining and improving services to the people of the province by optimising the utilisation of the available opportunities and resources.

Figure 18: Health care workers training on TB Day.

The COVID-19 Call Centre and its impact

Against the global COVID-19 pandemic backdrop, the NHLS' unwavering response became palpable with the establishment of the COVID-19 Public Call Centre in March 2020.

This critical endeavour served as a ray of hope, remaining open 24 hours a day, seven days a week, and manned by professional nurses. The NHLS and the National Department of Health (NDoH) formed a strong cooperation critical to this achievement.

The NHLS assumed responsibility for driving the COVID-19 Public Health Emergency service delivery during this complex epoch at the request of the NDoH Director-General and in accordance with the terms of the agreement.

The COVID-19 Call Centre's mandate included a diverse strategy to meet our nation's changing demands. The Call Centre was a responsive public health communication model, from distributing relevant COVID-19 health advice and promoting safe practices throughout the pandemic to providing information on COVID-19 vaccines and COVID-19 results. Furthermore, it served as a vital resource, painstakingly documenting and reporting instances related to the COVID-19 Public Health Emergency.

The COVID-19 Call Centre, often known informally as the National Coronavirus Helpline, had an extraordinary rise in demand during its peak. It made an indelible impression as the lifeline linking South Africans with essential information, receiving over 5000 daily calls and a monthly average of 184,000 calls. This resounding success exemplifies the dedication that characterises the NHLS.

The NHLS COVID-19 Call Centre officially closed at the end of February 2023. Nonetheless, its legacy lives on as it handles specific calls in collaboration with the NDoH and its outsourced service centre. Throughout this transformation, the nurses who exemplified compassion and proficiency have found new purpose within NHLS regional laboratories, allowing them to continue to serve.

During the year financial year under review, the COVID-19 Call Centre handled 68,852 calls comprising various COVID-19 health-related enquiries. These ranged from questions about COVID-19 vaccination and symptoms to COVID-19 results.

The breakdown of all the calls handled in 2022-2023 by the Call Centre

Nature of Call	Count
Health Related Incidents	27 847
Managed Health Care	11 931
Results inquiry/request	16 999
Other Health (TB, Malaria, Rabies)	40
Various non-health related calls such as request for information, social grants, disaster management, incident reporting	12 035

Furthermore, its breadth and usefulness grew throughout the previous fiscal year as it expanded to include Rabies and Malaria issues.

As this chapter ends, the legacy of the NHLS COVID-19 Call Centre echoes as a tribute to preserving and helping South Africans in the face of unprecedented suffering.

In addition to the Call Centre activities during the period under review, the NHLS with the support of the NICD implemented automated sending of SMS to people undergoing Xpert laboratory investigations for presumptive TB as part of the TB Recovery Plan.

The purpose of the TB SMS notifications is to strengthen systems for linkage of people diagnosed with TB to appropriate treatment, thereby, reducing the initial loss to follow by prompting patients to return to the Health care facility when their results are available.

NATIONAL PRIORITY PROGRAMMES

Prof Wendy Stevens
(Director)

Dr Pedro da Silva
(Operations Manager)

INTRODUCTION

The National Priority Programme (NPP), together with the NHLS regions, continued to offer multidisciplinary services to the national diagnostic testing programmes that serve to support South Africa's HIV, tuberculosis (TB), and coronavirus disease (COVID-19) programmes through the following:

- Ongoing assessment of diagnostic requirements and implementation of programmatic improvements;
- Driving research and development to guide innovations across the laboratory diagnostic value chain;
- Supporting existing testing laboratories through the provision of technical training assistance; and
- Expanding implementation science to inform improvements in the clinical management of respective diseases and improved linkage-to-care.

Programmatic monitoring and performance, ongoing research, and grant-funded activities conducted in 2022–2023 are detailed below.

NATIONAL DIAGNOSTIC TESTING SERVICES: TUBERCULOSIS PROGRAMME

National Xpert MTB/RIF Ultra Testing Programme

Overview

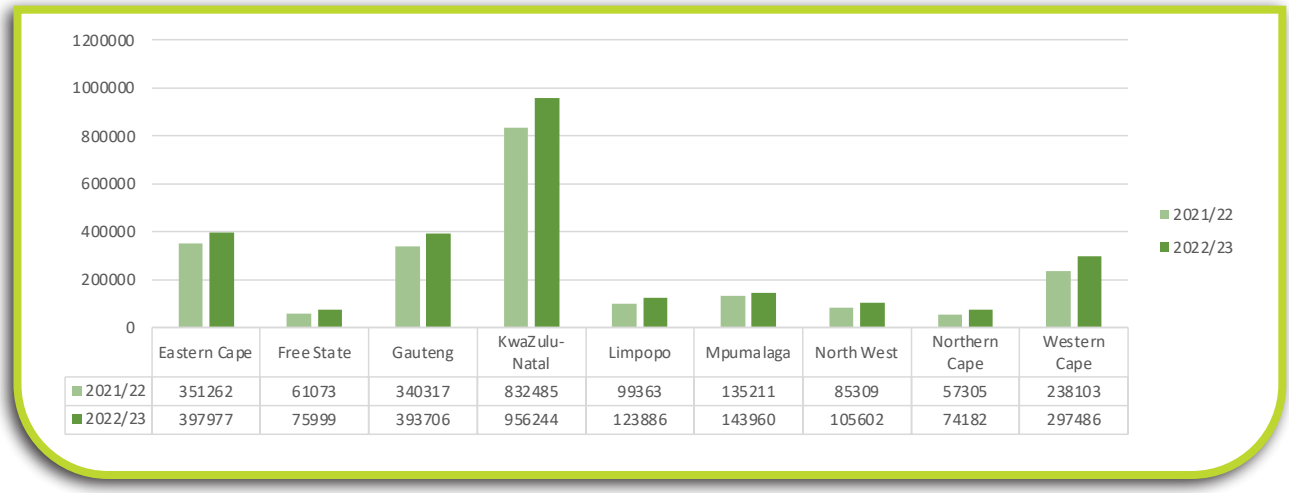
The NPP, together with the NHLS regions, have been responsible for the implementation and programmatic monitoring of the GeneXpert platform for more than a decade. Accessibility was scaled to national coverage by 2013, and further improvements were deployed, which included expansion of testing to extra-pulmonary specimen types and the diagnosis of TB in the paediatric setting. With enhancements made to the cartridge design, the program transitioned to testing with the more sensitive Xpert MTB/RIF Ultra assay in 2018. Testing is performed across 173 laboratories with an instrument footprint of 433 platforms of varying capacities (232 GX4, 191 GX16, 4 GX48, and 8 GX80).

Operations

Since the inception of the programme, 23.5 million tests have been performed, which includes 11.2 million Xpert MTB/RIF Ultra tests. Of these, 2.2 million cases of TB have been identified (9.4%), of which 6% reported rifampicin (RIF) resistance.

Between April 2022 and March 2023, 2 569 042 Xpert MTB/RIF Ultra tests were conducted nationally. The highest number of tests were performed by the following four provinces:

- KwaZulu-Natal: 37.2%;
- Eastern Cape: 15.5%;
- Gauteng: 15.3%; and
- Western Cape: 11.6%.



	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalaga	North West	Northern Cape	Western Cape
2021/22	351262	61073	340317	832485	99363	135211	85309	57305	238103
2022/23	397977	75999	393706	956244	123886	143960	105602	74182	297486

Figure 1: Xpert MTB/RIF Ultra provincial tested volumes for 2021-2022 and 2022-2023.

Tested volumes increased by 17% from 2021 to 2022 and were the highest numbers tested for the past seven reporting periods. This is reflective of the national TB recovery plan that was implemented to address the gaps incurred during the lockdown measures in response to the COVID-19 pandemic.

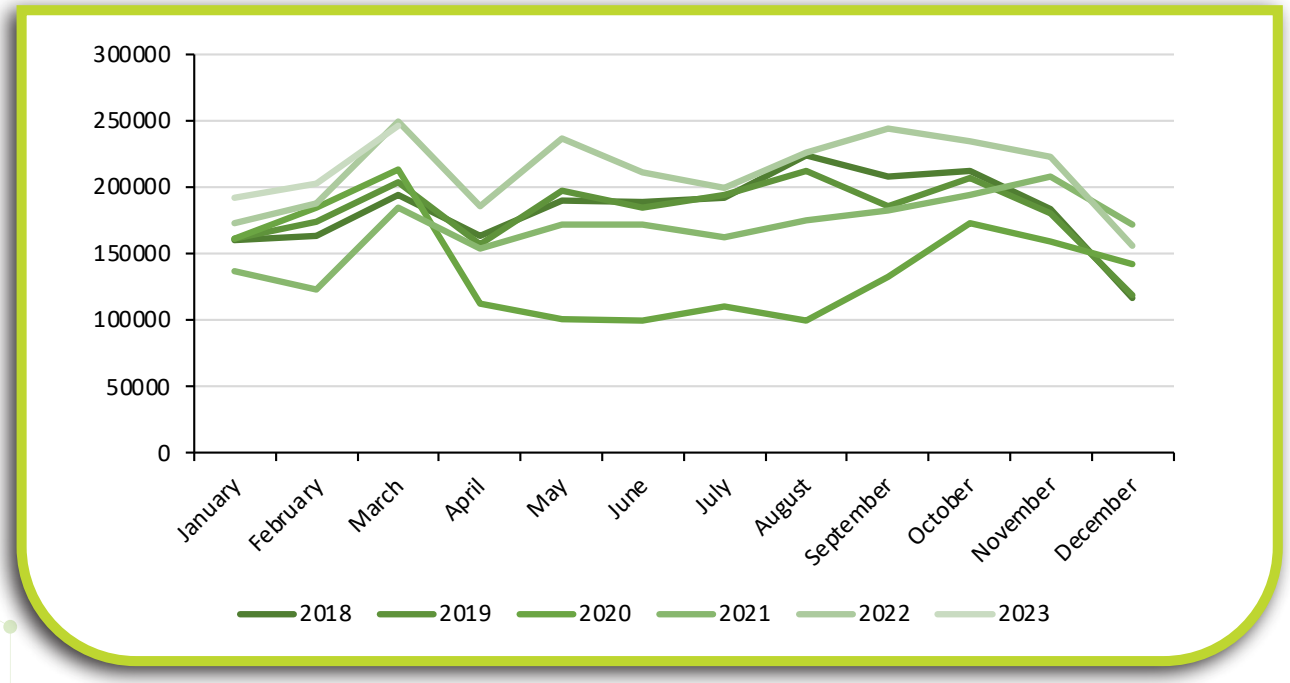
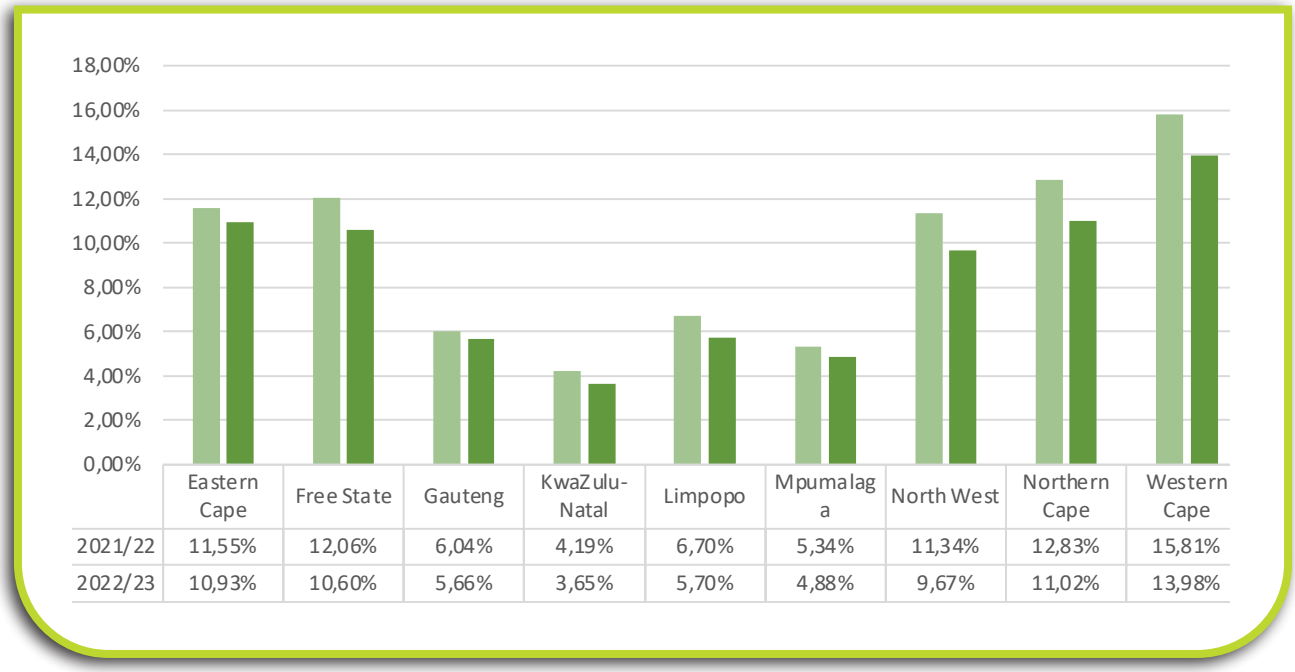


Figure 2: Recovery of Xpert MTB/RIF Ultra tested volumes in 2022-2023.

The average national TB detection rate among those tested was 8.4% (7.8% in 2021 to 2022). The Western Cape reported the highest detection rate (14.0%), and KwaZulu-Natal reported the lowest (3.6%). The trend remains unchanged from 2021 to 2022. The average RIF-resistance detection rate for the period was 4.7% (4.9% in 2021 to 2022). KwaZulu-Natal reported the highest RIF resistance rate of 6.6%, followed by Mpumalanga at 5.8%, while the Free State reported the lowest rate at 3.5%.



	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalanga	North West	Northern Cape	Western Cape
2021/22	11,55%	12,06%	6,04%	4,19%	6,70%	5,34%	11,34%	12,83%	15,81%
2022/23	10,93%	10,60%	5,66%	3,65%	5,70%	4,88%	9,67%	11,02%	13,98%

Figure 3: Xpert MTB/RIF Ultra provincial detection rates for 2021-2022 and 2022-2023.

	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalanga	North West	Northern Cape	Western Cape
2021/22	5,02%	3,94%	4,77%	6,09%	4,67%	5,88%	3,41%	4,53%	4,36%
2022/23	5,39%	3,54%	4,44%	6,64%	4,45%	5,77%	3,67%	4,16%	4,67%

Figure 4: Xpert MTB/RIF Ultra provincial rifampicin resistance rates for 2021-2022 and 2022-2023.

Of all Xpert MTB/RIF Ultra test results reported in the review period, 1.4% detected a 'trace' (1.2% reported in 2021–2022,). 'Trace' amounts of *Mycobacterium tuberculosis* complex (MTBC) represent the lowest measurable level of genetic material detected due to the amplification of specific insertion sequences. Provincial differences were noted, with the Western Cape reporting the highest 'trace' detection rate (2.2%) and KwaZulu-Natal the lowest (0.8%). The detection of 'trace' has important clinical implications, as it may be representative of the detection of low-bacillary load in active TB disease but may also represent the residual detection of non-viable organisms from a previously treated TB episode, thus necessitating further and thorough clinical assessment.

During 2022-2023, 90.8% of Xpert MTB/RIF Ultra tests were performed within a turnaround time (TAT) of 40 hours, falling slightly short to meet the NHLS Annual Performance Plan Target of 93% of tests within 40hrs. TB programmes across the world were significantly impacted by the lockdown and the restrictive measures implemented to contain the spread of SARS-CoV-2 infections. Despite this, efforts were being made to get TB programmes back on track, which resulted in an increased demand for testing reagents; consequently, this led to a global shortage of Xpert MTB/RIF Ultra cartridges. In South Africa, the stock country allocation did not meet the increased testing demand, which generated testing backlogs, and thus TAT was compromised. For the latter part of 2022–2023, the incoming stock was shared equitably among NHLS testing laboratories. By quarter three of 2022–2023, stock allocations had steadily increased, and all order and testing backlogs had been cleared by December 2022. The situation has since stabilised, and current testing demands are being met.

Continuous monitoring of the programme was provided through analysis of test volumes, instrument utilisation, TAT, detection rates, resistance rates, and error rates. Monitoring reports were compiled and distributed to area and business managers monthly.

To ensure testing quality, all Xpert laboratories are enrolled in the SmartSpot Quality (Pty) Ltd. external quality assessment (EQA) programme using dried culture spots (DCS). Three cycles of EQA were distributed in 2022–2023 with 96% of Xpert laboratories submitting results for assessment. Of those submitting assessment results, 91% of laboratories achieved a 100% panel pass rate across the three cycles. The outcome of the assessments is communicated to the Quality Assurance Unit (QAD) and individual laboratories. Training interventions are triggered where performance has not been as expected.

Outputs

Training

The team continued to provide technical training to laboratory staff. An advanced training workshop was held in collaboration with Cepheid for the KwaZulu-Natal region. Basic onsite training also resumed following the easing of COVID-19 restrictions. In 2022–2023, 104 laboratory staff completed training.

On-site, troubleshooting support visits were completed for 16 laboratories.

Implementation of the Xpert MTB/XDR assay

The Xpert MTB/XDR assay is a new assay intended to aid in the detection of drug-resistant MTBC DNA in less than 90 minutes. In specimens where MTBC is detected, the assay can also detect isoniazid (INH) resistance-associated mutations, ethionamide resistance associated with inhA promoter mutations only; fluoroquinolone resistance-associated mutations; and second-line injectable drug-associated mutations.

The assay is performed on GeneXpert instruments with ten-colour functionality. Xpert MTB/RIF Ultra testing (currently operating with six-colour functionality) is also compatible with this level of functionality. This has also been successfully evaluated within the NHLS.

The NHLS is a key partner of the National TB Programme and adapts to having the latest and most sensitive diagnostic capability to further strengthen the programme. South Africa was the first country to implement the GeneXpert MTB/RIF and GeneXpert MTB/RIF Ultra assay, at scale, as a smear microscopy replacement technology in 2011 and one of the first to perform susceptibility testing for new and repurposed anti-TB drugs (Bedaquiline and Linezolid) as part of diagnosis. Further diagnosis was improved, particularly in HIV co-infected TB-disease individuals, through replacement of GeneXpert MTB/RIF assay with the Xpert MTB/RIF Ultra assay in 2017 with South Africa again taking the lead. These efforts have aided in improved management of people diagnosed with TB and drug-resistant TB, thereby reducing South Africa's burden of disease.

On World TB Day, the NHS CEO announced the implementation of the WHO endorsed Xpert MTB/XDR assay to for the detection of isoniazid and second line drug resistance to strengthen laboratory capacity for the detection and management of drug-resistant TB, an emerging global threat. The assay has been extensively evaluated within the NHLS laboratory setting and this data guided WHO's wider recommendations. The deployment of the assay leverages the existing instrument network and testing capacity, increases utilisation and thereby maximises efficiency. The implementation is being supported by the Centre for TB/NICD/NHLS and the National Priority Programme/NHLS. The potential benefits are a reduction in public health expenditure, a reduction in the number of repeat tests (through the traditional testing modalities) and a significantly improved turnaround time. Ultimately, turnaround time improvements benefit those individuals requiring treatment by enabling clinicians to take earlier appropriate management decisions impacting treatment outcomes.

In January 2021, the World Health Organization (WHO) made recommendations on three classes of nucleic acid amplification tests (NAATs) not previously reviewed[1]. Of the recommendations, the Xpert MTB/XDR assay was the only one able to predict resistance to second-line anti-TB agents. The overall conclusion was that the available evidence supported the use of low-complexity automated NAATs (i.e., the Xpert MTB/XDR assay) for the detection of resistance to INH and second-line anti-TB agents.

The NPP was one of the sites included in the Foundation for Innovative New Diagnostics (FIND) multi-country diagnostic evaluation of the Xpert MTB/XDR assay. Data were published[2] and considered by the WHO in the recent Xpert MTB/XDR recommendations[3]. The assay demonstrated high diagnostic accuracy and met the WHO's minimum target product profile for a next-generation drug susceptibility test.

On World TB Day 2022, the NHLS CEO announced its plans to implement the Xpert MTB/XDR assay as a diagnostic test for TB disease. Since the announcement, much work has been completed jointly by the NPP and the Centre for Tuberculosis at the NICD to achieve this, which includes the following:

- Determining the best placement of the Xpert MTB/XDR assay and finalising a cost-outcome analysis comparing the current standard-of-care testing platform;
- Compiling evaluation reports on assay performance and the comparison of instruments with ten-colour functionality (a requirement to run the assay due to increased detection targets) to current instruments operating on six-colour functionality;
- Creating test methods, tariff codes, and interface development for results transmission to TrakCare;
- Creating Standard operating procedures, guiding testing workflows, and training laboratory staff; and
- Instrument placement, verification testing, and sign-off of interfaces and results transmission at each site.

Furthermore, inputs were sought also from the Department of Health's (DoH) National Clinical Advisory Committee, the NHLS' wider TB Forum (representing academic centres), and the Microbiology Expert Committee on automated comments to guide healthcare workers (HCWs) on further actions based on respective Xpert MTB/XDR results.

The potential benefits of introducing the Xpert XDR assay are a reduction in public health expenditure through a reduction in the number of repeat tests by traditional testing modalities and a significantly improved TAT due to its low complexity.

A milestone in the Xpert MTB/XDR implementation project was reached on March 16, 2023, with the Port Elizabeth laboratory being the first of the selected laboratories to commence testing using specimens or cultured isolates from individuals where rifampicin resistance had been identified by Xpert MTB/RIF Ultra. Fourteen other NHLS laboratories are in the process of going live as the various components of IT testing and instrument verification are signed off. It is anticipated that Xpert MTB/XDR testing will be fully integrated into the NHLS' diagnostic testing for TB disease by the end of April 2023.

Image 1: Xpert MTB/XDR training conducted at Universitas microbiology laboratory. Lithole Makubalo, TB-molecular project trainer, second from the left.

Image 2: Port Elizabeth Microbiology – first NHLS laboratory to go live with Xpert MTB/XDR testing.

NATIONAL DIAGNOSTIC TESTING SERVICES: HIV PROGRAMME

National CD4 Count and Reflex Cryptococcal Antigen Testing Programme

Overview

CD4 expression is an indicator of HIV disease progression, and testing services continued at 47 laboratories. It identifies patients with advanced (CD4<200 cells/µl) and very advanced HIV disease (CD4<100 cells/µl), often associated with underlying opportunistic infections such as cryptococcal meningitis[4,5,6,7]. CD4 testing is used to assess late presentation[8,9], and identify high-risk groups for early intervention[10,11,12]. CD4 data provides critical programmatic information through ongoing modelling and monitoring[12,13] .

Operations

CD4 testing

An annual decrease of 3.4% in CD4 test volumes was noted in 2022–2023 from 2.25 million to 2.18 million (less 75 999 tests). The testing volume differences noted between 2021–2022 and 2022–2023 were not statistically significant (p>0.1) and a year-on-year decline of ~5% is expected. At regional and provincial levels, the biggest testing volume change was noted for KwaZulu-Natal (5.8%) and a slight increase of <1% was noted for the Western and Northern Cape regions.

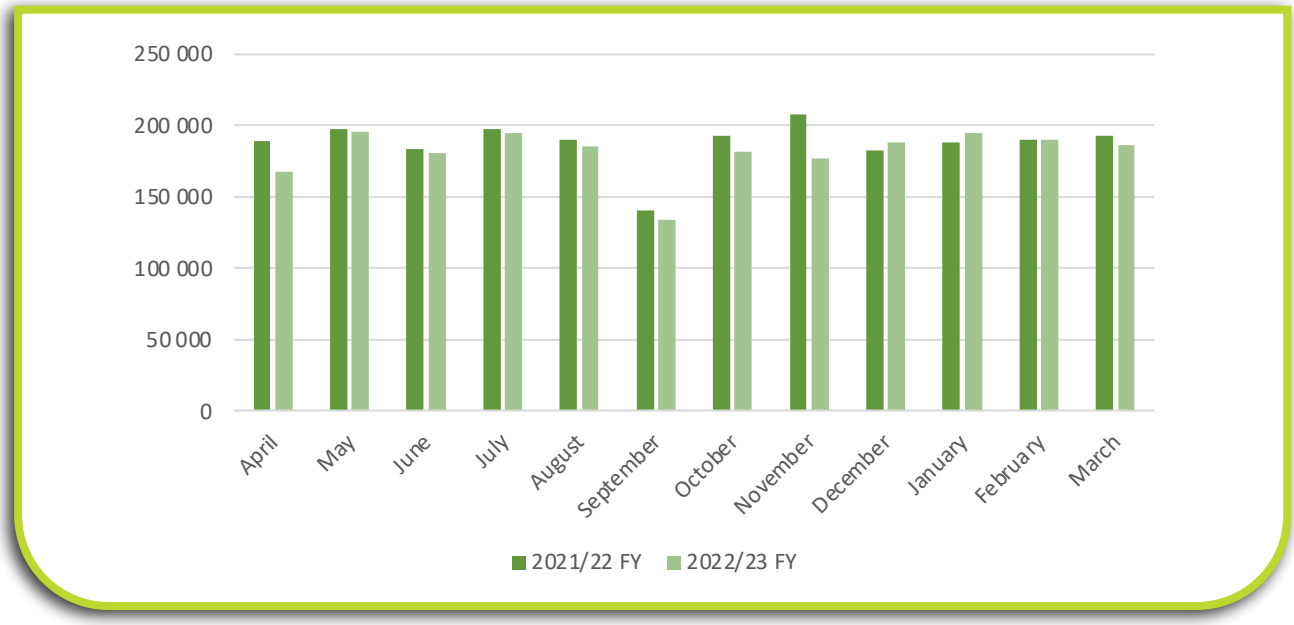


Figure 5: CD4 test volumes per month for 2021-2022 and 2022-2023.

Analyses of CD4 test volumes per CD4 result category 101-200 cells/µl demonstrated that nationally, 11.0% of all specimens reported a count ≤100cells/µl (ranging from 5.2% in KwaZulu-Natal to 13.1% in Gauteng). A further 10.9% reported counts of 101-200cells/µl. Specimens with CD4 count categories of 201-350 and 350-500 cells/µl showed little variability between provinces, with ~17% contribution per group to the total number of specimens tested. Specimens with CD4 counts >500cells/µl contributed 44.0% of total test volumes, with KwaZulu-Natal at 59.5% (i.e., the highest percentage of HIV patients doing well on therapy) and the lowest percentage of 38.4% noted in Gauteng province.

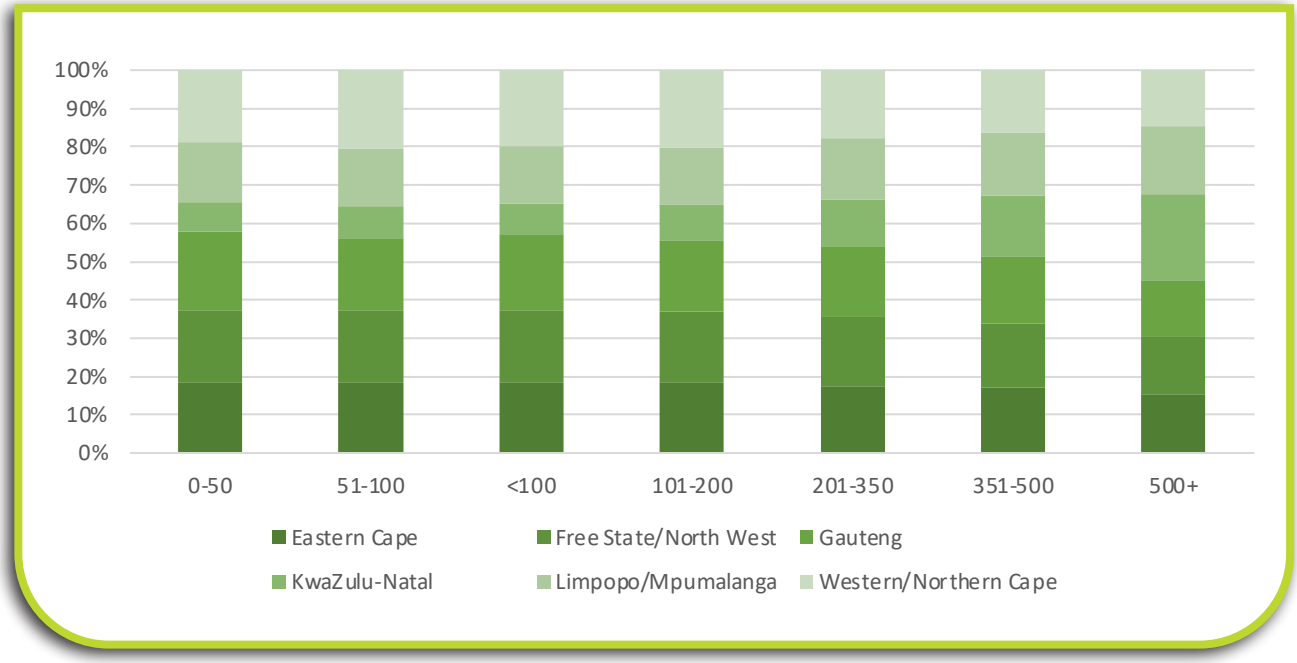


Figure 6: CD4 tests per CD4 category range by region for 2022-2023.

TAT data confirmed a national performance (all provinces) of 94.4% of specimens resulting within the prescribed cut-off of 40 hours, with an average within laboratory TAT (i.e., the testing phase) of 31 hours (ranging from 7-56 hours) across the 47 CD4-testing laboratories.

The new tender process for CD4 testing was adjudicated to Beckman Coulter for the next five-year period, with the replacement of ageing testing instruments commencing in November 2022.

Cryptococcal antigen testing

At the national level, 11.0% of all CD4 specimens tested reported a CD4 count <100cells/µl and thus qualified for a reflexed cryptococcal antigen (CrAg) test. For 2022–2023, CrAg tested volumes mirrored the CD4 trend, with a slight decrease in volumes from 214 215 in 2021–2022 to 199 364 in 2022–2023.

The national CrAg detection rate for 2022–2023 was 4.4% (compared to 6.4% in 2021–2022). Gauteng Province contributed the highest number of CrAg test volumes (27.2%), followed by 17.2% and 14.9% for the KwaZulu-Natal and Limpopo/Mpumalanga regions, respectively. The cryptococcal antigen detection rate was highest in KwaZulu-Natal at 5.4%, followed by the Eastern Cape (5.1%), with the lowest rate recorded in Gauteng (3.5%). Individual laboratory CrAg detection ranged from 7.7% at Greenpoint (Western Cape) to 1.4% at De Aar (Northern Cape) laboratories. Nineteen of 47 testing laboratories (40.4%) reported detection rates higher than the national rate of 4.4%.

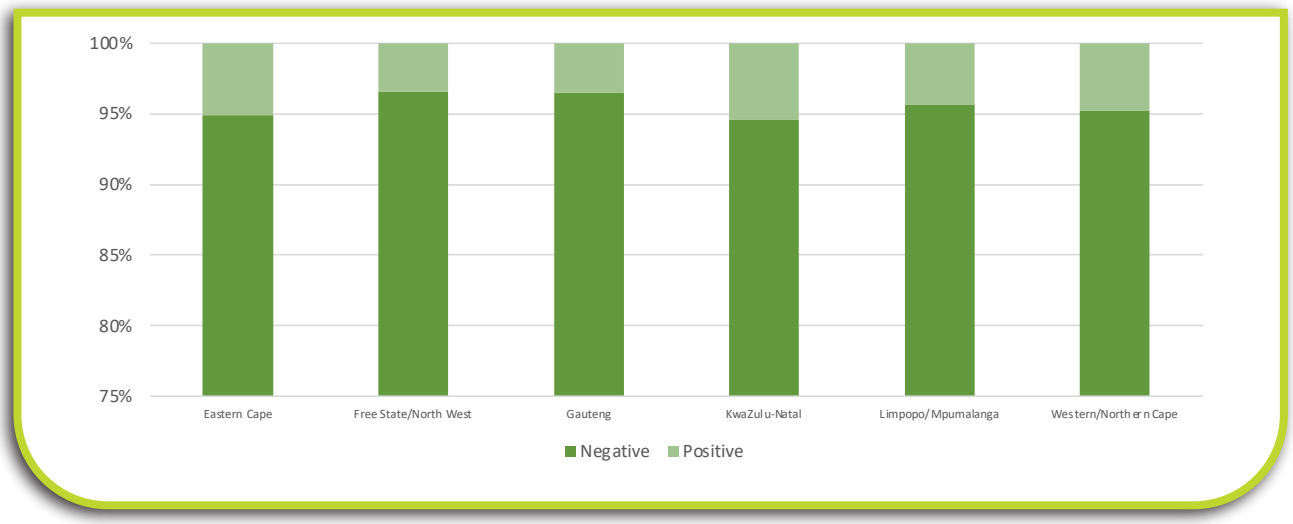


Figure 7: Distribution of the detection rate for reflexed cryptococcal antigen by region for 2022-2023.

Outputs

Training

The CD4 team provided on-site and/or virtual training for new instrument installations and additional or new staff in 14 laboratories, with 60 staff members trained.

Thirteen follow-up and troubleshooting laboratory visits were conducted to assist with identified issues requiring intervention.

The team assisted 12 laboratories with instrument verification (either new, replacement or relocated instruments), and two site audits were conducted to assist laboratories in preparation for the South African National Accreditation System (SANAS) accreditation or internal audits.

Research

The CD4 team continued with operational research focused on the development of quality assurance monitoring tools, the identification of vulnerable populations with advanced HIV-disease and cryptococcal disease, and laboratory testing cost-efficiency.

Five manuscripts were published in peer-reviewed journals[14,15,16,17,18] three as the first author.

Five outputs were presented: two at the 16th International Conference on HIV Treatment, Pathogenesis and Prevention Research in Resource-limited settings, 10-13 May 2022, Kampala, Uganda[19,20]; two at the 24th International AIDS Conference 2022, 29 July-2 August 2022, Montreal, Canada[21,22]; and one at the International Workshop on HIV and Adolescence, 5-6 October 2022, Cape Town, South Africa[23].

National HIV Viral Load Testing Programme

Overview

SA's HIV anti-retroviral (ARV) programme is the largest consumer of ARV therapy globally. The documented number of people living with HIV in South Africa has grown from 3.68 million in 2002 to 8.45 million in 2022[24]. In support of the DoH's ARV programme, the NHLS provides HIV viral load (HIV VL) testing at 17 centralised laboratories across eight provinces.

With a testing capacity of over 10.2 million tests, the laboratory footprint comprises 14 Roche cobas8800 and 30 Abbott Alinity m instruments. Moreover, high-volume testing laboratories

(Charlotte Maxeke Johannesburg Academic Hospital (CMJAH), Rob Ferreira, Mankweng, and Ngwelezane laboratories) have operational pre-analytical track systems installed to assist with workflow. A further pre-analytical track system was recently installed at the Universitas laboratory.

Operations

During 2022–2023, 6.48 million tests were performed, compared to 6.07 million during 2021-2022, constituting an increase of 6.7% (408 893 tests). Of these, 93.5% were representative of the WHO definition of virological suppression (<1 000 copies/mL). Using the lower limit of <50 copies/mL, viral suppression was indicated in 69.5% of tests.

Monthly test volumes varied between 401 631 and 586 326. Regionally, KwaZulu-Natal processed the highest percentage of HIV VL tests at 29.8% (1 929 069), followed by Gauteng with 23.3% (1 509 439). The Northern Cape performed the least number of HIV VL tests, contributing 1.2% (79 286).

For the period under review, HIV VL testing TAT improved further to 95% of tests reported within 96 hours (an increase from 93% for the previous reporting period), exceeding the NHLS APP target of 82%. Laboratory performance improved as a result of ongoing monitoring, the provision of training and technical support, coupled with instrument software improvements and updates.

A new tender process for HIV VL testing for the next five years was published on February 24, 2023, and closed for bid submission on 23 March 2023. With the new tender process, the HIV VL testing footprint will expand from 17 to 28 laboratories. The outcome of the tender is likely in the first quarter of the 2023–2024 financial year.

Outputs

Training

To ensure standardisation across the 17 testing laboratories, the team provided training for both new employees and existing staff members in need of refresher training. In addition, super-user workshops were held to further refine laboratory troubleshooting skills. Two successful super-user workshops were run during 2022–2023. Abbott Alinity m users were hosted at a super-user workshop held at Tygerberg Virology Laboratory (31 October - 4 November 2022), while the Roche Cobas super-user workshop was held from 21-25 November 2022 at the Roche Scientific Campus in Midrand, Johannesburg.

Tygerberg and Ngwelezane were recognised as the top-performing HIV VL testing laboratories for Abbott and Roche, respectively. Tshepong (Abbott) and Tambo Memorial (Roche) were awarded honours for the most improved HIV VL testing laboratories for 2022.

Image 3: Abbott Alinity m super-user group trained at Tygerberg Virology laboratory, 31 October to 4 November 2022 with representation from all Abbott HIV VL testing laboratories.

Image 4: Roche Cobas super-user group trained at the Roche Scientific Campus, Midrand, 21-25 November 2022.

Regional laboratory systems strengthening

The NHLS is a member of the African Society for Laboratory Medicine's (ASLM) Laboratory Systems Strengthening Community of Practice (LabCoP) sub-group. LabCoP fosters Sub-Saharan knowledge exchange and joint learning by linking country teams across Africa with global experts. The aim is to share knowledge and best practises about laboratory systems to foster strengthening among ministries of health. Although a strong focus is placed on the scale-up of HIV VL testing, other focus areas include monitoring and evaluation, early infant diagnosis, TB, and COVID-19.

Annually, country scorecards are used to review progress and achievements. Each country generates a work plan based on the gaps identified by the review and plans appropriate interventions. Although South Africa attains high scores in most aspects, it lags in the monitoring of HIV VL result utilisation. This gap is being addressed in the 2023 work plans through a pilot project using a laboratory-based cohort.

The sixth annual LabCoP meeting was held in Cape Town from 11-13 October 2022, with the theme 'Strengthening Laboratory Systems and Networks Through the Integration and Optimisation of Diagnostic Services'. Dr Chetty opened the meeting and was a panel member on priorities for laboratory systems and network consolidation. Dr Chetty also participated in the newly created Laboratory Director's Forum. Professor Wendy Stevens provided key insights on discussions focused on integrated testing services. Dr Naseem Cassim, a member of South Africa's LabCoP team, presented an approach to the cost-effectiveness analysis of laboratory services.

Image 5: South African LabCoP team at the 6th Annual LabCop Meeting, 11-13 October 2022, Cape Town, South Africa. Team members (from left to right): Dr Lucia Hans, Dr Kamy Chetty, Somayya Sarang, Dr Pedro da Silva, Dr Naseem Cassim (all NHLS) and Dr Leigh Berrie (CDC, South Africa).

Publications

Two abstracts were presented: an oral presentation at the 16th International Conference on HIV Treatment, Pathogenesis and Prevention Research in Resource-limited settings, 10-13 May 2022, Kampala, Uganda[25] and a poster presentation at the 24th International AIDS Conference 2022, 29 July-2 August 2022, Montreal, Canada[26].

National Early Infant Diagnosis HIV PCR Testing Programme

Overview

Prevention of mother-to-child transmission (PMTCT) of HIV is essential to attaining the global goal of ending the AIDS epidemic. In 2021, the Joint United Nations Programme on HIV/AIDS reported a decrease in South Africa's mother-to-child transmission rate from 3.9% to 3.3%[27].

A new tender process for early infant diagnosis (EID) assays was adjudicated to Roche Diagnostics at the end of 2022 for a period of three years. Under the tender, all existing instruments will be replaced with new cobas6800 and cobas8800 platforms, while the recently released cobas5800 will replace existing CAPCTM units.

Operations

In 2022–2023, 657 061 HIV EID PCR tests were performed, a 6% decrease from the 699 250 in 2021–2022. The monthly testing volumes ranged from 48 904 to 58 359, with KwaZulu-Natal processing the majority of tests (28%, 184 074), followed by Gauteng (23%, 150 123). The Northern Cape reported the least number of tests, reflecting 1%, 9 413. Nationally, the detection rates were lower, 1.39% in 2022–2023 compared to 1.41% in 2021–2022, with KwaZulu-Natal reporting the lowest provincial detection rate of 0.8%.

EID testing TAT for 2022–2023 improved further to 93% of tests reported within 96 hours from 91% for the previous reporting period, surpassing the NHLS APP target of 81%.

Extracted EID-tested data is used to monitor and evaluate the national EID programme; this is done jointly with the NHLS Central Data Warehouse (CDW) and NICD. The availability of facilities, missed diagnostic opportunities (MDOs), and "Reports for Action" reports make it possible to expedite the processing of all HIV PCR-positive results and ensure that neonates who are HIV-positive receive medical attention. The MDO reports also make it possible to carefully track specimen rejection rates and prioritise training initiatives to lower them.

Outputs

Training

Consistent support visits and mentoring at facilities have contributed to greater acceptance of HIV PCR testing and minimised specimen rejection rates. Information is passed to the relevant DoH representatives at national, regional, district, and facility-based stakeholder engagements.

Sister Tsakani Mhlongo is tasked with facility support visits and conducts training for HCWs involved in the management of newly born babies and infants, with training targeted at clinicians, nursing staff, counsellors, and facility managers. In 2022–2023, 1 498 HCWs (from 817 facilities) were trained, and 192 healthcare facilities (HCFs) were supported.

The updated PMTCT guidelines of 2019 required PCR testing to be performed on all infants born to mothers living with HIV at six months and HIV rapid testing to be performed on all infants, regardless of their HIV status, at 18 months. Dolutegravir was introduced for the maternal HIV regimen, as a novel drug for infant prophylaxis[28]. Following the guideline revisions, training was prioritised at hospitals, maternity outpatient units, and primary healthcare clinics, which led to a national birth HIV DNA PCR uptake of 94% for the reporting period.

National HIV Drug Resistance Testing Programme

Overview

There are five NHLS HIV drug-resistance testing laboratories located throughout South Africa: at CMJAH (servicing Gauteng), Tygerberg (servicing the Western and Eastern Cape), INkosi Albert Luthuli Central Hospital (IALCH, servicing KwaZulu-Natal), Universitas (servicing the Free State and the North West), and Dr George Mukhari (DGM) laboratories (servicing Northern Gauteng, Limpopo, and Mpumalanga).

HIV drug-resistance testing is recommended in patients failing protease or integrase strand transfer inhibitor based ART provided that patients have been exposed to protease inhibitors or dolutegravir for at least two years and meet the definition of confirmed virological failure.

Currently, only Tygerberg, IALCH and CMJAH offer integrase drug-resistance testing. Any requests for integrase testing are thus referred to these laboratories.

Operations

Across all laboratories, 4 345 specimens were processed for HIV drug-resistance testing in 2022–2023 (compared to 4 549 in 2021–2022).

Three laboratories, CMJAH (37%), Tygerberg (26%), and IALCH (22%) processed the bulk of the tested volumes. CMJAH serves as a back-up laboratory for DGM, where no testing has been performed since November 2022 due to problematic equipment, explaining the higher proportion of tests performed at CMJAH.

Four laboratories are SANAS-accredited for HIV drug-resistance testing, with the DGM laboratory aiming to be accredited once operations recommence.

Outputs

Standardisation

A new HIV drug-resistance testing kit, combining all relevant target genes (including integrase) was validated. The validation report is under review by the NHLS HIV drug-resistance committee and will be submitted to HTA, once finalised. Assay verification at the various laboratories is ongoing.

National NHLS HIV Drug-Resistance Committee

Dr Kim Steegen, a senior medical scientist, continued to chair the committee in 2022–2023. The committee guides best practises and aims for standardisation across the diagnostic service.

Laboratory information system interface

To date, the interface of the laboratory information system (LIS) to generate HIV drug-resistance reports has been outsourced to an external company. Due to its high cost and delays in updates when a new version of the interpretation algorithm is available, NHLS IT is re-developing the interface in-house. This development commenced at the end of 2022 and is expected to be completed and rolled out in the first quarter of 2023-2024.

Publications

Five publications were published in peer-reviewed journals[29,30,31,32,33] and three were first-authors. A research abstract was presented as a poster at the 24th International AIDS Conference, 29 July-2 August 2022, Montreal, Canada[34].

National HIV counselling/testing and TB campaigns and events

NHLS has supported World AIDS Day and World TB Day commemorations throughout South Africa with the deployment of Xpert testing mobile laboratories to provide onsite molecular diagnostics for TB testing.

For World AIDS Day 2022, the NHLS participated in activities to mark the event under the theme 'Equalise and Integrate to End AIDS'. The national event was held at the Dr Petrus Molemela Stadium in Bloemfontein, Free State. The commemoration came as South Africa prepares to begin piloting injectable pre-exposure prophylaxis (PrEP) in 2023, as recommended by the WHO. The PrEP injection, to be taken every other month, could prevent as many as 52 000 new HIV-infections.

Image 6: NHLS staff members involved in planning, logistics, and testing in support of World AIDS Day, Free State.

LINKAGE-TO-CARE AND DATA MANAGEMENT FOR PROGRAMMATIC MONITORING

National Laboratory Results SMS Printer Programme

Overview

SMS printers are placed at 2 232 primary and community health care facilities across South Africa in all 52 districts where patients are being initiated on ART. The rationale for this deployment was to facilitate the rapid delivery of results for same-day ART initiation. SMS printers deliver results from smear microscopy, Xpert MTB/RIF Ultra, core HIV testing (CD4, HIV VL, HIV EID PCR), ART monitoring (creatinine clearance and hepatitis B surface antigen), and advanced HIV disease (reflex CrAg). Any amended results from those listed and notifications of rejected specimens are also relayed via SMS printers. SMS printers operate bi-directionally: results are 'pushed' out but can also be retrieved when HCWs scan the respective NHLS barcodes.

Operations

The national printer platform provides substantial coverage for HIV/TB result delivery to healthcare facilities. However, with the scale-up of ART services to all 3 800 healthcare centres, there is a gap of 1 568 facilities where printers have not been deployed.

During 2022–2023, 2.08 million results were successfully delivered to HCFs through this mechanism (compared to 8.89 million results delivered in 2021–2022). The significant decline in output was a result of contract expiration between NHLS and the third-party supplier. The transmission of results was suspended in August 2022.

In the interim, result delivery continued via other modalities, namely the traditional provision of hardcopy results and HCWs accessing results via the webview portal using their user-specific credentials.

To further align with data security requirements, the service is being integrated within NHLS IT, and once testing has been completed, the delivery of results via the SMS printer mechanism will resume.

ADDITIONAL GRANT FUNDED ACTIVITIES TO SUPPORT THE NATIONAL PROGRAMMES

Global Fund COVID-19 Response Mechanism 2.0 Funding

Overview

Through the COVID-19 Response Mechanism (C19RM2.0), the Global Fund allocated funds to NHLS for COVID-19 related activities under
three categories:

1. control and containment interventions;
2. risk mitigation measures; and
3. expanded reinforcement of key aspects of health and community systems. Under the COVID-19 control and containment measures category, the expansion of NHLS' next-generation sequencing capacity was approved.

Therefore, the aims of the project are to increase the capacity of laboratory sequencing services to assess and monitor the circulation of SARS-COV-2 variants of interest or concern through the capacitation of laboratories with next-generation sequencing equipment and, through access to sequencing, further support COVID-19 disease control and other public health interventions of interest (TB, HIV, oncology, etc.).

Sequencing for HIV drug resistance is conducted at five NHLS laboratories, namely: The IALCH virology laboratory (KwaZulu-Natal); the DGM and CMJAH laboratories in Gauteng; the Universitas virology laboratory in the Free State; and the Tygerberg Hospital virology laboratory in the Western Cape. Since the five laboratories were also historically setup with Global Fund support and conduct testing using Sanger-based sequencing methods, it made sense to further capacitate the same laboratories with next-generation sequencing capability.

Funding was provided for the procurement of the following equipment:

- Major equipment: next-generation sequencing platforms (one in each of five laboratories); and
- Supporting or minor equipment: -80°C freezers; –20°C freezers; fridges; single- and multi-channel pipette sets; fluorometers; magnetic stands; and micro centrifuges (one per each of the five laboratories).

Operations

As per Supply Chain Management requirements, a competitive bid process was initiated for the next-generation sequencing platforms and a 'request for quotes' was issued for each of the minor pieces of equipment published. For the reporting period, the tender for next-generation sequencing platforms was awarded and delivery of equipment is anticipated in the 2023–2024 financial period. Micro centrifuges, -80°C freezers and fridges have been procured and delivered to the respective laboratories. Outstanding deliveries will be completed in the 2023–2024 reporting period.

Centres for Disease Control and Prevention Grant Funded Activities

Overview

The overall objective of these funded activities is to strengthen the pre- and post-analytical phases at the facility level, improve the HIV VL value chain, reduce the TAT and specimen rejection rates, and increase efficiencies in the dissemination of results across the 27 U.S. President's Emergency Plan for AIDS Relief (PEPFAR)-supported districts.
Key components include:

- Supporting HIV VL testing laboratories and performance monitoring;
- Use of eLABS, a digital health intervention, to strengthen the clinical-laboratory-patient interface within the HIV VL value chain;
- Piloting of an eLABS patient support module for feasibility and usability in sending appointment reminders, messages directing actions where specimens have been rejected or results are abnormal, and educational messages reinforcing treatment adherence, etc.; and
- Continuous Quality Improvement Project as a tool to monitor the performance of HCFs with the aim of fostering future sustainability. Seven indicators are monitored: use of eLABS devices; number of specimens scanned by the facility; number of specimens collected and delivered by the courier; specimen rejection rates; TAT; and results for action acknowledged.

Operations

For 2022–2023, ~5.5 million specimens were created by facilities on eLABS, with HIV VL comprising 2.5 million (46%) of these. Of the registered HIV VL specimens, 0.8 million generated 'results for action' status, of which 71% were acknowledged by HCWs. For specimens tracked by eLABS, 2.1% were rejected (for various reasons), and TAT averaged 57 hours from specimen collection to authorisation of results.

During 2022–2023, 728 HCFs were assessed as per the Continuous Quality Improvement project indicators. Following assessments, quality improvement plans were compiled jointly with facility staff, and progress was monitored monthly.

An annual PEPFAR workshop was held in October 2022, where Continuous Quality Improvement assessment results were shared and discussed.

A series of meetings were held with the Western Cape Department of Health, City of Cape Town Health Metro Services, NHLS, CDC, USAID, and the eLABS team to pave the way forward for eLABS implementation in the province. A consensus was reached to pilot eLABS at selected Metro Health Services facilities.

A series of virtual meetings were held with various NHLS Area and Business Managers to explore the proposed liaison role of the eLABS technical trainers in relation to NHLS matters that require escalation. The proposal was welcomed, and further engagements are planned.

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48. David A, *et al*. Evaluation of self-collected oral swabs for M. tuberculosis detection in adults using the Xpert MTB/RIF Ultra assay. SATB, Durban, September 2022. Poster Presentation

49. Scott L, *et al*. Recommendations for best practices for the use of oral swabs in detecting Mycobacterium tuberculosis SATB, Durban, September 2022. Poster Presentation.

50. V. Keshav, *et al*. Diagnostic performance of regulatory approved rapid antigen point-of-care tests in the Omicron BA.4/BA.5 era in South Africa, AACC Poster Presentation, Montreal Canada 21st – 23rd September 2022.

51. Peloakgosi-Shikwambani K, David A, Scott L, Da Silva P, Stevens, W. Evaluation of the Tianlong TB-DNA nucleic acid extraction kit for the detection of Mycobacterium tuberculosis complex in culture isolates. Wits MBRT Research Day, December 2022.

52. Scott L, *et al*. Exploring the spatial heterogeneity of South Africa's national laboratory Xpert MTB/RIF data and the value of a centrally connected molecular diagnostic. Wits MBRT Research Day, December 2022.

53. Scott. LE. "Use of laboratory data to derive epidemiologically relevant information during a pandemic". 3rd Laboratory Medicine Conference on Lab Diagnostics: the key to controlling pandemics, part of Africa Health Exhibition and Congress, Gallagher Convention Centre, Midrand, South Africa, October 2022.

54. Stevens.W, Scott.L.E. "Diagnostics: Future proofing laboratories". 2nd South African Medical Research Council Sub-Saharan Africa Funders Forum, 22nd November 2022, Cape Town.

ACADEMIC AFFAIRS, RESEARCH AND QUALITY ASSURANCE

Prof Koleka Mlisana
Executive Manager: Academic Affairs, Research, and Quality Assurance

INTRODUCTION

The NHLS Academic Affairs, Research, and Quality Assurance (AARQA) Division is entrusted with the responsibility of enhancing academic affairs, teaching, and training. Additionally, the division is tasked with advancing the organisation's research and innovation initiatives while ensuring the implementation of quality improvement processes across the platform. The division comprises two departments, namely: Academic Affairs and Research (AAR), and Quality Assurance (QA), that are collectively responsible for overseeing the implementation and management of the strategic and operational mandate of the division nationally.

AARQA is responsible for maintaining and establishing effective partnerships with health science faculties at South African medical universities, comprehensive universities (CUs) and universities of technology (UoTs).

In collaboration with the Area Managers, the QA Department is responsible for:

- Enhancing the NHLS QA systems and processes;
- Maintaining and acquiring accreditation and certification of the laboratories and support service departments across the country; and
- Managing all NHLS laboratories, private pathology laboratories and other African and United States of America laboratories' proficiency testing schemes (PTSs).

Academic Affairs and Research Department

The Academic Affairs and Research (AAR) Department is responsible for the teaching, training, and research mandate of the NHLS. In collaboration with the medical universities, CUs and UoTs, the department supports an academic platform staffed with skilled personnel that provides technical pathology training.

The training output and laboratory services are provided by skilled pathologists and medical scientists, technologists, and technicians. The department provides support for research and innovative activities that are mainly undertaken by jointly appointed staff within academic institutions. The aim is to ensure cutting-edge, locally responsive research that focuses on translational research to enhance service platforms and influence health policy. Academic institutions in partnership with the NHLS are listed below:

Table 1 Academic institutions in partnership with the NHLS.

Medical Universities	Universities of Technology and Comprehensive Universities
• *Nelson Mandela University (NMU) • Sefako Makgatho University (SMU) • University of Cape Town (UCT) • University of Free State (UFS) • University of KwaZulu-Natal (UKZN) • University of Limpopo (UL) • University of Pretoria (UP) • Stellenbosch University (SU) • University of the Witwatersrand (Wits) • University of the Western Cape (UWC) • Walter Sisulu University (WSU)	• Cape Peninsula University of Technology (CPUT) • Central University of Technology (CUT) • Durban University of Technology (DUT) • Mangosuthu University of Technology (MUT) • *Nelson Mandela University (NMU) • Tshwane University of Technology (TUT) • University of Johannesburg (UJ) • Vaal University of Technology (VUT)

*NMU is offering a Medical degree and the degree in Medical Laboratory Science.

AAR is also responsible for overseeing the management and support of the implementation, monitoring and evaluation of research strategic initiatives of the NHLS and the financial administration and management of grant-funded projects within the organisation. The department consists of the following three offices:

- Research Development and Innovation;
- Monitoring and Evaluation;
- Grants Programme Management; and
- Grants Finance Management

Research, Development and Innovation

Teaching, Training and Research

An amount of R260 082 954.00 was transferred to the NHLS for teaching, training, and research (TTR) during the 2022–2023 financial year. The TTR grant is awarded to the NHLS by the government sector to ensure adequate implementation of the teaching, training and research needs of the NHLS. There has been a noticeable decrease in the TTR amounts given to the NHLS over the past five years (Figure 1).

FIGURE 1: Teaching, Training and Research amounts received by the NHLS for the past five years.

Teaching and training

The delivery of the teaching, training, and research mandate of the NHLS is a shared responsibility between the NHLS and medical universities across South Africa. Vocational training is provided to registrars, intern medical scientists, and student medical technologists working towards qualifications as pathologists, medical scientists, and technologists, respectively, in compliance with the HPCSA requirements.

Table 2 Current NHLS vocational trainees by discipline as of 31 March 2023.

Region	Diploma	BHSc	Articulating Employees	Work Integrated Learning (WIL)	Medical Scientist Interns (MSI)	Registrars	Total
Eastern Cape	13	11	5	13	0	1	43
Free State and North West	30	14	1	30	6	21	102
Gauteng	83	26	8	83	51	133	384
KwaZulu-Natal	36	49	12	36	9	30	172
Limpopo	0	0	0	0	0	0	0
Northern Cape and Western Cape	3	30	0	3	20	62	118
Total	**165**	**130**	**26**	**165**	**86**	**247**	**819**

During the 2022–2023 financial year, there were 819 trainees from various training platforms in NHLS regions. The table above provides more information on the number of trainees in each pathology discipline.

Registrar and Medical Scientist Intern training intake

The NHLS is the sole provider of training for pathology registrars in the country. Each year, the NHLS admits trainees, namely Medical Scientist Interns (MSI) and pathology registrars. The below figure details the number of trainees admitted to the NHLS from 2018–2019 to 2022–2023. In summary, a total of 213 and 282, MSI and Registrars were admitted for training in the NHLS in the past five years.

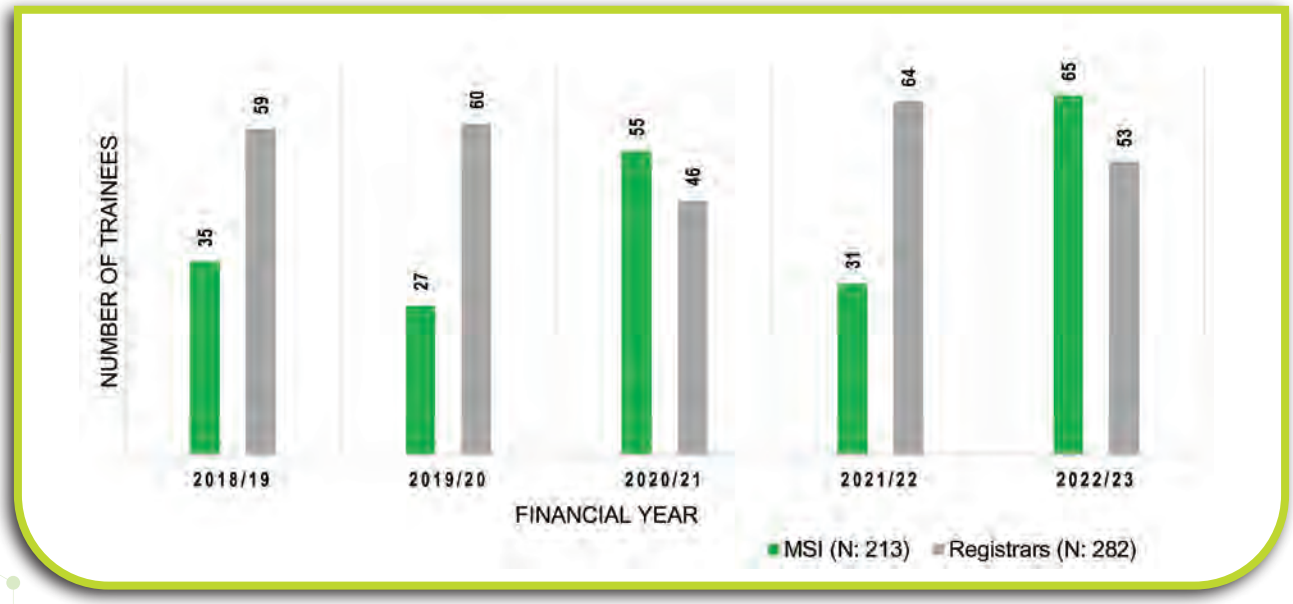


FIGURE 2: Number of Registrars and MSI admitted for training in the NHLS

Registrar and Medical Scientist Intern pass rates

To date, the pass rate of registrars, who are trained to be pathologists, has been increasing for the Colleges of Medicine in South Africa (CMSA) Part I examinations, from 68% (2018) to 78% (2022). As depicted in the graph below, pass rates for CMSA Part II (exit) examinations improved from 40.5% in 2018 to 74% in 2021 and slightly decreased to 64% in 2022.

FIGURE 3: NHLS registrar pass rates for CMSA examinations for parts 1 and 2 from 2019 to 2022.

NHLS also provides a training platform for intern medical scientists, and in the reported financial year, 55, 15, and 16 medical scientists completed their training in 2020, 2021,and 2022, respectively (Table 3).

Table 3 The intern medical scientists completed training and certified by the HPCSA from 2019 to 2022.

Discipline	Year			
	2019	2020	2021	2022
	Completed	Completed	Completed	Completed
Anatomical Pathology		2		2
Chemical Pathology	4	12	3	7
Genetic Counselling		2		1
Haematology/Molecular Biology	5	11	5	4
Human Genetics	3	9		1
Immunology		3	2	3
Medical Microbiology		8	4	7
Virology	2	8	1	6
Total	**14**	**55**	**15**	**31**

Project ECHO

The NHLS Project Extension for Community Healthcare Outcomes (ECHO) stands as an innovative remote training solution, significantly expanding and enhancing the effectiveness of the platform. This dynamic approach facilitates the seamless sharing of knowledge and the comprehensive skill development of laboratory medicine professionals nationwide.

NHLS Project ECHO has been effectively implemented in 92 hubs, spokes, and mini-hub sites, with 44 sites implemented in 2018, 42 in 2019, and 6 in 2022. There were no sites implemented in 2020 and 2021 due to COVID-19 restrictions (Figure 4). These sites are implemented at tertiary (13%), regional (35%), and national central laboratories (29%) in eight provinces, as indicated in Figures 5 and 6 below. Expansion to a further 20 sites is planned for 2023.

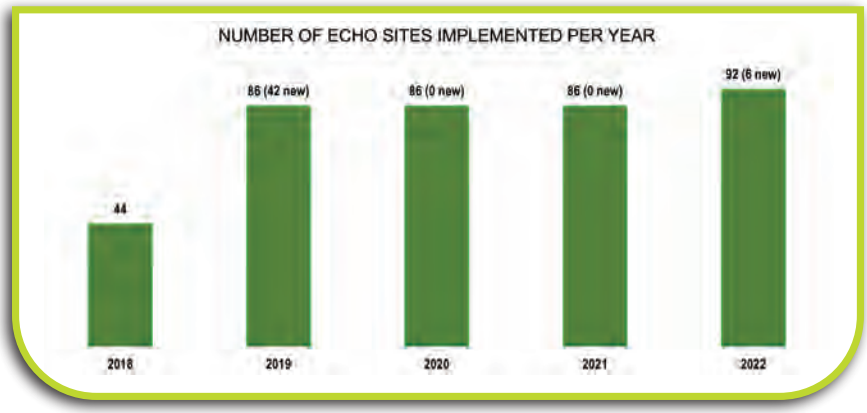


FIGURE 4: Cumulative number of ECHO sites implemented from 2018 to 2022.

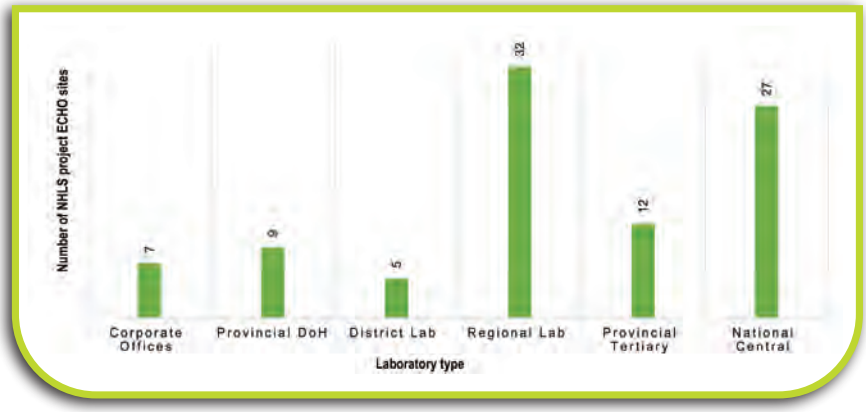


FIGURE 5: NHLS Project ECHO sites per laboratory type.

FIGURE 6: Project ECHO sites per province.

During the 2022–2023 financial year, 391 Project ECHO sessions were conducted, 67% of which were discipline-specific sessions (261), presented by 204 subject matter experts (Figure 7), whereas 33% were NHLS-specific operational meetings. Attendance varied widely, with discipline-specific and operational sessions attracting between 206 to 1243 individual participants each. The attendees comprised registrars, pathologists, professional and intern technicians, technologists, medical scientists, and additional healthcare workers (as outlined in Table 3). Multidisciplinary sessions were also conducted, including the NICD Scientific Forum, as well as a special Public Health session on Gender-based Violence.

Table 4 NHLS Project ECHO sessions per discipline and attendance (April 2022 - March 2023).

Discipline	Number of NHLS Project ECHO Sessions	Individual Attendees per Professional Category per Discipline: April 2022 to March 2023							
	April 2022 to March 2023	Individual Attendees per Discipline	Registrars	Pathologists	Medical Scientists	Technicians & Technologists	Intern Medical Scientists	Intern Technicians & Technologists	Other
Anatomical Pathology	27	775	104	88	68	366	52	26	71
Chemical Pathology	80	577	92	68	86	188	81	3	59
Haematology and Immunology	42	1 190	144	121	153	516	111	10	135
Human Genetics	8	267	14	21	66	37	46	2	81
Microbiology	17	447	68	70	69	134	60	-	46
Multidisciplinary	29	**1 243**	45	86	172	394	92	6	448
Operations	1	219	1	1	17	110	12	-	78
Public Health	8	206	3	7	35	58	25	-	78
Quality Assurance	10	739	59	51	58	361	52	6	152
Research Development and Innovation	15	627	48	67	125	135	122	27	103
Virology	24	465	61	58	97	144	60	-	45

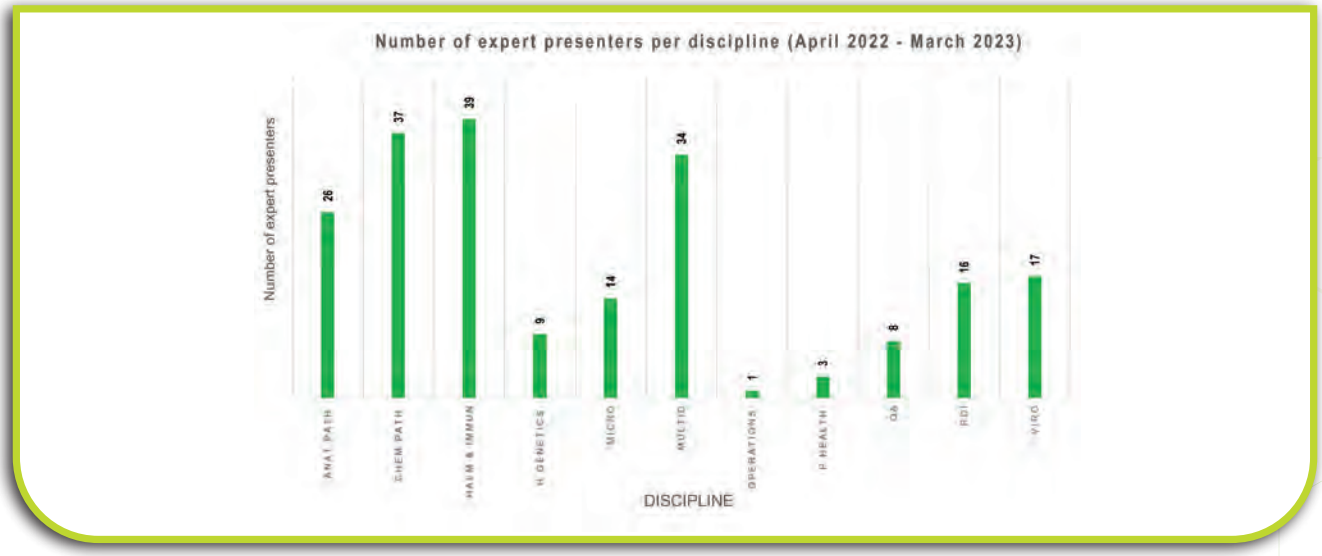


FIGURE 7: Number of Expert presenters per discipline.

RESEARCH

Research material and data access

The NHLS has continued to support research through the provision of access to data, biospecimens, and other NHLS resources for research purposes. A total of 1264 applications for access to NHLS resources for research purposes were submitted between 2019–2020 and 2022–2023 (a breakdown of the types of resources requested is shown below). The number of applications dropped sharply from 347 in 2019–2020 to 280 in 2020–2021 and started increasing steadily, reaching 332 in 2022–2023.

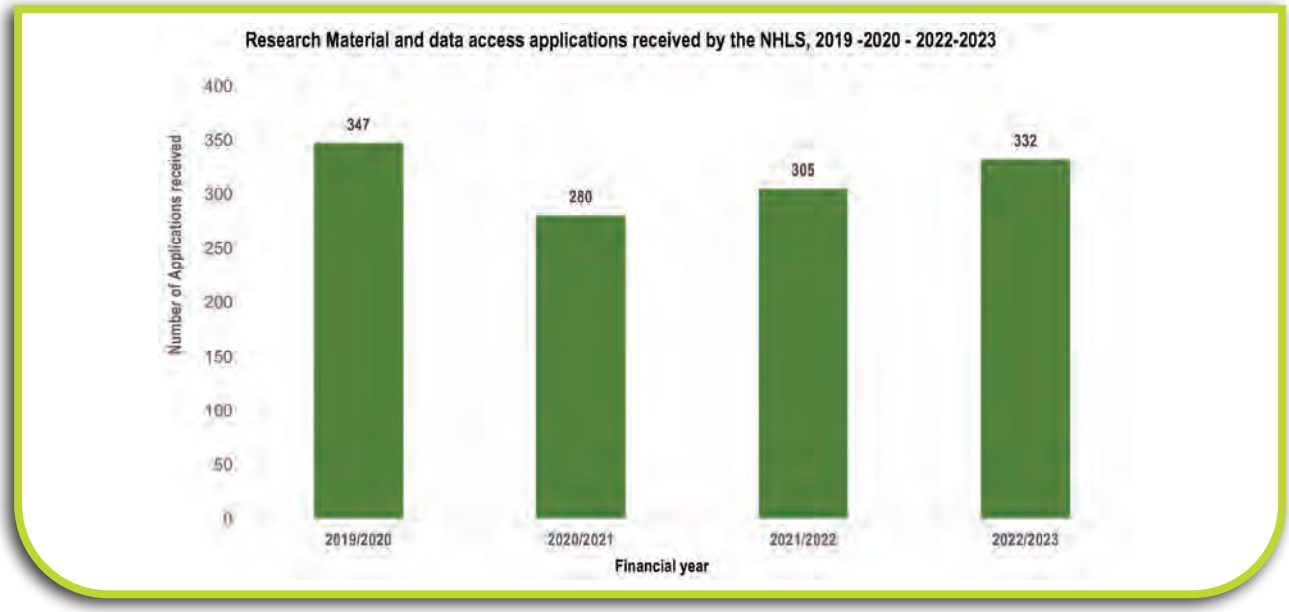


FIGURE 8: Research requests received by AAR from 2019-2020 to 2022-2023.

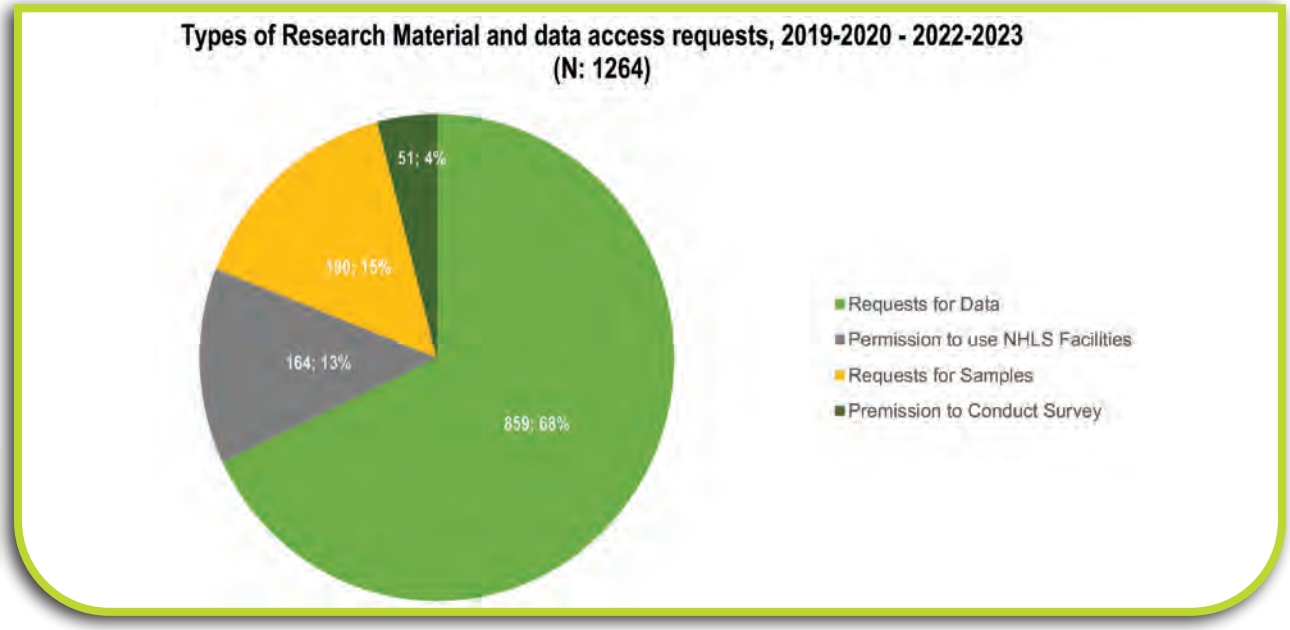


FIGURE 9: Type of research requests received by AAR from 2019-2020 to 2022–2023.

Research publication

Over the past four financial years (2019–2020 - 2022–2023) a total of 2661 peer-reviewed articles that were co-authored by NHLS researchers were published in indexed journals. During the 2022–2023 financial year, 664 articles were published.

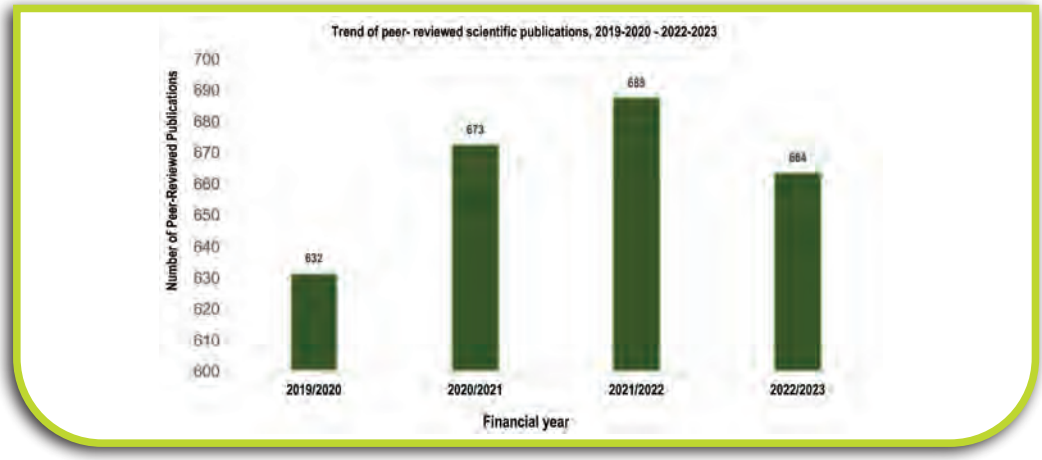


FIGURE 10: Number of peer-reviewed research publications.

GRANTS FINANCE MANAGEMENT SUPPORT

Analysis of project status

The Grants Finance Office (GFO) managed a total of 334 projects during the 2022–2023 financial year; 73 new projects were received in the 2022–2023 financial year. The below figure illustrates the number of managed projects in the past four years. There is a decline in the number of projects managed by AARQA; this highlights the urgent need for the NHLS Grants Office to explore new grantors and continuously improve the functioning of the office. A lot of effort has gone into establishing grants management processes and providing support to Principal Investigators.

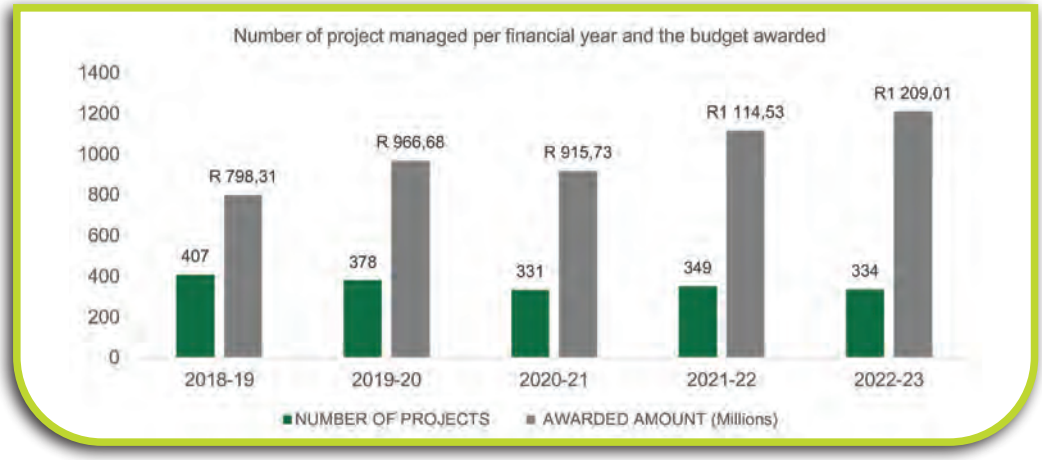


FIGURE 11: Number of projects and awarded budget managed by the NHLS grants office.

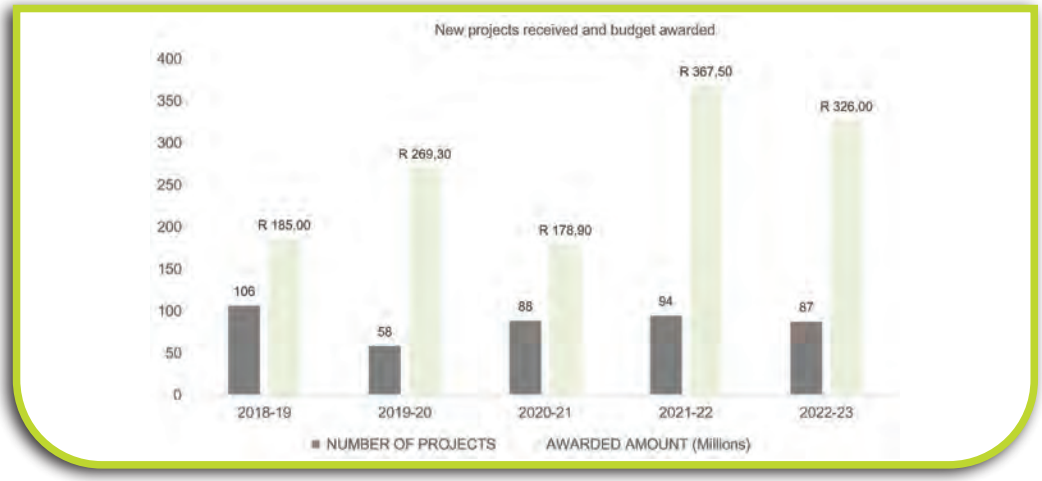


FIGURE 12: Trend of new projects received, and budget awarded in the past five years.

Funds available from the top ten grantors as of 31 March 2023

The table below shows that the top ten grantors contribute a total of 92% (R1 110.1 million) of the total budget of R1 209.5 million. A total of R804.5 million (67% of the total budget) was spent during the 2022–2023 financial year (Table 4). A proportion of 12% (R140.78 million) of the total budget was made up of new grants received in the 2022–2023 financial year (Figure 12).

Table 5 Top Ten Grantors managed by the grants finance office.

Grantors	Current year budget	Current year expenditure	Commitments	Total expenditure	Avaliable balance	Number of projects	% Spent
Centres for Disease Control and Prevention	R497,591.97	R333,504.50	R9,679.12	R393,840.22	R103,751.75	24	79%
National Department of Health	R399,155.74	R72,010.78	R3,509.13	R208,903.52	R190,252.21	17	52%
Department of Science and Technology	R40,174.00	R36,411.40	R0.00	R37,065.39	R3,108.61	3	92%
World Health Organization	R34,414.78	R8,325.74	R739.83	R20,225.16	R14,189.62	10	59%
The Biovac Institute	R32,011.44	R17,957.46	R5.32	R18,164.23	R13,847.21	1	57%
Human Sciences Research Council	R23,272.94	R4,122.67	R898.31	R17,459.54	R5,813.40	1	75%
NHLS Research Trust	R23,180.41	R5,436.37	R1,231.23	R10,492.63	R12,687.78	124	45%
African Field Epidemiology Network	R22,753.78	R6,947.03	R1,306.89	R19,039.77	R3,714.01	5	84%
Wits Health Consortium	R22,031.64	R1,921.22	R1,215.33	R12,351.65	R9,679.99	2	56%
Ecohealth Alliance	R15,561.34	R14,265.74	R29.78	R14,913.96	R647.38	1	96%
Other	R99,302.69	R29,382.83	R2,865.38	R52,048.76	R47,253.93	146	52%
Total	**R1,209,450.74**	**R530,285.73**	**R21,480.31**	**R804,504.84**	**R404,945.90**	**334**	**67%**

RESEARCH FUNDING

NHLS Research Trust

A total of 102 applications have been received in the past three financial years, from financial years 2021 to 2023. Fourteen percent of the applications were for the research grant with a maximum award of R500 000; five percent were for the Research Progression Grant with a maximum award amount of R250 000; and 83 percent were for the Development Grant with a maximum award amount of R100 000.

The status of the applications is reflected in the table below.

Table 6 NHLS Research Trust applications update.

Application Status	2021				2022				2023			21/22/23
	Development	Research Progression	Research	All	Development	Research Progression	Research	All	Development	Research Progression	All	Total
	R100 000	R250 000	R500 000		R100 000	R250 000	R500 000		R100 000	R250 000		
Cost Centre Opened	30		14	44	18			18			0	62
Rejected	12	1		13	2	1		3			0	16
Sent for Peer Review				0				0			0	0
Reviewed - Pending NHLSRT Input	0			0	19	1		20	2	2	4	24
Total	**42**	**1**	**14**	**57**	**39**	**2**		**41**	**2**	**2**	**4**	**102**

Kick-start Project Funding

Kick-start Projects Funding (K-Project Funding) serves as a research grant initiative extended by NHLS, designed to stimulate research among NHLS staff members who are embarking on their research initiatives and currently ineligible for funding from alternative sources. K-Projects Funding was created to provide young researchers with the opportunity to attract competitive grants to kick-start their research careers. The ethos of K-Project Funding is to encourage and support developmental research for emerging researchers, including Registrars, emerging medical scientists, and other NHLS staff conducting research. The table below provides a summary of the K-Project funding applications and the status for the 2021 – 2023 financial years. Of the 42 applications received in the past three years, only 1 /42 (2%) was rejected.

Table 7 K Funding (2021 to 2023).

Category	2021	2022	2023	Grand total
Cost Centre Opened	19	17		36
Rejected	1			1
Sent for Peer Review		1	2	3
Amendments requested		2		2
Grand Total	**20**	**20**	**2**	**42**

QUALITY ASSURANCE

Accreditation and certification

The implementation of a Quality Management System (QMS) in both laboratories and departments follows the requirements of different international standards, namely, International Organization for Standardization (ISO), International Electrotechnical Committee (IEC) 9001:2015, ISO 15189:2012, ISO/IEC 17020:2012, ISO/IEC 17025:2017 and ISO/IEC 17043:2010. A new ISO 18189:2022 standard was published in December 2022, and the NHLS has three years to transition all the laboratories to this standard. The Quality Assurance Unit (QAD) has already started with the transition plan to this standard.

Part of QAD's QMS implementation includes ensuring that the policies and procedures are controlled in compliance with the required standards. This is done through QMS software called Q-Pulse. The number of active documents on the system increased from 8500 at the end of FY22 to 8600 at the end of FY23, even though there is evidence that the implementation of the QMS is improving, and the number of laboratories in the NHLS increased with the addition of the Forensic Chemistry Laboratories (FCLs). Even though the department lost a supervisor who oversaw training, and the position is still vacant, during this reporting period, the team trained 253 staff members compared to 476 in the previous year on the document control module only, as there were no requests for other modules. Special training was done for FCL staff members so that they could access all NHLS documents.

The accreditation and certification processes are as follows: Auditors or assessors are sent by the relevant external body to the NHLS to review the QMS. At the end of their visit, they make a recommendation based on their assessment, and they then send the documents to the accreditation or certification body to finalise the process. The documents are then reviewed following that body's processes, following that, a certificate is issued and sent to the NHLS. The time between the visit and issuing the certificate varies between two and six months.

ISO 15189:2012 accreditation of medical laboratories

A total of 24 laboratories were accredited through the South African National Accreditation System (SANAS), compared to 18 in the previous financial year. At the end of March 2023, the total number of accredited laboratories with certificates or approvals from approval committee was 125 out of 216 (58%). The figure below shows the accredited laboratories distributed across all nine provinces in 48 out of 52 (92%) metropolitan and district municipalities. 24 out of 125 (22%) of these laboratories were on the Strengthening Laboratory Management Towards Accreditation (SLMTA) quality improvement programme funded by the United States President's Emergency Plan for AIDS Relief (PEPFAR) over five years ago.

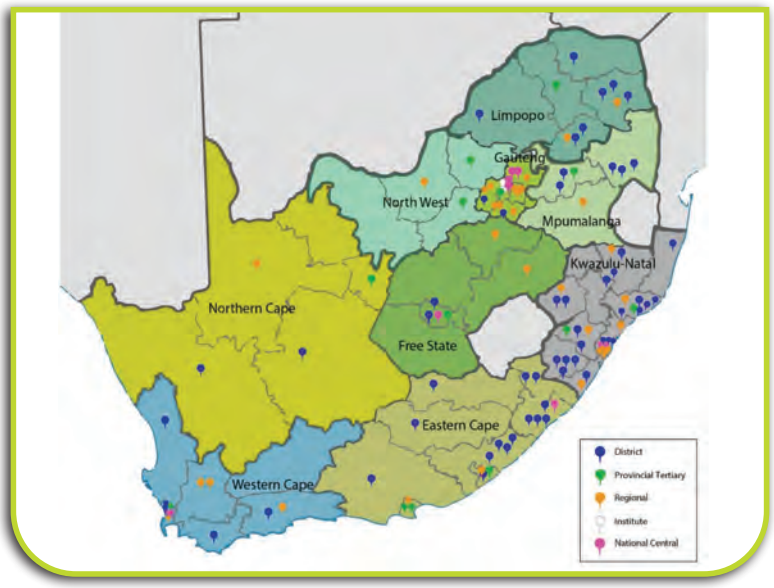


FIGURE 13: Accredited diagnostic laboratories with certificates by 31 March 2023.

The number of ISO 15189 accredited laboratories from 2000 to March 2023 is seen in the figure below per laboratory tier.

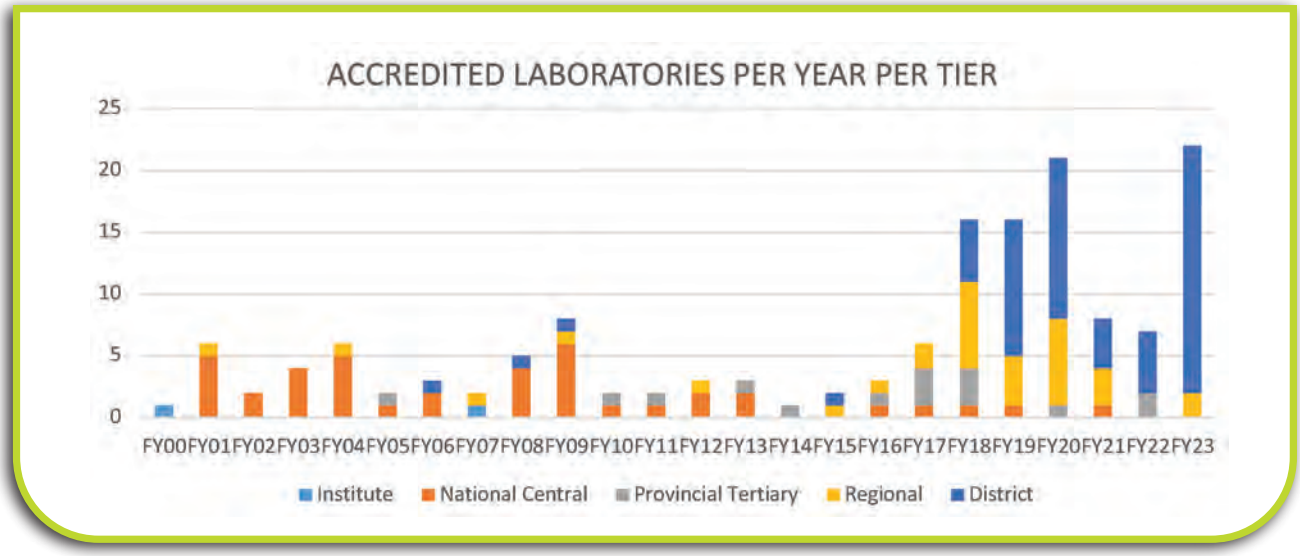


FIGURE 14: Accredited laboratories by end of March 2023 per tier and financial year.

Many of these laboratories are district laboratories (62/125 or 50%) that were included in the accreditation plan later in the years. The National Central laboratories and District laboratories tiers of laboratories achieved the Annual Performance Plan (APP) target, while Provincial Tertiary and Regional laboratories need one and two laboratories, respectively, to meet the target.

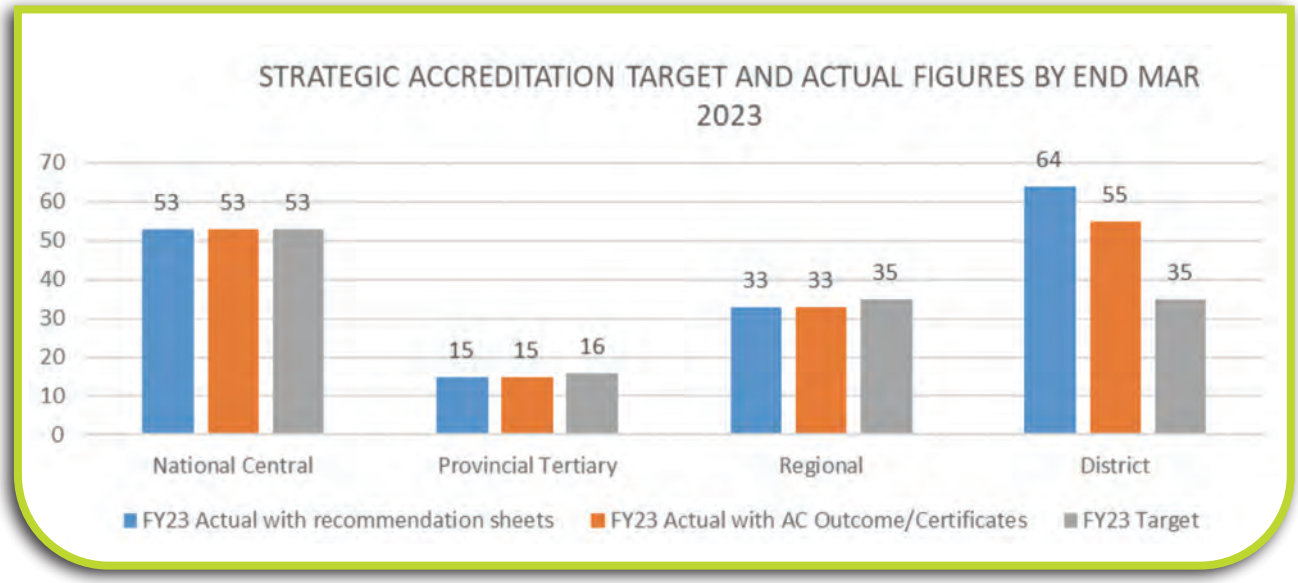


FIGURE 15: Accredited laboratories with certificates by end of March 2023 per tier and financial year.

ISO/IEC 17020:2012 accreditation of occupational hygiene laboratories

The Occupational Hygiene Section of the National Institute for Occupational Health (NIOH) is the only part of the NHLS complying with this standard, and it maintained the accreditation during the current financial year (100%).

ISO 17025:2017 accreditation of public health laboratories

The FCLs comply with the requirements of this standard. With one of the four laboratories accredited, the number of accredited laboratories increased by one to 4/9 (44%) laboratories, while the other three laboratories in the National Institute for Communicable Diseases (NICD), NIOH and Public Health in Prince Street maintained their accreditation.

ISO/IEC 17043:2010 accreditation of Proficiency Testing Schemes

Most of the Proficiency Testing Schemes (PTS), (26/33) 79%, are accredited. ISO 17043 accreditation is linked to staff members who are signatories, the department remains accredited on condition that the staff members attached to the schemes remain employed in the department. During the reporting period, the number of accredited schemes decreased from 28 to 18 following the resignation and retirement of two technical signatories. During the same period, the number increased to 26 following an extension of scope accreditation, with six of them reinstated with new technical signatories and two newly accredited schemes. The next figure shows the PTS accreditation years per scheme.

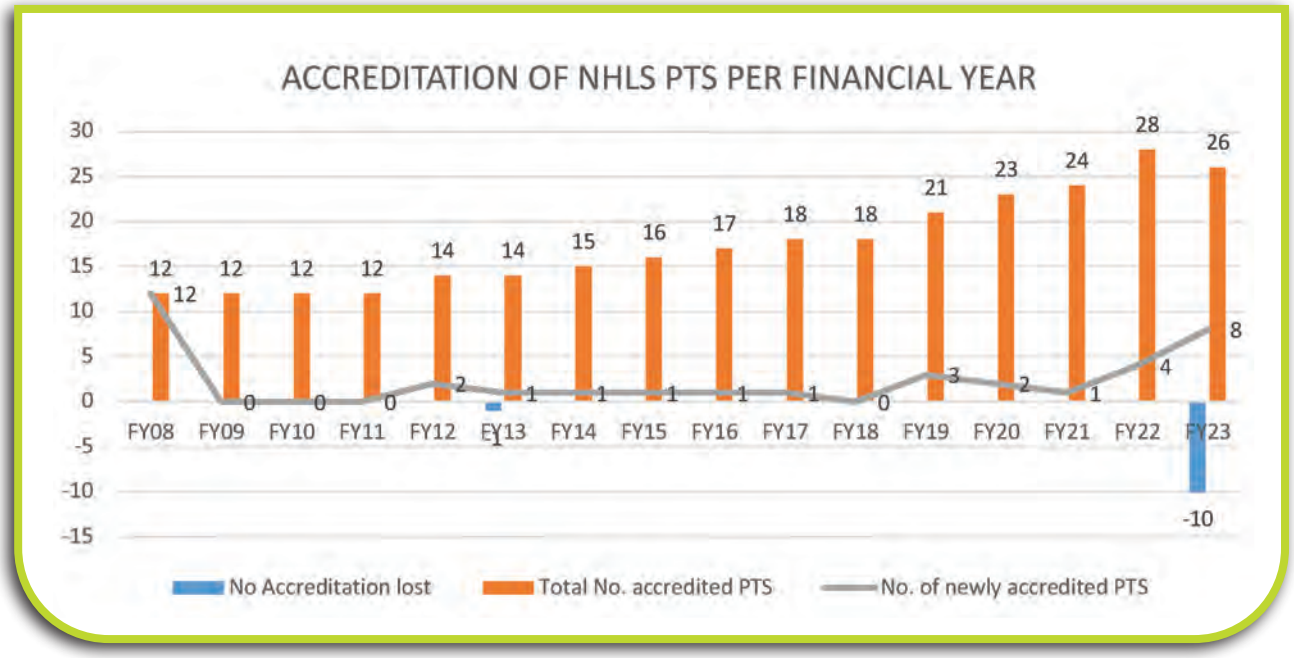


FIGURE 16: Number of accredited PTS per annum.

ISO 9001:2015 certification of support service departments and Diagnostic Media Products

The NICD was newly certified during the certification period, the number of certified departments remained at four as Diagnostic Media Products (DMP) Sandringham lost the certification as it is no longer functional. The QAD unit of Academic Affairs, Research and Quality Assurance (AARQA), DMP-Greenpoint and NIOH Biobank maintained their certification.

To continue improving the QMS in support service departments, training was conducted through virtual platforms. The number of staff trained decreased to 460, compared to 458 in the previous financial year.

PROFICIENCY TESTING SCHEMES

Enrolment in the NHLS PTS is not limited to NHLS laboratories. Private laboratories in South Africa, as well as public and private laboratories in other countries, also participate in these schemes. The next figure shows 16 African countries participating in the NHLS PTS during FY23 and 22 enrolled for FY24, the second country participating is the United States of America, which was also enrolled in the previous year. The number of countries increased by five between the two financial years, even though the Democratic Republic of the Congo did not enrol this time. The new countries are Benin, Cameroon, the Ivory Coast, Mali and Uganda.

FIGURE 17: Countries enrolled in the NHLS PTS during FY22 and FY23.

The number of enrolments increased from 9009 in FY22 to 8383 in FY23. The increase is mainly due to NHLS laboratories joining new schemes.

During the reporting period, QAD hosted three teams from two countries; Kenya twice; the first group in May 2022 was for Mycobacterium tuberculosis (TB) PTS; and the second group was for Chemical Pathology, Haematology, Human Immunodeficiency Virus (HIV), and Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) schemes; and Mozambique was hosted in January 2023 for the CD4 PTS.

FUGURE 18: Kenya visitors with NHLS NICD TB and PTS staff in May 2022.

FIGURE 19: Kenyan visitors with NHLS PTS staff in September 2022.

The next figure shows that 99% of reporting laboratories achieved average results of more than 80% on 34 PTS. They have continued to be above the APP target of 90% for six consecutive years.

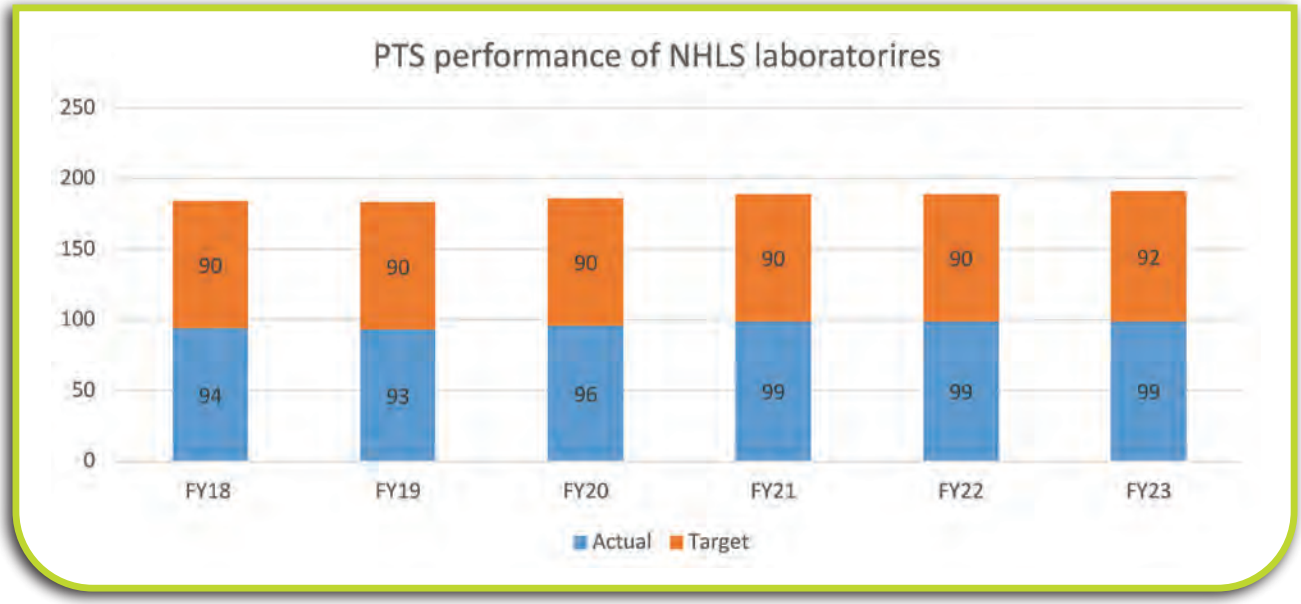


FIGURE 20: Average PTS performance of NHLS laboratories over six financial years.

PEPFAR supported HIV PTS for all Point of Care Testing (POCT) sites in the country. The number of enrolled students decreased from 4265 in FY22 to 4221 in FY23. The overall performance of the POCT sites decreased from 98% in FY22 to 97% in FY23. The figure below shows the number of facilities with an average performance percentage on the PTS per province.

FIGURE 21: PTS performance of POCT over two financial years.

INTERNAL QMS AUDITS

Forensic Chemistry laboratory audits (ISO 17025:2017)

Given the inclusion of FCLs within the NHLS, comprehensive baseline quality audits were conducted across all four laboratories. A total of 14 auditors were involved in the audits; some of them were undergoing training. The staff were given feedback that will help them address the gaps identified for a better outcome next year.

ISO 9001 audits

The next figure shows compliance with the ISO 9001:2015 standard requirements, as determined through internal audits. Clauses have shown year- on-year improvement that increased to 5/7 (71%) in FY22 compared to 2/7 (28%) in FY21.

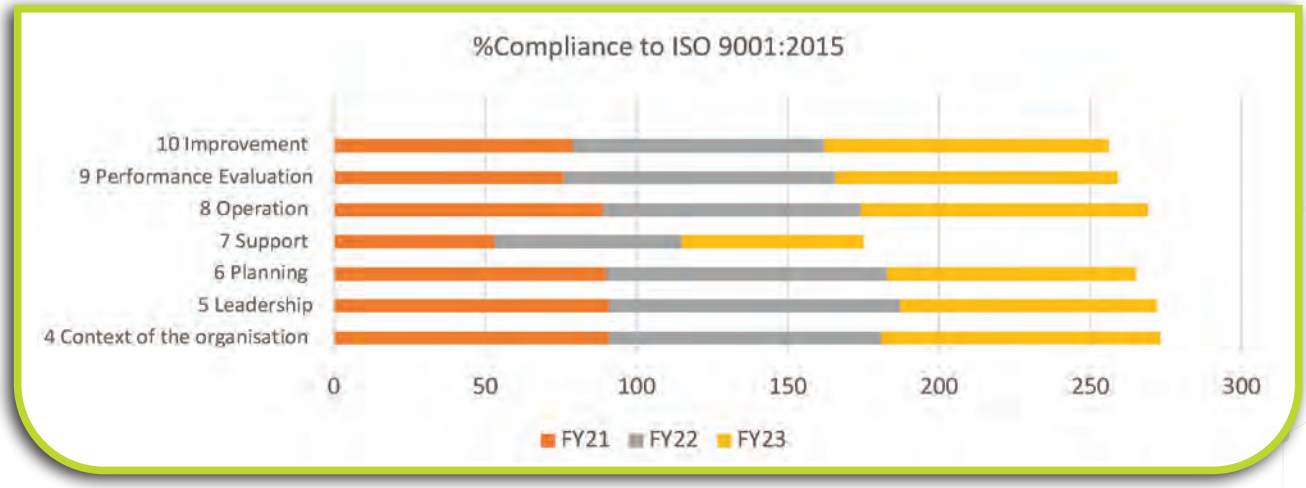


FIGURE 22: Percentage compliance of support service departments in three audit cycles.

Quality Compliance Audits (QCA) ISO 15189:2012

Only 103 laboratories went through the Quality Compliance Audit (QCA), compared to 123 during the previous year. The QMS in non-accredited laboratories continued to show good performance with 98% of laboratories achieving an average of 80% or more during FY23 similar to FY22. The figure below shows the QCA performance of the NHLS laboratories compared to the APP targets over the last five years.

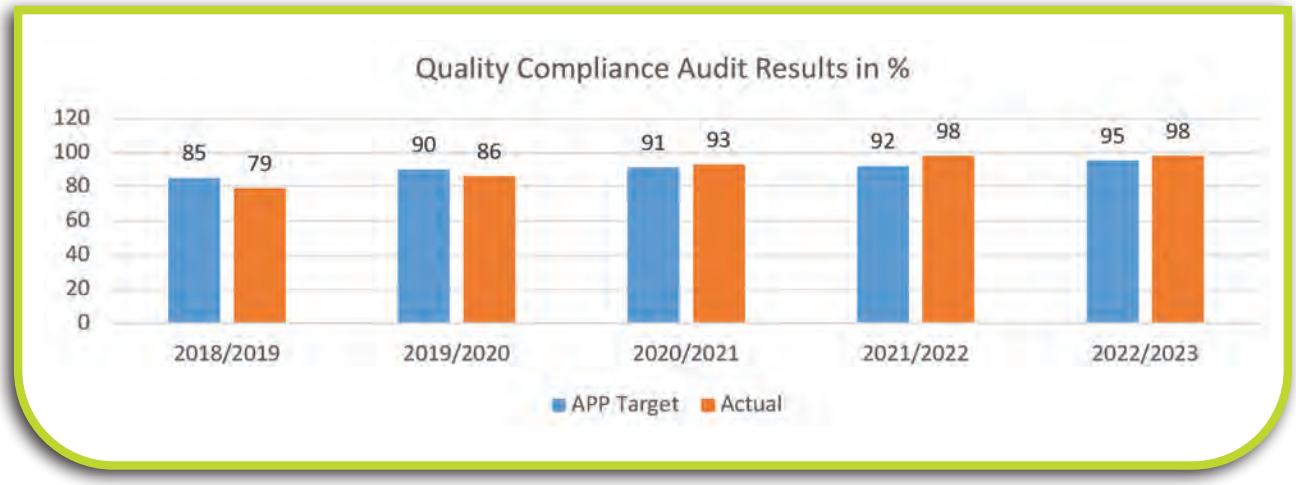


FIGURE 23: NHLS QCA results compared to APP targets over five financial years.

HEALTH TECHNOLOGY ASSESSMENT and POST-MARKET SURVEILLANCE

The evaluations of In Vitro Devices (IVDs) in the NHLS for market entry are done through the Health Technology Assessment (HTA). Most of the evaluations are initiated to comply with the requirements of both the NHLS HTA for procurement purposes and the South African Health Products Regulatory Authority (SAHPRA). Staff continue to assist SAHPRA in capacity building in various ways, including reviewing dossiers and providing technical support.

The team continues to improve its processes and engage stakeholders through quarterly meetings with the representation of the South African Laboratory Diagnosis Association (SALDA), weekly individual supplier meetings, and various NHLS discipline-specific Expect Committee meetings. During the reporting period, HTA was invited to present at the SALDA quarterly meeting in June 2022 and their annual general meeting in February 2023. The output of HTA declined, with 26 projects completed during FY23 compared to 36 during FY22. The figure below shows the activities related to HTA for the last three financial years.

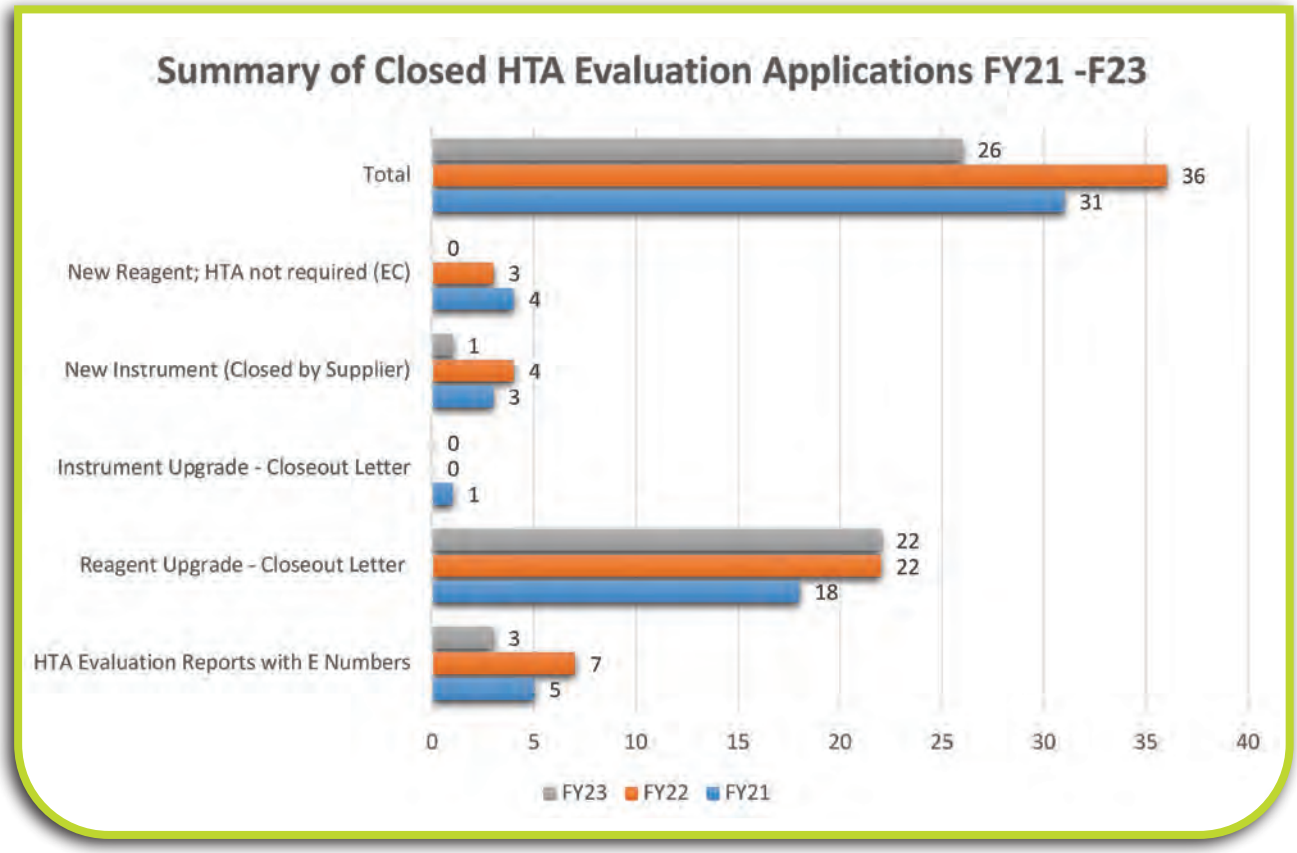


FIGURE 24: Summary of HTA activities over three years.

NHLS Post-Market Surveillance Training based on Procedure External Services and Supplies (GPQ0051) was conducted on 26 August 2022 through NHLS Project ECHO Zoom session. The post-market call log indicates multiple issues with the supplier's service to the NHLS. There were 10 contractual issues and one technical issue reported. Overall, poor service seems to be the main issue, namely frequent backorders, out-of-stock issues with reagents, problems with MTN, ITEC photocopiers and air conditioners that are not functional after repairs.

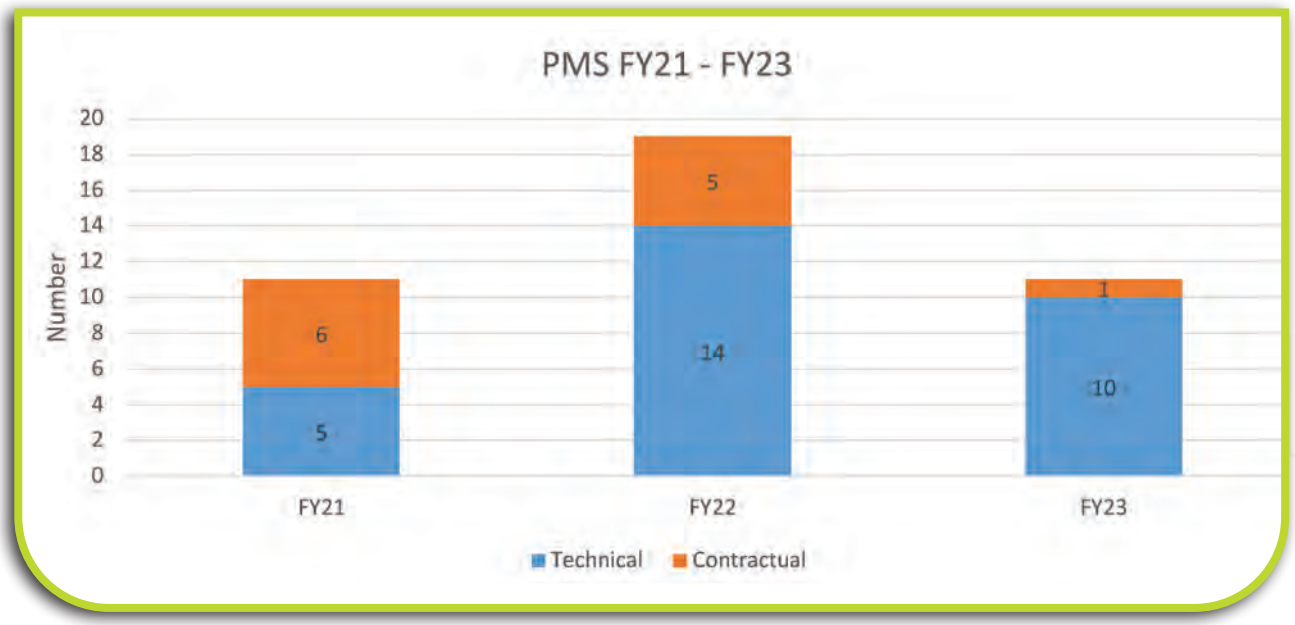


FIGURE 25: PMS activities over three financial years.

PERFORMANCE INFORMATION BY INSTITUTES

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Prof Adrian Puren
Director: National Institute for Communicable Diseases

Introduction

The NICD's use of its resources and the various components that go into achieving its goal of serving as a knowledge resource for South Africa and the Southern African Development Community (SADC) region regarding infectious diseases and cancer are detailed in the overview below.

Communicable Diseases

The NICD plays a vital role in the early detection, containment, and response to infectious disease threats across South Africa, the SADC, and Africa. It provides technical support to the NDoH, as well as the WHO, the Africa CDC, and other relevant bodies, through the surveillance of communicable diseases, outbreak response, specialised diagnostic services, research and training, capacity building, and the various scientific outputs in terms of guidelines and publications.

The year under review saw the declaration of enteric fever, measles, and cholera outbreaks while continuing to monitor the COVID-19 pandemic. These outbreaks have highlighted the vital role of the Emergency Operations Centre (EOC) in tackling a public health crisis and the power of molecular epidemiology through next-generation sequencing to investigate the source of specific outbreaks.

The Centre for Enteric Diseases (CED) integrated genomic and epidemiologic surveillance for enteric fever, detected multiple localised but expanding clusters in several provinces, and demonstrated the spread and establishment of the Klerksdorp typhoid fever cluster strain into other provinces.

The Centre for Emerging Zoonotic and Parasitic Diseases (CEZPD), which houses the only negative pressure BSL-4 laboratory on the continent, supported outbreak responses to mpox (previously

monkeypox) and provided specialist reference diagnostic services. The centre supports the malaria elimination programme in South Africa and the region by providing antimalarial drug resistance surveillance and malaria vector surveillance. CEZPD also provided reference laboratory diagnostics, research, and training relating to zoonoses and vector-borne infections of public health importance in South Africa and the region. The centre shares its knowledge, skills, and capacities to promote prevention, rapid and accurate detection, and support for effective outbreak response with the provincial and national Departments of Health in South Africa and other national, regional, and international stakeholders. The centre provides laboratory-based surveillance for several formidable pathogens notifiable as medical conditions in South Africa, including anthrax, arboviral infections, malaria, rabies, and viral haemorrhagic fevers.

The Centre for Healthcare-Associated Infections, Antimicrobial Resistance, and Mycoses (CHARM) has been working on several initiatives to combat antimicrobial resistance (AMR) in South Africa. Regarding neonatal infections, Baby GERMS-SA surveillance data were published and led to collaborations for developing age stratification of Global Burden of Disease AMR data, a weighted incidence syndromic combination antibiogram analysis, and work on a Klebsiella vaccine. CHARM's One Health AMR efforts included contributing to a joint public and private report on AMR and antimicrobial use in animals and humans in South Africa, leveraging wastewater SARS-CoV-2 surveillance to monitor multi-drug-resistant bacterial and fungal pathogens in the environment, and establishing a regional partnership with four southern African countries for fungal disease surveillance.

In the area of HIV-related infections, the centre facilitated the inclusion of flucytosine in the South African standard treatment guideline for cryptococcal meningitis for HIV-related conditions and initiated isolate-based surveillance for Cryptococcus at sentinel hospitals to screen recurrent episode isolates for 5-FC resistance. The Centre co-led an NIHR-funded Global Health Research Group on HIV-associated Fungal Infections alongside the London School of Hygiene and Tropical Medicine (LSHTM) and NICD/Wits to improve the diagnosis and treatment of five HIV-associated fungal infections of public health importance.

The Centre for HIV and STIs (CHIVSTI) focused its efforts on a diverse array of surveillance and research. The analysis of the key outcomes of the biennial antenatal HIV survey revealed a decline in HIV prevalence for women under the age of 25 years and an overall decline in prevalence for the first time. There was a good agreement between the negative and positive HIV point-of-care results when compared to reference laboratory testing. A major achievement of the antenatal programme is that 96% of HIV-positive women were on antiretroviral treatment. In addition, 64% of women were on the dolutegravir treatment regimen. There are areas for improvement in that only 74.1% of those women on ART were virally suppressed, and the proportion of women with viral loads greater than 1000 copies/ml was 10%. Recommendations included strengthening retention in care and adherence to treatment. The survey also noted missed opportunities for on-site syphilis testing, with 18% of women having pending results. This included secure online distribution, via the NICD's Self Service Portal, of Results for Action (RfA), reports as per the 2019 National HIV Guidelines, monthly reports on Early Infant Diagnosis, Paediatric and Adolescent HIV Viral Load monitoring, and Maternal PMTCT HIV VL monitoring, and validation of UNAIDS 95-95-95 target achievement at the district-level.

The Centre for Respiratory Diseases and Meningitis (CRDM) in South Africa reported an outbreak of pertussis in the Western Cape during the second half of 2022, which exceeded the numbers reported during the peak in 2018. In response to the outbreak, the CRDM updated pertussis preparedness guidelines and submitted an advisory on pertussis vaccination, including the vaccination of pregnant women, to the National Advisory Group on Immunisation (NAGI).

The National Influenza Centre (NIC) for South Africa continued to support the WHO by characterising influenza viruses through serologic and genetic testing to guide the composition of the annual seasonal influenza vaccines. Additionally, the NIC provided technical assistance in diagnosing and characterising respiratory viruses in the region.

CRDM also continued to support the COVID-19 response and conducted ongoing COVID-19-related research activities, including studying the burden of disease, transmission, seroepidemiology, and viral sequencing.

Tuberculosis (TB) continues to be a national priority in terms of the disease burden in South Africa. However, the COVID-19 pandemic has impacted TB control progress and reversed years of gains. Consequently, in June 2022, the NDoH implemented the National TB Recovery Plan. The Centre for TB (CTB) played a pivotal role in directing the plan's strategies by using its national and provincial surveillance and forecast models to assess and monitor the impact of the COVID-19 pandemic on laboratory investigations and diagnosis.

The centre further strengthened control efforts through the national implementation of SMS notifications of TB laboratory results to patients, endeavouring to enhance linkage to care and a novel rapid diagnostic for drug-resistant tuberculosis investigations to direct clinical management at an earlier stage. The centre enhanced surveillance activities by linking the laboratory test data to the EDRweb (drug-resistant TB register) and using geospatial analysis of TB burden and incidence using facility-level laboratory data to identify facility-level TB hotspots in 12 high-burden districts in South Africa. As the National TB Reference Laboratory, the centre coordinated the USAID South African TB Diagnostic Network Assessment. The aim was to assess current practices and algorithms and identify challenges that prevent the overall diagnostic network from performing efficiently and effectively. The centre proposed evidence-based interventions to improve the overall ability of the TB diagnostic network to meet the goals and targets of the national strategic plans for tuberculosis. Research efforts included completing several novel diagnostic evaluations to inform global policy decisions and the application of whole genome sequencing to enhance microbiological and epidemiological surveillance of drug-resistant tuberculosis in South Africa.

During the review period, the NICD declared measles outbreaks across all provinces in South Africa. The Centre for Vaccines and Immunology (CVI) conducted testing on 6 664 serum samples, of which 995 (15%) were confirmed positive for measles. The most affected age groups were 5-9 year olds (43%), and the national immunisation campaign targeted children aged six months to 15 years. The NICD partnered with the South African Centre for Epidemiological Modelling and Analysis (SACEMA) to provide transmission trend estimates, and the reproduction number declined below one in March 2023.

The NICD also supported sub-Saharan African countries in surveillance for acute flaccid paralysis (AFP) and poliovirus detection. The laboratory-processed 5 536 samples for poliovirus isolation, with the detection of wild poliovirus type 1 in seven cases, imported from Mozambique and vaccine-derived poliovirus in multiple cases. Environmental surveillance identified Sabin/Sabin-like viruses and vaccine-derived polioviruses in various locations.

Additionally, the NICD led the SACCESS network for COVID-19 environmental surveillance, analysing 413 wastewater samples. SARS-CoV-2 was identified in 392 samples (95%), and viral variants, including Delta and Omicron lineages, were successfully detected using next-generation sequencing. Virus levels varied across different regions.

The NICD's Division of Public Health Surveillance and Response (DPHSR) provided epidemiological support for eight of the nine provinces through provincial epidemiologists. The division expanded event-based surveillance, and Emergency Operations Centre (EOC) staff conducted training on emergency management locally and in several other African countries. The 24-hour hotline assisted clinicians with diagnosing and investigating suspected mpox, cholera and rabies cases. The inclusion of mpox, rubella and congenital rubella syndrome as category 1 Notifiable Medical Conditions (NMC) and the end of the DATCOV COVID-19 hospitalisation system led to additions and improvements in the NMC Surveillance System. In the past year, the NMC system received 59 757 notifications, of which 12% (n=6, 940) were Category 1 NMC, and by March 2023, there were 18 367 active users. The Group for Enteric, Respiratory and Meningeal Disease Surveillance (GERMS) collected data on key pathogens, which were used to monitor trends in disease burden.

The National Cancer Registry (NCR) continued to serve as South Africa's primary source of cancer incidence data, through pathology-based cancer surveillance, the Ekurhuleni population-based cancer registry, and key epidemiological and genetics cancer research. The NCR, in collaboration with the University of KwaZulu-Natal, launched the KwaZulu-Natal population-based registry to enhance cancer data in the province.

South Africa faces several challenges in recovering from the impact of COVID-19, including infection control programmes. The world has been navigating the COVID-19 epidemic for over three years, and the NICD has made a significant contribution to South Africa's response. The need for building a metanarrative around health and science's essential role has been more evident than ever. The multiple self-reflection activities will guide the NICD in preparing for the next pandemic.

The organisation has had to adapt during the year under review; it has given life to the statement that "there is nothing permanent except change" when viewed through the lens of infectious diseases. Through our collective adaptability, we have survived the COVID-19 storm and recognise that adaptability is an essential component of success in a rapidly changing world.

As work on the NAPHISA collaboration with stakeholders continues, we plan to move to an integrated disease surveillance system for South Africa.

Our successes and victories accord with our service to the populace because of the collective efforts of our staff's combined service to the institution and the community. I am pleased to report an overall performance improvement during the period under review compared to the previous financial year.

The Institute surpassed its key performance indicator goals, among other achievements. NICD obtained several noteworthy accomplishments, including the following:

- Exceeding the percentage of identified prioritised diseases under surveillance by 9% of the target;
- Achieving a 100% of national HIV and TB surveillance reporting;
- Surpassing the number of articles published in peer-reviewed journals; and
- An impressive number of field epidemiologists qualified.

The NICD is committed to enhancing quality management systems, customer satisfaction, reputation, risk management, employee engagement and productivity. ISO 9001 accreditation is important to our success, and this year, we successfully added several transversal departments to our accredited list, including Human Resources, Information Technology, Finance, Division for Bio Safety, (DBB), Division for Bio Security (SBI), and the Communications Unit, without any non-conformances.

The late Dr Elvira Singh posthumously received the AG Oettlé Memorial Award as a fitting recognition of her extraordinary cancer registration and epidemiology efforts as a distinguished scientist who contributed to advancing cancer research and understanding a devastating disease, underscoring CANSA's recognition of the National Cancer Registry's efforts.

The CEZPD Team, led by Dr Givemore Munhenga, received recognition from the International Atomic Energy Agency (IAEA). This leading intergovernmental organisation seeks to promote the peaceful use of nuclear energy. The IAEA recognised the team's work on the Sterile Insect Technique (SIT) project. As a result, the VCLR was nominated to host an insect control fellowship under Dr Munhenga through the agency's fellowship programme.

At the 11th TEPHINET Global Scientific Conference held in Panama City, Dr Thendo Ndou, a graduate of the FETP Frontline program, made a significant impact with his research on "Epidemiology of

ESKAPE Pathogens at a Tertiary Care Hospital in South Africa, January 2019-August 2021". Flying the SAFETP-DPHSR flag, Dr Ndou was recognised for the "Best Oral Presentation by a Frontline FETP Fellow or Recent Graduate" for his presentation.

In addition, to our international awards, the Benedyke Polak Award 2022 was awarded to Prof Janusz Paweska. An award is given to a Polish and a foreign scientist who have achieved outstanding achievements in exploration and research. The activities of these organisations strengthen the ties between Poland's science and culture and the international heritage of research, imagination, and thought.

The CTB's Dr Shaheed Vally Omar has received Global Health funding to continue the TB Surveillance Programme at the NICD/NHLS. During the Global Health Fund visit in Geneva, Dr Shaheed Vally Omar was seconded to assist the CEO with support from the NDoH.

Dr Arshad Ismail's appointment as a special category researcher at the University of Venda's Department of Biochemistry and Microbiology is a testament to his expertise in the sequencing field. Dr Ismail, the head of the Sequencing Core, has been recognised for his contributions to the area and appointed an Adjunct Professor at the university.

Mr Zibusiso Masuku was instrumental in the designation of the NICD's Regional Diagnostic Demonstration Centre (RDDC) as the first Regional Centre of Excellence for Biosafety and Biosecurity (RCoEBB) in Africa, which was conferred by the Africa CDC.

IANPHI recognised Dr Harry Moultrie for outstanding success in building a collaborative modelling consortium for COVID-19 as the winning project of the African Network for the Recognition of Success in 2022.

During the year, we celebrated three ribbon-cutting ceremonies. The first was the ribbon-cutting by Dr Imtiaz Sooliman and Dr Kamy Chetty for the opening of the donated modular unit for accommodating field epidemiology training, and the second was the inauguration of the NCR as the IARC GICR (Global Initiative for Cancer Registry) Collaborating Centre for Sub-Saharan Africa, recognising the NCR's contributions to cancer research in the region. The third ceremony celebrated the opening and RDDC's designation as a Regional Centre of Excellence for Biosafety and Biosecurity (RCoEBB).

Representatives of the Institute attended several high-level meetings with government officials and diplomats. These meetings included the United States Government President's Emergency Plan for AIDS Relief (USG PEPFAR), the Southern Regional Coordinating Centre (SA-RCC) Workshop on Strengthening National Public Health Institute (NPHI), Illumina Global Health, the International Atomic Energy Agency (IAEA) Technical Cooperation Programme, and the technical workshop between China CDC and the Embassy of the People's Republic of China in South Africa.

As we look forward to a new financial year filled with significant achievements, we will need to carefully explore how to surpass our accomplishments from the previous year in a challenging and dynamic environment.

Support functions

The IT Department completed 53 software development and business intelligence projects and has continued to provide infrastructure and support amid major power disruptions.

Notably, the IT department has advanced the development of the Notifiable Medical Condition Surveillance System to be more agile and to incorporate a hospital surveillance system for notifiable medical conditions based on the lessons learned from the DATCOV system designed during the pandemic.

Research, develop, and innovate for and with the rest of Africa

Public health collaborations are crucial to advancing research and innovation that will address pressing health challenges. The RDDC's recent designation as the first Regional Centre of Excellence for Biosafety and Biosecurity (RCoEBB) underscores the importance of such collaborations. The RDDC's new designation was made possible through partnerships with various organisations, including the Africa CDC and the NICD's RDDC, highlighting the importance of shared expertise and resources in advancing public health outcomes.

The NCR was inaugurated as the collaborating centre for childhood cancers and monitoring of cervical cancer elimination in sub-Saharan Africa by the International Agency for Research on Cancer's (IARC) Global Initiative for Cancer Registry (GICR) development. The NCR trained 65 participants from Ministries of Health and cancer registries from 12 sub-Saharan African countries on cervical cancer record linkage and 17 cancer registrars on childhood cancer registration from population-based registries in Tanzania.

FORENSIC CHEMISTRY LABORATORIES

Dr Clothilde Oliphant
Chief Operating Officer: Strategic Initiatives

INTRODUCTION

The integration of the Forensic Chemistry Laboratories (FCLs) into the NHLS on 1 September 2020 marked a significant milestone as proclaimed by the President of South Africa in accordance with Section 29 of the National Health Laboratory Service (NHLS) Act No 37 of 000.

As a result, this reporting period reflects the first year of FCLs functioning within the NHLS.

The core business of the FCLs encompasses essential functions such as testing antemortem and post-mortem blood samples for alcohol content not limited to drunken driving cases, analysing biological tissues and fluids for the presence of poisons and drugs in instances of unnatural deaths (toxicological analysis), and conducting analysis of foodstuffs and cosmetics in accordance with the Foodstuffs, Cosmetics, and Disinfectants Act, Act 54 of 1972.

Comprised of four facilities located in Cape Town, Durban, Pretoria, and Johannesburg, the FCLs serve the entire South African population. Clients of FCLs include the South African Police Service (SAPS), the Department of Health's Forensic Pathology Services Mortuaries in the provinces, the National Prosecuting Authority (NPA), and local authorities (municipalities).

Operations:

Programme performance

At the time of integration of the laboratories into the NHLS, the FCL reported challenges regarding the turnaround time for results in the blood alcohol and toxicology sections. To address these barriers, corrective measures were initiated during the review period. They will continue to be implemented in the medium term. The NHLS conducted quality baseline audits to prepare for the implementation of total quality management across all laboratories. Efforts are underway to acquire

additional and larger facilities for laboratories facing infrastructural deficiencies. Furthermore, additional equipment is being procured to enhance sample processing capacity, address backlogs, and manage new specimens received.

Challenges

Despite historical challenges, the NHLS remains steadfast in leveraging available resources to ensure uncompromised service delivery. Measures have been implemented to reduce and eliminate backlogs, including reviewing and updating the organisational structure to enhance oversight at the FCLs. All vacant positions have been identified and filled, and overtime working hours have been implemented to address backlogs.

Backlogs in the analysis of samples

Factors that contributed to the high turnaround times in the blood alcohol and toxicology sections of the FCLs, included infrastructure deterioration, outdated equipment, and a shortage of human resources.

Blood Alcohol tests

At the time of integration, backlogs for blood alcohol tests were recorded at the FCLs in Cape Town, Johannesburg, and Pretoria, but not at the Durban laboratory. The Cape Town laboratory has cleared its backlog in blood alcohol tests during the reporting period, while the Pretoria laboratory managed to significantly reduce its backlog. The Johannesburg laboratory is implementing a turnaround strategy to reduce the backlog.

Toxicology tests

The backlog in toxicology tests have increased but the NHLS is working on strategies and working closely with the South African Police Service (SAPS) and Forensic Pathology Services to reduce the backlogs.

Testing of foodstuffs

No backlogs were reported for the analysis of food samples at the Cape Town and Pretoria FCLs at the time of integration, and this achievement has been maintained throughout the period.

Interventions for planned outcomes during 2022-2023

Following integration, the FCLs have adopted an all-encompassing strategy to enhance service delivery and harmonise with the NHLS' strategic objectives.

Organisational structure

A centralised management support structure was established to ensure effective oversight and governance. Positions such as Head of FCLs, financial and procurement manager, human resource manager, and administrative clerk were filled to provide adequate management support.

Management of human resources

All vacant positions within the FCLs were identified, and recruitment processes commenced. Several positions have been filled or are in the recruitment process.

Addressing infrastructural and equipment shortcomings

Plans are underway to move the Pretoria FCLs to a larger facility, and the expansion of services at the Durban FCLs is under review. Efforts to acquire additional equipment, such as gas chromatographs with flame ionisation detectors, have commenced.

Improving reporting results to stakeholders

Engagements with the South African Police Service (SAPS) are taking place to enhance reporting efficiencies through a proposed secured digital interface between SAPS and NHLS/FCLs reporting systems.

Engagement with the Forensic Pathology Service

Continuous engagements with the Forensic Pathology Services aim to develop strategies to manage and reduce the toxicology backlog. Investigations are underway to address samples lacking identification or being extremely old.

NATIONAL INSTITUTE FOR OCUPATIONAL HEALTH

Dr Spo Kgalamomo
Director: National Institute for Occupational Health

INTRODUCTION

I am pleased to share the key activities and accomplishments of the National Institute for Occupational Health (NIOH) for the 2022-2023 financial year. It reinforced its role as a centre of excellence and a repository of knowledge for the national, Southern African Development Community (SADC) and African Region. The NIOH's resolve and commitment to support the South African government's occupational health efforts is steadfast. The Institute provides advice and support, conducts research and develops capacity through teaching and training as part of efforts to promote healthy conditions in workplaces and improve workers' health.

For the period under review, the NIOH gradually transitioned from COVID-19 and refocused on its primary functions, which were disrupted by the global pandemic. However, the OHS initiatives implemented as part of the response to the pandemic continued, albeit on a smaller scale. These included participating in OHS knowledge generation, providing training sessions, and capacitating workplaces to address the effects of the pandemic. The Institute's COVID-19 response was agile and adaptive, informed by the need to provide workplaces with timely and relevant information. The Institute has collaborated and engaged key stakeholders locally and abroad, which has strengthened its stature as a centre of excellence.

The NIOH contributed to knowledge and information generation through research and education. The Institute's multidisciplinary team participated in research projects on a national and international scale in support of initiatives to help make workplaces healthy and safe. The NIOH worked together with many key workplace role players and partners on a national and international level. In turn, this assisted the Institute in building a new body of knowledge that allowed research to be turned into practical policy and practice.

Highlights

Our training programmes are critical in developing the next generation of scientists and occupational health professionals. The NIOH Occupational Medicine Specialist Training Programme, offered in partnership with the University of the Witwatersrand's School of Public Health, was accredited for another four-year period (2022-2025) by the HPCSA. This bears testimony to the NIOH's high-quality standards and the calibre of its staff. The NIOH's in-house programme complements the formal academic programmes in occupational medicine and public health offered by the Universities of Pretoria and Witwatersrand, aligned with the College of Public Health Medicine guidelines for specialist training. We also strengthened our collaboration with the Nelson Mandela, Fort Hare, Rhodes and Sefako Makgatho Universities in various programmes and projects.

The NIOH, yet again, played a fundamental role in providing OHS expertise in the country, with various staff members being part of drafting and revising specific occupational health legislation and guidelines for both the formal and informal economies. The NIOH provided strategic leadership and participated in various stakeholder fora convened by the National Department of Health (NDOH), Department of Employment and Labour (DoEL), World Health Organisation (WHO), International Labour Organisation (ILO), International Congress for Occupational Health (ICOH), Africa Centres for Disease Control and Prevention (CDC), Council for Scientific and Industrial Research and academia in accelerating and strengthening occupational health resilience with respect to occupational health issues of concern.

Our staff served on numerous high-level decision-making technical committees including the National Economic Development and Labour Council (NEDLAC), Regional Biosafety and Biosecurity Technical Working Group – Southern Africa, the South African Society of Occupational Medicine (SASOM), South African Society of Occupational Nursing Practitioners (SASOHN) and the South African Institute of Occupational Health (SAIOH).

I am proud to share that the specialised laboratories of the NIOH have once again maintained their accreditation for their respective quality management systems. The institute is the only organisation in South Africa to have obtained four separate quality management systems: ISO 17020 (Conformity Assessment for Inspection Bodies), ISO 17025 (Testing and Calibration Laboratories), and ISO 15189 (Medical Laboratories) and ISO 9001. The Support to NHLS laboratories towards SANAS accreditation is on-going.

The Institute continues to regularly use media to strengthen its brand identity and raise its profile, especially social media, which has proven effective in directly engaging some of our stakeholders. Through the use of the social media sites such as Twitter and YouTube, the Institute has seen consistent growth and has reached a wider audience. These communication channels have made it possible to network worldwide, helping with stakeholder targeting through personalised communication. The NIOH's periodical (OccuZone) was also used to disseminate information about the Institute's activities. This quarterly journal details the NIOH's latest research findings, the provision of specialised services, and its teaching and training initiatives.

COVID-19 activities

With the easing of restrictions and lifting of the National State of Disaster at the start of the year under review, some initiatives put in place to respond to the pandemic were brought to an end. The NIOH's dedicated workplace advisory hotline set-up specifically to assist occupational health professionals, employees, and employers in responding to the COVID-19 pandemic, was repurposed to respond to general occupational health queries relating to appropriate occupational health practice in workplaces. At the start of the year under review, the NIOH hosted a centenary webinar celebrating 100 COVID-19 webinars since the beginning of the pandemic in March 2020. The webinar series attracted audiences from the public and business sectors, mostly in South Africa,

the SADC Region, and the African continent. For the period under review, webinars redirected the focus on sector-specific occupational health topics and the production of information materials for use on an ongoing basis in workplaces.

In October last year, the NIOH, in partnership with NEDLAC and funded by the Compensation Fund, launched the COVID-19 "Related Occupational Health and Safety Education and Awareness programme for workplaces." This initiative builds on the achievement and the momentum of COVID-19 training webinars held in the past years. This programme produces COVID-19-related occupational health and safety information materials that workplaces can use to educate and inform at all organisational levels. These materials are delivered in various formats: short videos, infographic sheets and webinars. For the latest information, please visit our website: www.nioh.ac.za and Twitter page @nioh_sa.

Research

The NIOH's mandate is to advance knowledge and innovation to prevent illness, injury and poor health and promote good health. Research continued to be a top priority, with a particular emphasis on preventing workplace exposure to potentially harmful agents. Departments have completed extensive and varied interdisciplinary research programmes that addressed various problems crucial to improving workers' health and the health of surrounding communities. The wide range of research needs in occupational health and safety in the nation is evident from the topics of the scholarly articles published throughout the year under review. The limited researchers at the NIOH were able to produce 37 articles in peer-reviewed journals and contributed four book chapters. We commend and congratulate the NIOH staff for their dedication and diligence in producing new knowledge.

Surveillance

Occupational health, morbidity, injury, and mortality surveillance is insufficient in South Africa. Making a contribution to better surveillance is a long-standing but increasingly significant aspect of the NIOH's activities. Without a national occupational injury and disease surveillance system, the NIOH used the annual mortality data for South Africa, released by Statistics South Africa, to investigate the role of occupation in common diseases as well as in development of occupational diseases and produced surveillance reports. Six reports were produced this year on occupation and Road Injuries, Interpersonal Violence, Haematological Disorders, Malignancies, Liver Disease, and Cardiovascular Disease. These are available on the NIOH website for public access. Additionally, the Institute is still engaged in several additional surveillance activities. The Pathology Division Surveillance (PATHAUT) report was also produced and is available on the NIOH website (www.nioh.ac.za). The Immunology and Microbiology Section continued its occupational allergy disease surveillance activities, including its efforts to monitor trends of common allergens and the most common industry referral patients. The HIV and TB in the Workplace unit conducted and reported on Tuberculosis (TB) among healthcare workers.

Service delivery

The Pathology Division filled the gap by providing a diagnostic surgical pathology service within the NHLS, for the Limpopo Province while supporting Limpopo in building further capacity. This has resulted in an improved pathology service to the province.

Ergonomic assessments are conducted to ensure that ergonomic hazards in the workplace are identified and addressed accordingly in line with the Occupational Health and Safety Act (Act No. 85 of 1993) and its new Ergonomics Regulations (2019). Risk factors identified in both public and private workplaces were similar and range from workplace stress, awkward postures, prolonged sitting and poor work station accommodation. A preventive programme to address the risk factors has been initiated in a phased approach.

NIOH Laboratories played a critical role in supporting preventative efforts towards reducing occupational allergies and infectious diseases, which continues to be a challenge in both the formal and informal economy. Workplaces particularly affected include healthcare facilities, agriculture, wastewater treatment plants, and waste recycling. The Occupational Section maintained registration with the DEL as Approved Inspection Authority (AIA), in its capacity as a Type C Inspection Body to provide occupational hygiene services to the private sector and its parent organisation, the NHLS. In support of the NDOH, several strategic programmes were initiated including participation in the National Regulations Relating to Lead in Paint as well as the provision of testing services for Lead in Paint.

The NHLS Biobank helps to secure and manage collections of biomaterials and its associated data for research, human health and biotechnology development, for the benefit of society. The Biobank's has increased storage capacity in response to the increase in demand and has maintained its ISO 9001:2015 accreditation for the period under review. This makes it the only biobank in Africa that is accredited with this standard.

International liaison

The NIOH maintained solid international links through concerted efforts to collaborate and network with influential international organisations. The NIOH has successfully been awarded the re-designation as the World Health Organisation Collaborating Centre for Occupational Health for the next four years. The Global Network of WHO Collaborating Centres aims to stimulate networking between participating institutions and international partners to substantially contribute to the WHO's overall goal. New projects have been initiated after successful completion of previous ones.

The collaboration has facilitated an inclusion of some staff members to serve on a committee that contributed towards the development of global guidelines entitled "Caring for those who care, a Guide for the development and implementation of occupational health and safety programmes for health workers". The NIOH also worked on a new project with the WHO regarding using a new Joint Estimation Group Indicator to enhance reporting on specific occupational health indicators.

In conclusion, the NIOH has once again managed to fulfil its mandate and exceed targets in some areas in spite of limited resources.

SUPPORT SERVICES PERFORMANCES

INFORMATION AND COMMUNICATION TECHNOLOGY

Sibongiseni Hlongwane
Executive Manager:
Information Technology

The Information and Communication Technology (ICT) department concentrated its efforts on both improving ICT infrastructure and managing the current portfolio throughout the reporting period. The following modernisation activities were successfully implemented during the reviewed financial year in support of this goal.

Infrastructure and operations

Primarily, 320 links were planned, considering the need for redundancy at certain sites, which required the implementation of dual mediums. Currently, work is in progress for the build or upgrade of 290 links. These projects are still ongoing and are considered works in progress.

Key accomplishments include the successful cutover of 279 links (across 231 sites) and the completion of 281 links in total. However, there have been challenges as well. Additionally, delays caused by municipal wayleaves have impacted five sites. Power outages and vandalism continue to be experienced, affecting the progress of the project; these challenges are being managed effectively.

MTN Service Improvement Plan (SIP) – Four-point engineering plan approach:

The MTN 4-point engineering plan will prioritise the deployment of batteries at selected vulnerable up-nodes to enhance power backup resilience. Additionally, VSAT and LTE technologies will be deployed at sites that rely on a single fibre or microwave medium for improved connectivity.

In areas with poor LTE coverage, antenna boosters will be installed to enhance signal strength. Feasibility studies will also be conducted to explore the option of obtaining services from third-party providers. Furthermore, the network will be redesigned to allow for additional rerouting options, increasing overall flexibility.

In relation to the LAN Refresh Project Phase 2, all project deliverables have been successfully completed. The project was officially closed on March 8, 2023, and the project close-out report has been prepared and circulated for approval.

South African National Research Education Network (SANReN)

Two SANReN internet links installed (1Gbps) and a Replication link installed (10Gbps). All 50 routers have been delivered to the NHLS. Routers at Charlotte Maxeke, Sandringham, and Braamfontein have been configured and installed. The utilisation of the SANReN network will be beneficial to the NHLS as it will also improve connectivity, bandwidth capacity and network speed.

Applications and systems

In order to improve the efficiency and appropriateness of tests, an order entry solution with basic specimen tracking functionality has been developed. The development is 95% complete. This solution makes provision for orders to be placed directly on the LIS, which will further aid in reducing human error and improving data integrity. Pilot implementation at a Gauteng primary health clinic will be done in the first quarter of the 2023–2024 financial year.

To ensure that clinicians have access to test results as soon as they are available, the NHLS has established system interfaces with three private laboratory systems, adding to the catalogue of interfaces that have been developed over the years.

The migration of Forensic Chemistry Laboratories (FCLs) is in its final stage, focusing on examining the solution for compliance and consistency with legislative requirements. The primary goal is to ensure that the system-generated forensic reports and affidavits have undergone the chain of custody process, making them admissible in court.

To automate critical business processes, the ICT department initiated a digitisation and digitalisation drive. To achieve this, key business processes were identified and mapped for ICT, HR, AAR, and Communications departments. The objective of this initiative was to assess the current state of NHLS support function processes, identify areas for improvement, and develop artifacts that outline the mapped processes and a systematic approach for enhancing them through technology.

Several processes have already been successfully automated, providing significant benefits to the relevant stakeholders. These include the automation of the CDW data request process, the HR PEIGA approval process, the HR grievance process, the laboratory downtime tracking process, and the NHLS cell phone application process.

However, the frequent outages and other environmental failures at the Sandringham data centre have adversely affected the accessibility and availability of mission-critical and core applications. The outdated infrastructure poses challenges for promptly responding to business needs and deploying solutions that meet NHLS requirements. To address these problems, preparations are being made to update the infrastructure in the upcoming fiscal year.

Governance and reporting

ICT policies, frameworks, and processes have been reviewed and revised, and they are now in line with ICT operations and business goals and objectives. The ICT Service Council was founded to engage businesses and learn about their ICT difficulties and how to address them. ICT risks have been identified, documented, and tracked regularly in the ICT risk register. Various projects and initiatives have been launched to minimise the ICT risks listed on the ICT risk register. There is a strong desire to have the NHLS ICT department ISO 9001 certified. The department has been pre-certified and is awaiting its final audit and, if successful, certification.

Several initiatives have been launched to stabilise the Corporate Data Warehouse space, including the Netezza Refresh, Data Visualisation Tool Acquisition, MicroStrategy Repository, and Informatica migration from the Oracle supercluster to be locally hosted in the MicroStrategy Application Server.

Client Support Services

The IVR (Call Centre System) has been installed and is currently operational. This is done to ensure that the ICT service desk operates efficiently, with all logged calls being monitored. The ITSM software tool procurement process in 2021–2022 was cancelled; nevertheless, a new tender submission has been made for 2023–2024, while waiting for the SCM process to begin. This will ensure that IT incidents and requests are well managed as per IT best practises and can be reported in detail. The NHLS has been granted permission to participate in the RT3-2022 contract for multi-function devices (printer, scanner, and copier). The evaluation and pricing have been completed, and a report is due to be given to the Risk Committee, the Finance Committee, and the Board.

Highlights

During the fiscal year, ten Client Services employees graduated, which is a significant milestone in terms of personal growth for staff members.

COMMUNICATION, MARKETING AND PUBLIC RELATIONS

Mzimasi Gcukumana
Senior Manager: Communication, Marketing and Public Relations

INTRODUCTION

The NHLS Communication, Marketing and Public Relations department plays a critical role in providing comprehensive communication services that include both internal and external communication strategies. The department facilitates the efficient dissemination of important information and the promotion of NHLS goals and objectives by focusing on maintaining effective information channels, cultivating good relationships with the media, managing the organisation's most valuable asset, the brand, and planning and hosting important events.

Media

The mention of NHLS and its divisions and departments, as well as any other diagnostic pathology-related subjects, is monitored daily in print and electronic media. The NHLS media coverage from from 1 April to 31 December 2022 resulted in 1213 mentions; this equates to R44 987 660 in advertising value equivalency (AVE) - a measure used in the public relations industry to measure the benefit to a client from media coverage of a PR campaign. The department also facilitated media replies and interviews with representatives from print and electronic media during the review period.

Below is the breakdown of the publicity earned:

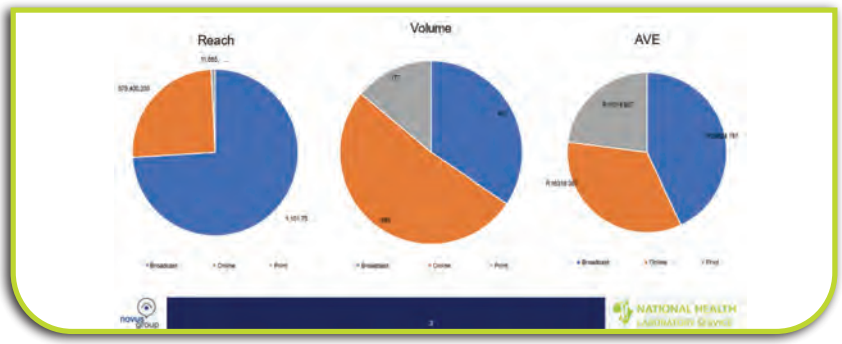


FIGURE 1: Reach,volume and AVE of media platforms.

Events

World TB Day

Every year on March 24, World TB Day is commemorated to increase public awareness of tuberculosis and the campaigns to eradicate it. The Communication, Marketing and Public Relations department supported the North West region in raising awareness about TB and promoting the services, as well as the brand presence, of the NHLS through an exhibition platform and the dissemination of educational materials. These initiatives help educate the public about TB, its prevention, and available treatments.

World AIDS Day

World AIDS Day takes place on December 1 each year and is dedicated to raising awareness about the HIV/AIDS pandemic. The department was engaged in activities that included the dissemination of accurate information about the NHLS' role in HIV/AIDS in South Africa while supporting the Free State region. The national event was held in Bloemfontein.

Outreach

The department actively participated in the Open Day event specifically created for Grade 12 students as an important component of our outreach campaign. The event, which focused on displaying various career options in the medical industry, was successfully organised and hosted at Tsakane's Pholosong Hospital. Dedicated representatives from the department were present at this event, distributing useful marketing materials from the NHLS. They enthusiastically interacted with both interested students and teachers, promoting lively discussions about the great options offered in medical specialties.

Internal campaign

NHLS Gender-Based Violence Campaign

Gender-Based Violence (GBV) is a pervasive issue that affects individuals worldwide. The communication department supported the NHLS GBV campaign by creating awareness around this issue and promoting efforts to prevent and address GBV. The department developed and distributed informational material and collaborated with the Human Resources department to amplify the message.

Stakeholder engagement

High-profile visits

As the designated custodian of NHLS events, the Communications Department took on the responsibility of supporting the Office of the CEO during a visit from a prestigious delegation representing the Namibia Institute of Pathology (NIP). Led by their esteemed CEO, Ms Kapena Tjombonde, the delegation sought to gain insights into NHLS operations to further their own transformative journey towards operational excellence. The delegation also used the visit to tour some of the NHLS facilities in Cape Town and the Charlotte Maxeke Johannesburg Academic Hospital laboratory.

During their visit, the NIP delegation expressed a keen interest in several key areas for benchmarking and familiarisation with NHLS, which included but were not limited to laboratory operations and infrastructure, organisational structure, continuous service delivery, and business development activities. With a focus on expanding its presence in the private market, the NIP delegation sought to explore NHLS' strategies and activities related to business development, aiming to gain valuable insights for enhancing its own market penetration.

By providing the NIP delegation with comprehensive information and facilitating meaningful discussions, NHLS aimed to foster a collaborative exchange of knowledge and experiences, ultimately contributing to the growth and success of NIP in their pursuit of excellence in pathology services.

SUBSIDIARY PERFORMANCE

SOUTH AFRICAN VACCINE PRODUCERS

Dr Clothilde Oliphant
Chief Operating Officer: Strategic Initiatives

South African Vaccine Producers (Pty) Ltd. (SAVP), a wholly-owned subsidiary of the National Health Laboratory Service (NHLS), proudly serves as the exclusive manufacturer of antivenom for the treatment of snake, scorpion, and spider envenomation within South Africa. With a legacy dating back to 1928, SAVP has established itself as a licensed manufacturer and exporter of antivenom, authorised by the South African Health Products Regulatory Authority (SAHPRA). The pivotal role played by SAVP in antivenom production aligns with the National Department of Health's unwavering commitment to ensuring equitable access to life-saving medications for all individuals, irrespective of their race, creed, and economic status.

During the period under review, the NHLS encountered a challenge with the availability of snakebite antivenom through its subsidiary, SAVP. This predicament stemmed from external factors, notably erratic power supply, which impacted the operations related to antivenom production.

Despite these adversities, the NHLS diligently rose to the occasion, scaling up its production capacity and implementing continuous process improvements. Consequently, during December, the NHLS successfully provided antivenom supplies to specific provincial health departments and select private facilities, including Veterinary Practices, ensuring an adequate provision of antivenom across the country.

In addition to the challenges posed by inconsistent power supply, the SAVP encountered infrastructural constraints and equipment breakdowns during the abovementioned period. Regrettably, these factors had an adverse effect on the production of antivenom, leading to delays in sales and a shortage in the overall supply to the market.

As a result, the NHLS took proactive steps to address these and other challenges and purchased extra generators and uninterruptible power supply systems. These critical expenditures ensured the manufacturing systems had a secure and uninterrupted power supply. Furthermore, the NHLS is actively investigating alternate energy sources, such as solar panels and inverters, to reduce the impact of power outages on SAVP's production processes.

SAVP is ready to meet the energy demands of its manufacturing operations while increasing the supply of antivenom to individuals in desperate need, thanks to prudent investments in backup power systems and renewable energy sources.

SAVP has planned substantial renovations and upgrades to modernise its plant while adhering to the strict requirements specified by Good Manufacturing Practise legislation. These efforts demonstrate SAVP's unwavering commitment to improving public health outcomes by assuring a consistent and sustainable supply of high-quality antivenom medicines.

SAVP made significant progress in improving the manufacturing and distribution of snakebite antivenom during the fiscal year under review, particularly in the latter half. These efforts expanded the availability of this life-saving product to individuals in need.

During the reporting period from 01 January 2023 to 31 March 2023, snakebite antivenom was successfully delivered to several institutions. These institutions encompassed several healthcare facilities, including public and private hospitals and veterinary clinics.

Orders for snakebite antivenom that were received from private and public hospitals, as well as veterinarians, were dispatched. These outputs were achieved in the 2023-2024 financial year.

The NHLS is actively addressing the remaining backlog to ensure that the ongoing demand for snakebite antivenom is met.

PART C
GOVERNANCE

Adv Mpho Mphelo
Company Secretary

INTRODUCTION

Corporate governance embodies processes and systems by which the entities are directed, controlled and held to account. In addition to the legislative requirements based on the NHLS enabling legislation, corporate governance guidelines in terms of King IV and the prescripts of the Public Finance Management Act, the Parliament, the Executive Authority, the Accounting Authority and Accounting Officer of the entity are responsible for corporate governance in the entity.

Portfolio committee

The Parliamentary Portfolio Committee (PPC) on Health exercises oversight over the service delivery performance of the public entities reporting to the Health Department.

The NHLS appeared before the Parliamentary Portfolio Committee on Health on the dates set out below:

Table 1 Portfolio committees' meetings.

Date	Parliamentary Structure	Activity/ Focus
19 April 2022	Portfolio Committee on Health	Presentation of the Strategic Plan, Annual Performance Plan (APP) and Budget for the 2022–2023 Financial Year.
11 October 2022	Portfolio Committee on Health	Presentation of the Annual Financial Statements and Annual Report for the 2021–2022 Financial Year
19 April 2023	Portfolio Committee on Health	Presentation of the Strategic Plan, Annual Performance Plan and Budget for the 2023–2024 Financial Year.

Report of the Accounting Authority

The Accounting Authority submits their report for the financial year ending on 31 March 2023.

Statement of commitment

The Accounting Authority is committed to business integrity, transparency, and professionalism in all its activities. As part of this commitment, the Accounting Authority supports the highest standards of corporate governance and the on-going development of best practices.

The mandate of the Board

The mandate of the NHLS Board is set out in the NHLS Act and has been encapsulated in the NHLS Board Charter. The mandate of the Board as set out in the Board Charter is aligned with the requirements stipulated by the Protocol on Governance in Public Entities.

Independence of the Board

Board members are appointed by the Minister of Health. The Board considers submissions and recommendations made by management and makes independent decisions based on their fiduciary responsibilities and the strategic direction of the service.

The various Board committees meet independently and then report back to the Board. Each committee has a formal charter that clearly defines its roles and responsibilities.

The Audit and Risk Committee regularly meets individually with the external and internal auditors. Furthermore, the Board, its committees and individual Board members may engage independent counsel and advisors upon request and at the discretion of the Board.

Board composition

The Accounting Authority is a unitary Board comprised of a majority of non-executive members. The members of the Board are appointed by the Minister in accordance with Section 7 of the NHLS Act.

In terms of NHLS Act No. 37 of 2000, the Board should comprise twenty-two (22) members, including the Chief Executive Officer, Chairperson and Vice Chairperson of the Board. The Minister of Health has appointed a chairperson, and a vice chairperson in terms of Section 9 of the NHLS Act.

The members of the entity during the year and to the date of this report are as follows:

Table 2 Board composition.

#	Name	Constituency	Date of appointment	Term ends	Chairpersonship/ Position in the NHLS
1	Prof Eric Buch (Chairperson)	Minister of Health	01January 2017 Re-appointed 01 May 2021	01 May 2024	Board and GSEC
2	Prof Jeffery Mphahlele	Minister of Health	08 May 2020 Re-appointed 07 May 2023	07 May 2026	RIC
3	Dr Mahlane Phalane	Mpumalanga Province	01 November 2021	01 November 2024	
4	Dr Kamy Chetty	Chief Executive Officer	04 October 2017		EXCO
5	Dr Balekile Mzangwa	Free State Province	18 November 2016 Re-appointed 18 January 2020	18 January 2023	
6	Mr Jonathan Mallett	Northern Cape Province	18 January 2020 Re-appointed 17 February 2023	17 February 2026	

#	Name	Constituency	Date of appointment	Term ends	Chairpersonship/ Position in the NHLS
7	Ms Nicolene Van der Westhuizen	Western Cape Province	01 May 2018 Re-appointed 19 October 2021	18 October 2024	
8	Prof Thanyani Mariba	Limpopo Province	18 January 2020 Re-appointed 17 February 2023	17 February 2026	NAPC
9	Dr Siseko Martin	Eastern Cape Province	08 May 2020 Re-appointed 07 May 2023	07 May 2026	
10	Dr Naledzani Ramalivhana	Public Nominee: Health Research/ Epidemiology	08 May 2020 Re-appointed 07 May 2023	07 May 2026	
11	Mr Michael Sachs	Public Nominee: Economics, Financial Matters/ Accounting	08 May 2020 Re-appointed 07 May 2023	07 May 2026	FinCom
12	Prof Mpho Kgomo	Council on Higher Education (CHE)	08 May 2020 Re-appointed 07 May 2023	07 May 2026	
13	Mr Koena Nkoko	SALGA	08 May 2020 Rea-appointed 07 May 2023	07 May 2026	ARC
14	Dr Lesley Bamford	National Department of Health	08 May 2020 Re-appointed 07 May 2023	07 May 2026	
15	Mr Nick Buick	Minister of Health	19 October 2021	18 October 2024	
16	Mrs Penelope Msimango	KwaZulu-Natal Province	01 November 2021	31 October 2024	
17	Prof Tivani Mashamba-Thompson	Council on Higher Education	19 November 2021	18 October 2024	
18	Ms Nyameka Macanda	Organised Labour	17 August 2022	17 August 2025	

Board Member qualifications and external directorships

The NHLS Board members have the relevant skills, knowledge, and experience to bring judgement to bear on the business of the NHLS. In situations where Board members may lack experience, detailed induction and formal mentoring and support programmes are implemented.

The chairperson, together with the Board, have carefully considered the outside chairpersonships that members hold. The relative size and complexity of the companies in question have been considered. The Board members are satisfied that they have the ability and capacity to discharge their duties.

The qualifications and external directorships of NHLS Board members are disclosed in the table below:

Table 3 Board members qualifications and external directorship.

Name	Qualifications and External Directorships
Prof Eric Buch	**Qualifications** MBChB,Msc (Med),FFCH(cm)(SA),DTM&H,DOH **Directorships** None
Prof Jeffrey Mphahlele	**Qualifications** BSc, BSc Med Hons, MSc, PhD **Directorships** CEPI, EDCTP, GloPID-R, SAHPRA and Poliomyelitis Research Foundation NPC.
Mr Nick Buick	**Qualifications** B.Com, Cert Theory of Accounting, CA(SA) **Directorships** Medres (Pty) Ltd
Dr Mahlane Phalane	**Qualifications** MBCHB, Cert (Clinical Mngt), Cert (HIV Mngt), Dispensing Course, MBA, MSC Sports Med, ABIME cert medical examiner, Adv Trauma Life Support, Basic Life Support, Basic Surgical skills. **Directorships** Mappleman (Gen Del), Amdiler (Gen Del), Hlwape (Gen Del) 50% partnership, Tladi Family Trust, Mpumalanga Dept of Health full time employment
Prof Tivani Mashamba-Thompson	**Qualifications** Foundation Degree, Hons (Applied BiomedSc), Post Grad (BioMedSc), Masters (Phaemaceutical Sc), PhD (Public Health), Grad Cert (Clinical Research) **Directorships** None
Mrs Penelope Msimango	**Qualifications** Dip: General Nursing, Dip: Midwifery, BA Cur (Nursing Education and Com Health), Adv Dip (Midwifery and Neonatal Nursing Sc), Adv Dip (Health Management), Masters in Public Health (in progress) **Directorships** None
Dr Kamy Chetty	**Qualifications** MBChB, MSc URP, FFCH **Directorships** None
Mr Jonathan Mallett	**Qualifications** Nat Cert Medical Lab, Nat Dip Medical Lab, B.Tech, Adv Health Management Cert, BA **Directorships** None
Ms Nicolene Van der Westhuizen	**Qualifications** NDip, Clinical Path **Directorships** None

Name	Qualifications and External Directorships
Prof Thanyani Mariba	**Qualifications** MBChB, FCP(SA), FRCP(London) **Directorships** None
Dr Siseko Martin	**Qualifications** BSc, BSc Hon, MBChB, Dip (DTM&H), FCPath, MMED **Directorships** Dietrich Voigt Mia, Dr WJH Vermark Inc
Dr Naledzani Ramalivhana	**Qualifications** Dip Personnel & Training Management, Adv Dip Occupational Health and Safety, NDip Biomedical Technology, BSc Hon, MPH, MSc, PhD. **Directorships** Afroherbal Science Laboratories
Mr Michael Sachs	**Qualifications** 'O' Levels (GCEE), 'A' Levels (GCEE), MSc (Economics), MPA (International Development) **Directorships** NED- PILO (Registered non-profit company)
Prof Mpho Kgomo	**Qualifications** MBChB, FCP (SA), Gastroenterology, PhD **Directorships** Styleprop (Pty) Ltd, Kgomo Family Trust, Holografix, Kgomo Inc, Head Clinical Unit- UP, Head of the SAGES HoD Academic Head
Mr Koena Nkoko	**Qualifications** Dip Comp Nursing, AdvDip Management, PGDip Health Management, B.Tech OHN & Nursing Management, MPH, MBA **Directorships** None
Dr Lesley Bamford	**Qualifications** MBChB, B.Soc.Sci, FCP, PhD **Directorships** None
Ms Nyameka Macanda	**Qualifications** Higher Cert- Economic Development, Dip – Internal Auditing, Cert- Intro to Computer& Advance Computer skills, Cert- Intro to Labour Law **Directorships** FASSET, NIH, COSATU- Job Creation Trust

Changes in Board membership

Upon the expiration of a committee member's term of office as a member of the Accounting Authority, the member may be eligible for re-appointment for a further term of office provided that no committee member may be appointed for more than two consecutive terms to serve in the same committee. The table below indicates the changes to Board membership that took place during the financial year under review.

Table 4 Changes in Board membership.

Name	Constituency/ Representing	Date of appointment/ * reappointment	Date of resignation/ * retirement
Ms Nyameka Macanda	Organised labour	17 August 2022	
Dr Balekile Mzangwa	Free State Province		18 January 2023

Committees of the Board

The Board, as the Accounting Authority, takes full ownership of the overall decision making across the entity to ensure it retains proper direction and control of the NHLS.

The Board has delegated certain powers to the CEO and to management but has reserved certain powers exclusively for the Board, as set out in the Board Charter.

The Board has also appointed several committees to help it meet these responsibilities. Delegating various functions and authorities to committees and management, however, does not absolve the Board and its directors of their duties and responsibilities.

The Board has delegated certain functions without abdicating its own responsibilities to the following committees:

- Audit and Risk Committee;
- Remuneration and Human Resources Committee;
- Governance, Social and Ethics Committee; (ad hoc Committee)
- Finance Committee;
- National Academic and Pathology Committee;
- Research and Innovation Committee; and
- Executive Committee.

The various committees of the Board each have formal terms of reference embodied in a charter that further defines the mandates, roles and responsibilities of each committee. The charters are reviewed and updated as and when required.

The NHLS Board is governed by the NHLS Act 2000 (Act No. 37 of 2000) and the NHLS Rules made in terms of the Act (supra). The Board complies with the PFMA and King IV principles of good governance.

Minutes of meetings were made and entered in the minute book as a true and accurate representation of what transpired at the meetings.

The majority of members of the Board attended the meetings for the year. Board resolutions were captured in the board resolution file.

Board Meeting Attendance

The Board meets on pre-arranged dates at least once a quarter and other times as deemed necessary. The Board holds annual workshops to review the strategy and conduct an annual risk assessment. During the past 12 months, the Board convened seventeen (17) times (including special meetings). The NHLS Board is required to hold at least four meetings per year. Only members of the Board voted at its meetings, and all its decisions were arrived at by consensus. In each of those meetings, the quorum was met. In each meeting, members were given the opportunity to declare any personal conflict of interest to be recused from the deliberation of the matter in which they were involved. The table below and accompanying legend illustrate meeting attendance of Board members for the financial year:

Table 5 Board and Committees Attendance 01 April 2022– 31 March 2023

Name	Board and committee's attendance 01 April 2022 – 31 March 2023															
	13/04/22	25/05/22	26/05/22	10/08/22	17/08/22	18/08/22	21/09/22	27/10/22	03/11/22	17/11/22	18/11/22	12/12/22	18/01/23	19/01/23	24/02/23	Total
Prof Eric Buch (Chairperson)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	15
Prof Jeffrey Mphahlele (Vice Chair)	A	✓	✓	✓	✓	✓	✓	✓	✓	✓	A	✓	✓	✓	A	12
Prof Mpho Kgomo (Member)	A	A	A	✓	✓	✓	A	✓	A	A	✓	A	✓	✓	✓	8
Prof Thanyani Mariba (Member)	✓	✓	✓	✓	✓	✓	✓	✓	✓	A	A	✓	A	A	n/m	10
Prof Tivani Mashamba-Thompson (Member)	✓	✓	✓	✓	✓	A	✓	✓	A	✓	✓	A	✓	✓	✓	12
Dr Balekile Mzangwa (Member)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	A	✓	n/m	n/m	n/m	15
Dr Naledzani Ramalivhana (Member)	A	✓	✓	✓	✓	✓	A	A	✓	✓	✓	✓	✓	✓	A	11
Dr Siseko Martin (Member)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	15
Dr Lesley Bamford (Member)	A	A	A	✓	✓	✓	✓	A	✓	✓	✓	✓	✓	✓	✓	11
Dr Mahlane Phalane (Member)	✓	✓	✓	✓	✓	✓	A	A	✓	✓	✓	✓	✓	✓	A	12
Mr Nick Buick (Member)	✓	✓	A	✓	✓	✓	✓	A	✓	✓	A	A	✓	✓	✓	11
Mr Koena Nkoko (Member)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	A	✓	✓	✓	14
Mr Jonathan Mallet (Member)	✓	✓	✓	A	✓	A	✓	✓	✓	✓	✓	✓	✓	n/m	n/m	11
Mr Michael Sachs (Member)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	A	✓	14
Mrs Nicolene Van der Westhuizen (Member)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	A	✓	14
Mrs Penelope Msimango (Member)	A	A	A	✓	✓	✓	A	✓	✓	✓	✓	✓	✓	✓	A	6
Ms Nyameka Macanda (Member)	n/m	n/m	n/m	n/m	n/m	n/m	n/m	✓	✓	✓	✓	✓	✓	✓	A	7
Dr Kamy Chetty (CEO)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	15
Total number of meetings	15															

Table 5 Board and Committees Attendance 01 April 2022– 31 March 2023 (continued).

Name	01/03/23	02/03/23	TOTAL	Name	01/03/23	02/03/23	TOTAL	Name	01/03/23	02/03/23	Total
Prof Eric Buch (Chairperson)	✓	✓	2	Dr Balekile Mzangwa (Member)	n/m	n/m	0	Mr Nick Buick (Member)			2
Prof Jeffrey Mphahlele (Vice Chair)	✓	A	1	Dr Naledzani Ramalivhana (Member			2	Mr Koena Nkoko (Member)	A	A	0
Prof Mpho Kgomo (Member)	✓	A	1	Dr Siseko Martin (Member)			2	Mr Jonathan Mallet (Member)			2
Prof Thanyani Mariba (Member)	✓	✓	2	Dr Lesley Bamford (Member)			2	Mr Michael Sachs (Member)	A	A	0
Mrs Penelope Msimango (Member)	✓	✓	2	Ms Nyameka Macanda (Membe			2	Dr Kamy Chetty (CEO)			2
Total number of meetings	**2**										

Total number of meetings: 15 + 2 = 17

LEGEND:

✓ = Present
A = Apology
n/M = Not a member
* = Appointed
B = Absent
% = Retired/Resigned

ORGANISATIONAL GROUP PROFILE

Business and operations

The National Health Laboratory Service (NHLS) is a national public entity established in terms of the National Health Laboratory Service Act No. 37 of 2000 to provide quality, affordable and sustainable health laboratory, and related public health services.

The NHLS is the main provider of clinical support services to the national, provincial and local departments of health through its country-wide network of quality assured diagnostic laboratories. The NHLS also provides surveillance support for communicable diseases, occupational health, and cancer, and thus endeavours to align its strategy to both the DoH priorities and the national and regional burden of disease.

The NHLS is managed according to the provisions of the National Health Laboratory Services Act 37 of 2000, as well as the NHLS Rules, gazetted in July 2007, and the Public Finance Management Act No. 1 of 1999. It is a state-owned organisation governed by a Board and a Chief Executive Officer. The NHLS has a clear organisational structure consisting of a Head Office in Sandringham, Johannesburg, six regions (Eastern Cape, Free State and North West, Gauteng, KwaZulu-Natal, Limpopo and Mpumalanga, and Northern and Western and Northern Cape) and four Institutes (FCLs, NICD, NIOH, and NCR). Each region is headed by a Business Area Manager who reports directly to the Chief Operations Officer. The creation of six regions is designed to ensure that NHLS plans, agrees on budgets, and monitors laboratory services jointly with provincial health partners with the intention of laboratory services being seen and accepted as part of the public health delivery system. POCT is increasingly being used to speed up diagnosis within the health facility. NHLS recognises the value that POCT plays.

The NHLS delivers services throughout the public sector, from PHC level to tertiary and quaternary hospitals. The level of complexity and sophistication of services increases from the peripheral laboratories to the central urban laboratories (with specialised surveillance infrastructure existing at isolated sites). The legacy of apartheid has left the health laboratory services in South Africa concentrated mainly in Gauteng, KwaZulu-Natal, and the Western Cape Provinces, in line with the spread of the previously advantaged institutions of higher learning.

Public sector laboratories are situated within health facilities owned by the DoH, and in some cases universities. Therefore, the condition of the infrastructure depends on the quality of the health facility in which the laboratory is located. Great disparities still exist between urban and rural facilities. Some central, urban facilities are currently undergoing upgrades through the Hospital Revitalisation Programme.

However, many remote rural facilities still require access to basic services.

SAVP is a wholly owned subsidiary of the NHLS and provides the following services:

1. SAVP manufactures biologicals, namely anti-venom which includes:
   i) Polyvalent antivenom
   ii) Echis antivenom
   iii) Boomslang antivenom
   iv) Spider antivenom
   v) Scorpion antivenom
2. Safety testing for pharmaceutical companies;
3. Research on routine products authorized via the animal ethics committee involving animals;
4. Preparation of horses and sheep serum; and
5. Preparation and sampling of horse blood.

GOVERNANCE, COMMITMENTS AND STAKEHOLDER ENGAGEMENT

Introduction

The NHLS ensures that its processes and practices are reviewed on an ongoing basis to ensure compliance with legal obligations, the use of funds in an economic efficient and effective manner and adherence to good corporate governance practices. Processes and practices are characterised by reporting on economic, environmental, and social responsibilities. Such reporting is underpinned by the principles of openness, integrity and accountability and is an inclusive approach that recognises the importance of all stakeholders with respect to the viability and sustainability of the NHLS.

Corporate governance is concerned with structures and processes for decision making, accountability, control and behaviour beginning at the top level of the organisation. Corporate governance sets the tone for behaviour down to the lowest levels.

Legislative and Governance framework

The NHLS is required to comply with, inter alia, the following:

- NHLS Act No.37 of 2000;
- General rules made in terms of S27 of the National Health Laboratory Service Act;
- National Health Act No. 61 of 2003;
- Companies Act No. 71. of 2008;
- Protocol on Good Corporate Governance in the Public Sector,
- Public Finance Management Act No.1 of 1999 (as amended);
- Treasury Regulations issued in terms of PFMA, 1999;
- Preferential Procurement Framework Act No. 5 of 2000;
- Relevant legislation applicable to the Health Sector;
- King IV Code on Good Corporate Governance; and
- Constitution of the Republic of South Africa, Act No.108 of 1996.

Role and Function of the Accounting Authority

The Board is the Accounting Authority of the NHLS in terms of the NHLS Act and PFMA.

The Board is scheduled to meet on a quarterly basis and is responsible for providing strategic direction and leadership, ensuring good corporate governance and ethics, determining policy, agreeing on performance criteria, and delegating the detailed planning and implementation of policy to the EXCO.

The Board should comprise of twenty-two (22) members, including the Chief Executive Officer, Chairperson and Vice Chairperson of the Board (twenty-one members are non-executive members and one member is an executive).

The Board evaluates and monitors management's compliance with policy and achievements against objectives. A structured approach is followed for delegation, reporting and accountability, which includes reliance on various Board committees. The chairperson guides and monitors the input and contributions of the Board members.

The Board has unlimited access to professional advice on matters concerning the affairs of the economic entity, at the economic entity's expense. The Board has approved a Code of Corporate Practice and Conduct, which includes the terms of reference, and provides guidance to the Board members in discharging their duties and responsibilities.

The Board evaluates its effectiveness on an annual basis and formulates plans to mitigate any shortcomings identified by the evaluation process.

Chairperson and Chief Executive

The Chairperson is a non-executive and independent director (as recommended by good corporate governance practices). The chairperson is a standing member of all committees of the Board.

The roles of Chairperson and Chief Executive are separate, with responsibilities divided between them so that no individual has unfettered powers of discretion.

Remuneration and Human Resources Committee

In terms of the NHLS Act, the Remuneration and Human Resources Committee (RHRC) is a committee of the Board that serves to assist it with the performance of its functions and the exercise of its powers. The committee reports on employment equity, employee turnover, skills development, and labour relations.

As part of the continued professional development program, the Board invites corporate governance experts, as recommended by the Institute of Directors, from time to time to present topical matters and the latest developments in corporate governance practices.

In terms of good corporate governance practices, the RHRC has met on eight (8) separate occasions during the financial year.

Attendance at the Remuneration and Human Resources Committee ("RHRC") for the year 1 April 2022 to 31 March 2023:

Table 6 Meeting attendance by the Remuneration and Human Resources Committee members.

Name	06/04/2022	11/05/2022	15/07/2022	20/09/2022	26/10/2022	02/11/2022	16/11/2022	14/02/2023	TOTAL
Dr Balekile Mzangwa (Chairperson)	✓	✓	✓	✓	✓	✓	✓	n/m	8
Mr Jonathan Mallett (Vice- Chair)	A	A	✓	✓	✓	✓	✓	n/m	5
Prof Thanyani Mariba (Member)	✓	A	✓	✓	✓	✓	A	n/m	5
Dr Lesley Bamford (Member)	✓	✓	✓	A	A	✓	✓	✓	6
Dr Mahlane Phalane (Member)	A	✓	A	✓	✓	A	✓	✓	5
Mr Koena Nkoko (Member)	✓	✓	✓	✓	✓	A	A	✓	6
Dr Kamy Chetty (CEO)	✓	✓	✓	✓	✓	✓	✓	✓	8
Total number of meetings	**8**								

LEGEND:

✓ = Present
A = Apology
* = Appointed
B = Absent
n/M = Not a member
% = Retired/Resigned

The Finance Committee

The Finance Committee (FinCom) assists the Accounting Authority in fulfilling its oversight responsibilities on an on-going basis for matters relating to the financial practices and condition of the Economic entity by reviewing the economic entity's financial policies and procedures; keeping informed of the economic entity's financial conditions, requirements for funds, and access to liquidity; and considering and advising the Accounting Authority concerning the economic entity's sources and uses of funds.

In terms of good corporate governance practices, FinCom has met on seven separate occasions during the financial year.

Attendance at the **Finance Committee** ("FinCom") for the year 1 April 2022 to 31 March 2023:

Table 7 Meeting attendance by the Finance Committee members.

Attendance at the Finance Committee ("FinCom") for the year 1 April 2022 to 31 March 2023:								
Name	**21/04/22**	**25/05/22**	**29/06/22**	**11/11/22**	**15/11/22**	**02/02/23**	**15/02/23**	**Total**
Mr Michael Sachs (Chairperson)	✓	✓	✓	✓	✓	✓	✓	7
Mr Nick Buick (Member)	✓	✓	A	✓	✓	✓	✓	6
Dr Balekile Mzangwa (Member)	✓	✓	A	✓	A	n/m	n/m	3
Mrs Penelope Msimango (Member)	✓	✓	✓	A	A	A	✓	4
Dr Mahlane Phalane (Member)	✓	✓	✓	✓	✓	✓	✓	7
Dr Naledzani Ramalivhana (Member)	A	A	A	✓	✓	A	✓	3
Dr Kamy Chetty (CEO)	✓	✓	✓	✓	✓	✓	✓	7

LEGEND:

✓ = Present
A = Apology
n/m = Not a member
* = Appointed
B = Absent
% = Retired/Resigned

The Audit and Risk Committee

In keeping with Treasury Regulation 27 of the PFMA, the Board appointed an Audit and Risk Committee to assist in the discharge of its duties by reviewing and reporting on the governance responsibilities of the Board and the NHLS. The terms of reference of the Audit and Risk Committee, its duties and functions, its composition, and its modus operandi have been approved by the Board.

During the period under review the Committee met three (3) times.

Table 8 Meeting attendance by the Audit and Risk committee members

Name	24/10/2022	01/11/2022	23/03/2023	Total
Mr Koena Nkoko (Chair ARC)	✓	✓	✓	3
Mr Nick Buick (FinCom / ARC member)	✓	A	✓	2
Dr Naledzani Ramalivhana (FinCom / ARC member)	✓	A	✓	2
Mr Jonathan Mallett (ARC member)	A	✓	A	1
Mr Goolam Manack (Independent Member)	✓	n/m	n/m	0
Dr Kamy Chetty (CEO)	✓	✓	✓	3
Total number of meetings	**3**			

LEGEND:

✓ = Present * = Appointed % = Retired/Resigned
A = Apology B = Absent n/m = Not a member

Joint Audit and Risk Committee ("ARC"), and Finance Committee ("FINCOM")

During the period under review, the Audit and Risk Committee and Finance Committee met twice to consider the annual financial statements for the year ending 31 March 2022 before they could be submitted to the Board for further consideration and approval.

Attendance at the Joint Audit and Risk Committee ("ARC") and Finance Committee ("FinCom") for the year 1 April 2022 to 31 March 2023.

During the period under review the Committee met two (2) times.

Table 9 Meeting attendance by the Finance Committee members.

Name	24/05/2022	16/08/2022	Total
Mr Michael Sachs (Chair FinCom)	✓	✓	2
Mr Koena Nkoko (Chair ARC)	✓	✓	2
Mr Nick Buick (FinCom / ARC member)	✓	✓	2
Dr Naledzani Ramalivhana (FinCom / ARC member)	✓	✓	2
Dr Balekile Mzangwa (FinCom member)	✓	✓	2
Mrs Penelope Msimango (FinCom member)	A	A	0
Dr Mahlane Phalane (FinCom member)	✓	✓	2
Mr Jonathan Mallett (ARC member)	A	A	0
Mr Goolam Manack (Independent Member)	A	A	0
Dr Kamy Chetty (CEO)	✓	✓	2
Total number of meetings	**2**		

LEGEND:

✓ = Present * = Appointed % = Retired/Resigned
A = Apology B = Absent n/m = Not a member

Governance and Social Ethics Committee

The Committee is established to assist the Board with the oversight of corporate governance, social and ethical matters and to ensure that the organisation is and remains a committed socially responsible corporate citizen. The commitment to sustainable development involves ensuring that the organisation conducts business in a manner that meets existing needs without knowingly compromising the ability of future generations to meet their needs. The Committee's primary role is to supplement, support, advise and provide guidance on the effectiveness or otherwise of management's efforts in respect of governance, social and ethics and sustainable development related matters which, inter alia, include the following:

a) safety;
b) health and wellness, including occupational hygiene;
c) environmental management;
d) climate change;
e) ethics management;
f) corporate social investment;
g) mine Community Development;
h) stakeholder engagement; and
i) the protection of company assets.

The Committee shall:

a) Review and approve the policy, strategy, structure to manage governance, social and ethics issues in the organisation.
b) Oversee the monitoring, assessment and measurement of the organisation's activities relating to social and economic development, including the organisation's standing in terms of the goals and purposes of:
   i. The ten principles set out in the United Nations Global Compact Principles
   ii. The Organisation for Economic Co-operation and Development (OECD) recommendations regarding corruption
   iii. The Employment Equity Act
   iv. The Broad-Based Black Economic Empowerment Act
c) Oversee the monitoring, assessment and measurement of the organisation's activities relating to good corporate citizenship, including the organisation's promotion of equality, prevention of unfair discrimination, addressing corruption, contribution to the development of the communities in which its activities are predominantly conducted or within which its services are predominantly marketed, and record of sponsorship, donations, and charitable giving.
d) Oversee the monitoring, assessment and measurement of the organisation's activities relating to the environment, health and public safety, including the impact of the organisation's activities and of its services.
e) Oversee the monitoring, assessment, and measurement of the organisation's stakeholder relationships, including its advertising, public relations and compliance with consumer protection laws, in order to ensure that the organisation adheres to its values.
f) Oversee the monitoring of the organisation's labour and employment, including its standing in terms of the International Labour Organization Protocol on decent work and working conditions, the organisation's employment relationships, and its contribution toward the educational development of its employees.
g) Review the adequacy and effectiveness of the organisation's engagement and interaction with its stakeholders.
h) Consider substantive national and international regulatory developments as well as practice in the fields of social and ethics management.
i) Review and approve the policy and strategy pertaining to the organisation's programme of corporate social investment.
j) Determine clearly articulated ethical standards (a Code of Ethics) and ensure that the

organisation takes measures to achieve adherence to these in all aspects of the business, thus achieving a sustainable ethical corporate culture within the organisation.

k) Monitor that management develops and implements programmes, guidelines and practices that are congruent with its social and ethics policies.
l) Review the material risks and liabilities relating to the provisions of the Code of Ethics and ensure that such risks are managed as part of a risk management programme.
m) Obtain external assurance of the organisation's ethics performance on an annual basis and facilitate the inclusion in the integrated report of an assurance statement related to the ethics performance of the organisation.
n) Ensure that management has allocated adequate resources to comply with social and ethics policies, codes of best practice and regulatory requirements.

During the period under review, the Committee met four (4) times. The Committee had to meet more often as it had to deal with matters relating to allegations of irregularities relating to the procurement of PPEs and related disciplinary proceedings against those implicated. The attendance of the GSEC for the period under review was as follows:

During the period under review the Committee met four (4) times.

Table 10 Meeting attendance by the Governance and Social Ethics Committee members.

Name	20/07/2022	21/09/2022	08/11/2022	22/03/2023	Total
Prof Eric Buch (Chairperson of the NHLS Board)	✓	✓	✓	✓	4
Prof Jeffrey Mphahlele (Vice-Chair of the NHLS Board and Chair RIC)	✓	✓	✓	✓	4
Prof Thanyani Mariba (Chair NAPC)	✓	✓	✓	✓	4
Dr Balekile Mzangwa (Chair RHRC)	✓	✓	✓	n/m	3
Mr Michael Sachs (Chair FINCOM)	✓	✓	✓	A	3
Mr Koena Nkoko (Chair ARC)	✓	✓	✓	✓	4
Dr Kamy Chetty (CEO)	✓	✓	✓	✓	4
Total number of meetings	**4**				

LEGEND:

✓ = Present
A = Apology
n/m = Not a member
* = Appointed
B = Absent
% = Retired/Resigned

The National Academic and Pathology Committee

The committee's function is to facilitate the formulation of policy regarding:

a) the conduct of basic research in association or partnership with any tertiary educational institution;
b) co-operation with persons and institutions undertaking basic research in the Republic, and in other countries, through the exchange of scientific knowledge and the provision of access to the resources and specimens available to the Service;
c) the participation in joint research operations with departments of State, universities, universities of technology, colleges, museums, scientific institutions and other persons;
d) co-operation with educational authorities and scientific or technical societies or industrial institutions representing employers and employees, respectively, for the promotion of the instruction and training of pathologists, technologists, technicians, scientists, researchers, technical experts and other supporting personnel in universities, universities of technology, and colleges; and
e) any other matter as may be referred to the committee from time to time by the Board.

As part of its duties, the committee shall monitor and manage the agreements entered into between the Service and each tertiary education institution, including:

a) the development of policies and guidelines to determine the number of registrars for each discipline and the distribution of the registrar posts between the laboratories associated with each university health science faculty;
b) the development of policies and guidelines to determine the number of technologists' training posts for each discipline and the distribution of the posts between the laboratories identified for this purpose;
c) proposing guidelines relating to part-time, honorary, and guest appointments of employees of the Service by tertiary education institutions;
d) monitoring the guidelines for consultant appointments of personnel of tertiary education institutions in the Service as determined by the agreement between the Service and the universities;
e) ensuring that the process of continuing professional development programmes provided by tertiary education institutions in the Service is used by service employees to comply with career programme development requirements;
f) reviewing and managing arrangements for research being undertaken by tertiary education institutions in the laboratories of the Service;
g) advising the executive management on matters relating to indemnity for employees of the Service or a tertiary education institution working between the facilities of both partners;
h) advising the executive management committee on matters relating to the discipline of personnel of the Service or a tertiary education institution working between the facilities of both partners;
i) advising the executive management committee on financial matters, such as subsidies, bursaries, and payment for academic-related services;
j) monitoring, evaluating, and managing service level agreements and performance measures;
k) advising, monitoring, and evaluating the resolution of disputes if they should arise;
l) ensuring the integrity of the process of managing the partnerships;
m) ensuring that professional ethics are adhered to; and
n) ensuring that the service complies with the requirements of the Health Professionals Council in respect of registration requirements, ethics, and conduct.

The National Academic and Pathology Committee (NAP), met on three (3) separate occasions during the financial year. The attendance schedule is as follows:

Table 11 Meeting attendance by the National Academic and Pathology Committee members.

Name	19/05/2022	09/11/2022	09/02/2023	Total
Prof Thanyani Mariba (Chairperson)	✓	✓	✓	3
Prof Jeffrey Mphahlele (Chairperson SC1)	✓	✓	✓	3
Prof Mpho Kgomo (Member)	✓	✓	A	2
Prof Tivani Mashamba – Thompson (Member)	✓	✓	A	2
Mr Jonathan Mallett (Member)	✓	✓	✓	3
Ms Nicolene van der Westhuizen (Member)	✓	✓	✓	3
Dr Kamy Chetty (CEO)	✓	✓	✓	3
Total number of meetings	**3**			

LEGEND:

✓ = Present
A = Apology
* = Appointed
B = Absent

Research and Innovation Committee

The committee has been established as a vehicle for ensuring that the NHLS Research mandate receives attention at the Board level. Members of the Research and Innovation Committee may be called on from time to time to interact with external stakeholders and funding agencies.

The role of the Research and Innovation Committee is to advise the NHLS Board and the NAPC on research policies, strategies, initiatives and innovation that promote the research interests of the organisation and that nurture and enable high quality research.

The objectives of the Research and Innovation Committee are aligned with those stipulated in the South African Health Research Policy of 2001, the National Department of Health 10-point plan and the National Health Research Committee (NHRC).

The Research and Innovation Committee ("RIC") met three (3) times for the period 1 April 2022 to 31 March 2023 and the attendance was as follows:

Table 12 Research and Innovation Committee attendance.

Name	16/05/2022	03/11/2022	08/02/2023	Total
Prof Jeffrey Mphahlele (Chairperson)	✓	✓	✓	3
Prof Tivani Mashamba – Thompson (Vice Chair)	✓	✓	A	2
Dr Naledzani Ramalivhana (Member)	A	✓	A	1
Dr Siseko Martin (Member)	✓	✓	✓	3
Dr Kamy Chetty (CEO)	✓	✓	✓	3
Total number of meetings	**3**			

LEGEND:

✓ = Present
A = Apology
* = Appointed
B = Absent

The Executive and Operational Committee

In terms of the NHLS Act, The Accounting Authority has appointed an Executive Management Committee (EXCO) which consists of:

a) the Chief Executive Officer who acts as chairperson; and
b) Executive Managers within the NHLS and its operational units.

The EXCO is responsible for the management of the NHLS in accordance with the policy of the NHLS and assists with the performance of the Accounting Authority's functions and the exercise of its powers.

The Committee met fourteen times during the period under review, and the attendance is as follows:

EXECUTIVE AND OPERATIONAL COMMITTEE ("EXCO/OPCO")

Attendance at the Executive and Operational Committee for the year 1 April 2022 to 31 March 2023.
During the period under review the Committee met fourteen (14) times.

Table 13 Executive and Operational Committee attendance.

Name	04/04/22	09/05/22	06/06/22	18/07/22	22/08/22	19/09/22	03/10/22	08/11/22	05/12/22	09/01/23	06/02/23	Total
Dr Kamy Chetty (Chairperson)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	11
Mr Jonas Shai (Acting CFO)	✓	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	1
Ms Pumeza Mayekiso (Acting CFO / CFO)	n/m	✓	✓	✓	A	✓	A	✓	✓	✓	✓	8
Mr Sibongiseni Hlongwane (CIO)	✓	✓	✓	✓	✓	✓	✓	✓	✓	A	✓	10
Prof Koleka Mlisana (AARQA Executive Manager)	A	✓	✓	✓	✓	✓	✓	✓	✓	A	✓	9
Dr Spo Kgalamono (Director NIOH)	✓	✓	✓	A	✓	✓	✓	✓	✓	✓	✓	10
Prof Adrian Puren (Director NICD)	n/m	✓	✓	✓	A	✓	A	✓	✓	✓	✓	8
Ms Makgopelo Mkhwanazi (HR Executive Manager)	✓	✓	✓	✓	✓	✓	✓	A	✓	✓	✓	10
Advocate Mpho Mphelo (Company Secretary)	✓	A	✓	✓	A	✓	✓	A	✓	✓	✓	8
Prof Wendy Stevens (NPP Executive)	✓	✓	A	A	✓	✓	✓	✓	A	A	✓	7
Prof Elizabeth Mayne (EC Chair)	✓	✓	✓	✓	✓	A	✓	✓	✓	✓	A	9
Ms Violet Gabashane (SM: Monitoring and Evaluations)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	11
Mr Nkosinathi Khumalo (Head: Internal Audit & Risk)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	11
Mr Mzimasi Gcukumana (SM: Communications)	✓	A	✓	✓	A	✓	✓	✓	✓	✓	✓	9
Dr Alida Grove (Representative: FCL)	A	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	n/m	0
Mr Kenneth Xaba (Representative: FCL)	n/m	A	A	A	✓	A	A	n/m	n/m	n/m	n/m	1
Ms Kagiso Tsatsi (Head: FCL)	n/m	n/m	n/m	n/m	n/m	n/m	✓	✓	✓	✓	✓	4
Mr Jone Mofokeng (Area Manager: FS and NW)	✓	✓	✓	A	✓	✓	✓	✓	✓	✓	A	9
Ms Tabita Makula (Area Manager: EC)	A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	10
Mr Sibulele Bandezi (Area Manager: KZN)	✓	✓	✓	✓	✓	✓	✓	✓	✓	A	✓	10
Mr Jacob Lebudi (Area Manager: Limp and MP)	✓	✓	✓	✓	✓	A	✓	✓	✓	✓	✓	10
Ms Nasima Mohamed (Area Manager: NC and WC)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	A	10
Mr Bahule Motlonye (Area Manager: GP)	✓	✓	✓	✓	A	✓	A	✓	✓	✓	A	8
Total number of meetings	**11**											

Table 13 Executive and Operational Committee attendance. (continued)

Name	06/03/23	13/03/23	17/03/23	Total	Name	06/03/23	13/03/23	17/03/23	Total
Dr Kamy Chetty (Chairperson)	✓	✓	✓	3	Mr Mzimasi Gcukumana (SM: Communications)	✓	✓	✓	3
Ms Pumeza Mayekiso (CFO)	✓	A	✓	2	Ms Kagiso Tsatsi (Head: FCL)	✓	✓	A	2
Mr Sibongiseni Hlongwane (CIO)	✓	✓	✓	3	Mr Jone Mofokeng (Area Manager: FS and NW)	✓	✓	✓	3
Prof Koleka Mlisana (AARQA Executive Manager)	✓	✓	✓	3	Ms Tabita Makula (Area Manager: EC)	✓	✓	✓	3
Dr Spo Kgalamono (Director NIOH)	✓	✓	✓	3	Mr Sibulele Bandezi (Area Manager: KZN)	A	✓	✓	2
Prof Koleka Mlisana (AARQA Executive Manager)	✓	✓	✓	3	Mr Jacob Lebudi (Area Manager: Limp and MP)	✓	✓	✓	3
Dr Spo Kgalamono (Director NIOH)	✓	✓	✓	3	Ms Nasima Mohamed (Area Manager: NC and WC)	✓	✓	✓	3
Prof Adrian Puren (Director NICD)	✓	✓	A	2	Mr Bahule Motlonye (Area Manager: GP)	✓	A	✓	2
Ms Makgopelo Mkhwanazi (HR Executive Manager)	✓	✓	✓	3					
Advocate Mpho Mphelo (Company Secretary)	✓	✓	✓	3					
Prof Wendy Stevens (NPP Executive)	✓	A	✓	2					
Prof Elizabeth Mayne (EC Chair)	✓	✓	A	2					
Ms Violet Gabashane (SM: Monitoring and Evaluations)	✓	✓	✓	3					
Mr Nkosinathi Khumalo (Head: Internal Audit and Risk)	✓	✓	✓	3					
Total number of meetings	**3**								

Total number of meetings: 11 + 3 = 14

LEGEND:

✓ = Present
A = Apology
n/m = Not a member
* = Appointed
B = Absent
% = Retired/Resigned

COMPANY SECRETARY

The Company Secretary plays a critical role in providing secretarial and advisory services to the Board and its committees. Furthermore, the Company Secretary is a liaison officer between the management and the Board, and between the Board and Shareholders on issues relating to governance, thus giving effect to governance protocols. The Company Secretary is the custodian of the register of Board and Committee decisions.

The Company Secretary guides both the executives and non-executive members of the Board in the discharge of their fiduciary duties and ensures that Board proceedings are carried out in accordance with the relevant legislative requirements.

The Company Secretary is well experienced and qualified to fulfil the following roles:

- Induction of new Board members;
- Providing Board members collectively and individually with guidance as to their duties, responsibilities and powers;
- Making Board members aware of any law relevant to or affecting the entity;
- Providing guidance to and advising the Board on ethical matters and good governance principles;
- Recording of Board and Committee proceedings;

Board members have unlimited access to the advice and services of the Company Secretary.

Audit and Risk Committee Report

The Audit and Risk Committee is pleased to present its report for the financial year that ended on 31 March 2023.

Audit and Risk Committee responsibility

The committee reports that appropriate formal terms of reference were adopted in its Charter, in line with the requirements of Section 51(1)(a)(ii) of the PFMA and Treasury Regulation 27. The committee further reports that its affairs were conducted in compliance with this Charter.

The effectiveness of internal control

The committee reviewed various reports prepared by both internal and external auditors to assess the adequacy and effectiveness of the internal control environment as well as the Annual Financial Statements (AFS). The assessment is based on the following three parameters namely: Satisfactory, where business process controls were reported as both adequate and effective; Weak, where some controls within the business process were reported as ineffective; and Unsatisfactory, where some controls within the business process were reported as both inadequate and ineffective. The committee assessment outcomes are depicted in the table below and are based on eight business processes.

Table 14 The effectiveness of internal controls.

No	Business process	Control assessment
1	Compliance	😐
2	Financial health	☺
3	Financial management	😐
4	Human resources	😐
5	Information technology	😐
6	Procurement and contact management	😐
7	Performance management	☺
8	Oversight and monitoring	☺

Heatmap legend:	☺ Satisfactory	😐 Weak	☹ Unsatisfactory

Management is committed to improving the control environment where gaps exist. This will be monitored by the Audit and Risk Committee on an on-going basis.

The committee notes with concern that management did not submit the status of resolution on previously reported findings by the external auditors. The Internal Audit Function will perform follow-up audits to establish whether corrective actions have been implemented by management and provide feedback to the committee during quarterly meetings.

Internal audit

The committee is satisfied with the effective role the Internal Audit Function is playing in the organisation. The Internal Audit Function received a "Generally Conforms" outcome during the independent assessment for the quality assurance and improvement programme, in accordance with the International Professional Practice Framework of the Institute of Internal Auditors (IIA). Furthermore, Mr Nkosinathi Khumalo (NHLS Head of Risk Management and Internal Audit department) received the Excellence in Internal Audit Leadership Award from the IIA in November 2022.

The committee reviewed the internal audit reports and indicated the need for management to address the reported findings. The reports reviewed include, among others:

- Tender Compliance;
- Operational Laboratory;
- Payroll and Human Resources;
- Property, Plant and Equipment;
- Audit of Performance Information;
- Accounts Receivable and Revenue;
- Procurement and Accounts Payable;
- Information Technology General and Application Controls; and
- Follow-up on reported audit findings.

Risk management

The responsibility for risk management resides with management, with the Board playing an oversight role. Risk management processes are embedded throughout the organisation, from the Board level to all employees within the organisation. The NHLS conducts risk assessment workshops to ensure that significant risks are identified and managed on an ongoing basis.

As authorised by the Board, the NHLS has a dedicated Risk Management and Internal Audit Department to coordinate the implementation of its risk management strategy. The Audit and Risk Committee (ARC) continues to assist the Board in fulfilling this obligation. Strategic and operational risk assessment workshops were facilitated during the financial year. The progress on the implementation of the risk mitigation action plan was submitted during ARC meetings. This enabled the committee to monitor the effectiveness of these actions in mitigating the identified risks.

Fraud and Corruption

Anonymous tip-off platforms for reporting fraud, corruption, and unethical behaviour were operational throughout the financial year. These platforms are administered by an independent service provider. The reported allegations were investigated, and final investigation reports with findings, conclusions, and recommendations were presented at committee meetings. The committee obtained a commitment from management that recommendations from the investigation reports were being implemented.

Competency of the Finance department

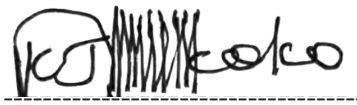
The committee acknowledges that the Finance department has capacity challenges. Management has committed to remedying the identified gaps to strengthen the skills and competency of the Finance department.

Evaluation of the Group Annual Financial Statements

During the reporting year, the committee has reviewed the following:

- The audited Group Annual Financial Statements;
- Management report from external auditors;
- Accounting policies and practices;
- Compliance with legal and regulatory provisions; and
- Significant adjustments to Group Annual Financial Statements.

The committee concurs with the external auditors' report and is of the opinion that the audited Group Annual Financial Statements should be accepted. Moreover, having had regard to NHLS' statutory and other responsibilities as well as all factors that may have an impact on the integrity of the financial statements, the committee accepted the application of the going concern premise and recommended that the NHLS board approve the Group Annual Financial Statements.



Mr Koena Nkoko
Chairperson: Audit and Risk Committee

PART D

HUMAN RESOURCES

Ms Makgopelo Mkhwanazi
Executive Manager:
Human Resources

Executive Summary

The NHLS Human Resources strives to capacitate employees and managers by recognising their needs and creating and maintaining a positive work culture towards accomplishing its goals. To achieve this, our Human Resources department aims to provide a competitive employee value proposition by offering intentional training and development programmes and continuously empowering our employees while maintaining equitable, fair, and transparent processes.

With the many demands of the Human Resources offering, the department strives to ensure a balance and work within the allocated budget. Personnel expenditure has increased by 11.3%, attributed to the annual general increase for two financial years, namely 2021-22 and 2022-23, at a percentage rate of 3.5% for bargaining employees and 3% for non-bargaining employees. The NHLS also implemented performance pay progression for all qualifying employees.

The NHLS continually prioritises its employees' skills development by implementing the Workplace Skills Plan (WSP). During the financial year 2022-23, the NHLS provided training for skills development to over six thousand employees with an average training cost of just under nine thousand per employee. In addition, the NHLS continues to train unemployed learnerships and internships, with over 350 learners trained during the reporting period.

The Human Resources department has implemented various projects during the reporting year aimed at improving the lives of its employees and their dignity. We ran a successful gender-based violence awareness campaign, culminating in a talk through a guest speaker from our Employee Assistance Programme partners.

Though the representation of People with Disabilities remained lower than the target by 0.5%, plans are in place to implement targeted recruitment through leanership/internship programmes with the aim of absorbing in certain areas.

To ensure that there is always consistency and fairness in the organisation, we embarked on several policy reviews in consultation with employees, management, and labour stakeholders.

Finally, I am pleased to announce that we have successfully recruited two female executives for the positions of Chief Finance Officer and Chief Operating Officer: Strategic Initiatives.

Table 1 Personnel Cost by programme/activity/objective.

Programme/activity/ objective	Total Expenditure for the entity	Personnel Expenditure (R'000)	Personnel exp. as a % of total exp.	No. of employees	Average personnel cost per employee
Total remuneration cost	9 490 325 000	4 790 769	50%	8 302	4 565 121,71

Table 2 Personnel cost by salary band.

Programme/activity/ objective	Personal Expenditure (R'000)	% of personnel exp. to total personnel cost	Average No. of Employees	Average Personnel cost per employee
Top Management	17 456	0,36	13	1 325 796,58
Senior Management	88 720	1,85	42	2 108 202,39
Prof Qualified and Experienced Specialist and Mid-Management	1 221 432	25,50	1 019	1 198 560,28
Skilled, Academic, Jr Mgmt, Supervisors, Foremen and Supts	2 044 027	42,67	3 028	675 004,96
Semiskilled and Discretionary Decision Making	1 233 100	25,74	3347	368 474,76
Unskilled and Defined Decision Making	186 031	3,88	866	214 879,32
Total	**4 790 769**	**99,64**	**8 302**	**4 565 121,71**

Personnel expenditure as a generalisation showed an increase of 11.3% (4 790 769) compared to the previous year's costing, which was 4 304 630. The semiskilled occupational level showed the highest increase of 34% compared to the previous year, followed by the top management level with an increased percentage of 12.8% compared to last year, while the senior management category increased by 3.5%. The average personnel cost per employee for professionals, skilled and unskilled occupational levels appears to have decreased compared to last year.

Staff headcount has decreased by 2.4% compared to the previous year. Headcount for all occupational levels has also decreased, except for students in training platforms, which has increased by 45.5% compared to last year.

The general increase in personnel expenditure can be attributed to the annual salary increase for the 2021-22 and 2022-23 financial years implemented last year.

Table 3 Training costs.

Training type	Personnel Expenditure R'000	Training Expenditure R'000	Training Expenditure as a % of Personnel Cost (%)	No. of Employees Trained	Average Training Cost per Employee (R)
Non-PIVOTAL* programmes (short courses, workshops, seminars, congresses and continuous professional development interventions)	5 093 695	56 165 231	0,0110264201	6 271	8 956,34
PIVOTAL programmes for non-employees (higher education qualifications)	N/A	N/A	N/A	N/A	N/A
PIVOTAL programmes for non-employees participating in learnership, on-the-job training and workplace experience	42 523 891	NA	NA	351	121 323,51

*The Personnel expenditure and training expenditures costs.
*Non-PIVOTAL Programmes means credit and non-credit bearing programmes Non- credit-bearing learning interventions, not leading to qualifications or part qualifications
*PIVOTAL = Professional, vocational, technical and academic learning programmes that result in occupational qualifications or part qualifications on the National Qualifications Framework.

The NHLS continues to fulfil its mandate of promoting and prioritising skills development through the analysis of its employees' skills needs by implementing the WSP and Annual Training Report.

The NHLS has spent 1% of the salary bill and personnel expenditure on training; this expenditure is in line with the skills development legislation, where the average cost and expenditure per employee is plus eight (+8) thousand.

The expenditure on PIVOTAL programmes for unemployed learnerships and internships is 42 million for 351 learners doing health science qualifications who were placed at NHLS for the above period to gain the workplace-based experience required to be employable in the sector and industry.

Multiple learning programmes are offered through short learning programmes, in-service conferences and congresses, as well as CPD programmes to enable the organisation to comply with legislation, build its scientific knowledge capacity and expertise to improve the quality of services, ensure business continuity and sustainability, and assist in the mitigation of risks associated with talent management, scarce and critical skills.

Table 4 Employment and Vacancies.

Programme/activity/ objective	2021/2022 No. of Employees	2021/2022 Approved Posts	2022/2023 No. of Employees	2022/2023 Vacancies	% of vacancies
Top Management	8	9	9	1	11,1%
Senior Management	42	64	38	22	34,4%
Professional Qualified	916	1 176	853	260	22,1%
Skilled	3 222	3 490	3 040	268	7,7%
Semiskilled	2 992	3 312	2 867	320	9,7%
Unskilled	798	837	787	39	4,7%
Training - learnerships	409	409	599	0	0%
Total	**8 387**	**9 297**	**8 193**	**910**	**9,8%**

The above table reflects the staff headcount at the beginning and end of the reporting period, including vacancies.

The staff headcount at the beginning of the current reporting period was 8387, which has since decreased by 2.4% from April 2022 to 31 March 2023.

A total number of 910 vacancies were recorded at 31 March 2023, which equates to a vacancy rate of 9.8%. This vacancy rate may appear high. However, a few factors contributed to it, such as grant-funded vacancies and other factors explained below.

In an organisation like ours, a high vacancy rate does not necessarily mean we neglect filling vacant positions on time. The NHLS is unique in that we provide numerous specialised diagnostic services. As a result, most of our positions require highly qualified and experienced individuals from various pathology disciplines. This always poses a challenge, as these skills are scarce, not only in our country but also in a globally space. It should be noted that while our organisation is willing and committed to filling these types of positions when currently qualified incumbents reach retirement age or separate from the NHLS, it is not always possible to find suitable candidates who are a perfect 'fit' for the job on time.

Another contributing factor to a high vacancy rate is that not all our vacant posts are funded. Since the beginning of the COVID-19 pandemic, priority has been given to the bulk recruitment of health professionals and pre-analytical positions in all our national laboratories. Our organisation has, however, in the past twelve months, managed to attract and fill various office support positions and top management roles that were vacant for some time.

Table 5 Employment changes.

Programme/activity/objective	Employment at beginning of period	Appointments	Terminations	Employment at end of the period
Top Management	8	2	1	9
Senior Management	42	1	5	38
Professional Qualified	916	47	110	853
Skilled	3 222	23	205	3 040
Semiskilled	2 992	63	188	2 867
Unskilled	798	27	38	787
Training - learnerships	409	290	100	599
Total	**8 387**	**453**	**647**	**8 193**

The table above reflects the total staff headcount at the beginning, plus the end of the reporting period, as well as movements. The headcount for top management increased by one compared to last year because of the appointment of the Chief Operating Officer: Strategic Initiatives. All the occupational categories appear to have decreased except for the students in the training platforms, which increased by 46.5% from FY2021/22 to the current reporting period.

The total number of voluntary resignations was 280 during FY2022-23, which included resignations of employees in all contract types. The annual turnover rate at 31 March 2022 was 3,2%, based on headcount and annual voluntary resignations of permanent staff plus fixed-term contracts above 18 months only.

Table 6 Resons for leaving.

Reason	Total count	% of total no. of staff leaving
Death	21	0,3%
Resignation	280	3,4%
Dismissal	22	0,3%
Retirement	84	1,0%
Ill health	6	0,1%
Expiry of contract	234	2,9%
Total	**647**	**7,9%**

During the current reporting period, the total number of voluntary resignations decreased by 34.2% compared to last year. This is a positive record contributing to a low attrition rate. Dismissals decreased by 50% compared to FY2021-22, which is quite an improvement for our organisation compared to the past three years. Although the termination report revealed that the number of deceased staff decreased by 33% compared to last year, it saddens us to report such a high number of deceased employees in our organisation year after year.

Table 7 Labour Relations - Misconduct and Disciplinary Action.

Nature of disciplinary Action	Number
Verbal Warning	13
Written Warning	25
Final Written warning	23
Dismissal	23
Not Guilty	2
Pending	12
Resigned	3
End of contract	1
Total	**102**

Table 8 a) Equity Target and Employment Equity Status - Males per ethnic group.

Programme/activity/objective	MALE							
	African		Coloured		Indian		White	
	Current	Target	Current	Target	Current	Target	Current	Target
Top Management	2	3	1	1	0	0	0	1
Senior Management	7	11	0	1	1	1	3	4
Professional Qualified	123	190	27	31	43	39	80	82
Skilled	744	860	66	95	52	54	49	92
Semiskilled	752	897	73	131	34	33	8	34
Unskilled	319	318	9	18	0	1	1	12
Total	**1947**	**2279**	**176**	**277**	**130**	**128**	**141**	**225**

The Department of Employment and Labour provides statistics of the economically active population (EAP) demographics annually according to race and gender that we are required to align in our recruitment processes to achieve the provisions of the Employment Equity Act No 55 of 1998.

African males and Coloured males – They remain our EE targets in all the occupational levels except for top management for Coloured males.

White males – Their current profile is lower than the targeted number due to terminations since the time of the target setting.

All male race and gender groups are underrepresented at the skilled level, becoming the main EE targeted groups.

Table 8 b) Equity Target and Employment Equity Status - Females per ethnic group.

Programme/activity/objective	FEMALE							
	African		Coloured		Indian		White	
	Current	Target	Current	Target	Current	Target	Current	Target
Top Management	4	3	1	0	1	1	0	0
Senior Management	8	9	2	2	5	5	6	7
Professional Qualified	299	322	37	38	101	101	165	179
Skilled	1694	1652	158	161	156	158	196	204
Semiskilled	1480	1460	189	193	44	43	63	74
Unskilled	469	466	23	24	0	1	0	10
Total	**3954**	**3912**	**410**	**418**	**307**	**309**	**430**	**474**

African females have exceeded their target in top management, creating an overrepresentation at this level; however, they remain EE targets at the senior and professionally qualified levels.

White females – their target at the professionally qualified and senior management level is higher than their current level due to terminations that have occurred since target setting. These are positive movements that will reduce their overrepresentation.

All female races and gender groups are overrepresented at the skilled level; hence, the target should focus on all males.

Table 8 c) Equity Target and Employment Equity Status - People with Disabilities.

Programme/activity/objective	DISABLED STAFF			
	Male		Female	
	Current	Target	Current	Target
Top Management	0	0	0	0
Senior Management	0	0	0	0
Professional Qualified	1	0	0	0
Skilled	3	5	15	17
Semiskilled	2	4	4	6
Unskilled	2	7	0	5
Total	**8**	**16**	**19**	**28**

The representation of people with disabilities remains at 0.5% below the compliance target of 2%. Programmes such as learnerships/internships and targeted recruitment will address the underrepresentation.

PART E

FINANCIAL INFORMATION

GENERAL INFORMATION

Country of incorporation and domicile	South Africa
Nature of business and principal activities	Healthcare, research and training
Board members	Dr Gerhard Goosen Dr Kamy Chetty Dr Lesley Bamford Dr Siseko Martin Mr Jonathan Mallett Mr Koena Joseph Nkoko Mr Michael Sachs Mr Nick Buick Mrs Nicolene van der Westhuizen Ms Thandi Msimango Prof Eric Buch Prof Jeffrey Mphahlele Prof Mpho Klass Kgomo Prof Thanyani Mariba Prof Tivani Mashamba - Thompson
Registered office	1 Modderfontein Road Rietfontein Sandringham Johannesburg 2000
Bankers	First National Bank Ltd Nedbank Ltd Investec Ltd Rand Merchant Bank Ltd
Auditors	Nexia SAB&T
Website	www.nhls.ac.za
Practice number	PR5200296
Legislation governing NHLS operations	The National Health Laboratory Service (NHLS) Act, no. 37 of 2000 The Public Finance Management (PFMA) Act, no.1 of 1999 Treasury regulations in terms of PFMA, 1999 The Companies Act, No. 71 of 2008 The National Health Act, No. 61of 2003
Published	08 August 2023

CONTENT

The reports and statements set out below comprise the annual financial statements presented to parliament:

The following supplementary information does not form part of the audited group annual financial statements and is unaudited:

OTHER MATTERS

Irregular expenditure Confirmed

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Identified during for the current year	705 007	1 284 344	705 007	1 284 344
Previously identified and confirmed	-	6 198	-	6 198
2021/22 irregular expenditure identified in 2022/23	-	-	-	
As reported in the financial statements (note 36)	705 007	1 290 542	705 007	1 290 542
Less: Condoned				
Less: Not condoned but removed				
Less: Irrecoverable				
Less: amounts not recovered and written off				
Total	**705 007**	**1 290 542**	**705 007**	**1 290 542**

Reconciling notes to the annual financial statement disclosure

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Irregular expenditure was under assessment in 2021/2022	-	6 198	-	6 198
Irregular expenditure that relates to 2021/2022 that was identified in 2022/23	-	-	-	-
Irregular expenditure for the current year	705 007	1 284 344	705 007	1 284 344
Total	**705 007**	**1 290 542**	**705 007**	**1 290 542**

Details of current and previous year irregular expenditure

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Under assessment	11 845	6 198	11 845	6 198
Under determination	-	-	-	-
Under investigation	-	-	-	-
Total	**11 845**	**6 198**	**11 845**	**6 198**

The amounts of R6 198 000 for 2021/22 include amounts that were confirmed in 2022/23

Ms Pumeza Mayekiso
Chief Financial Officer

CHIEF FINANCIAL OFFICER'S REPORT

Introduction

The 2022/23 financial year was characterised by the National Health Laboratory Service (NHLS) continuing to improve its financial position through solid financial performance and careful management of all expenditure. This comes after the COVID-19 pandemic has had a negative impact on the NHLS and all its stakeholders over the past two consecutive financial years. The NHLS continued to gain traction towards fully re-establishing its services rendered at pre-COVID-19 pandemic levels and exceeding them. This is demonstrated in the increase in revenue (Excluding COVID-19), which increased from R9.2 billion in 2021/22 to R10.6 billion in 2022/23. To this end, the NHLS has maintained a strong financial position for the financial year ended 31 March 2023.

The NHLS has maintained an unqualified audit opinion with findings for the last five consecutive financial years.

Overview: Statement of Financial Position

The NHLS' assets increased from a restated R7.8 billion to R10.5 billion. Receivables increased due to the implementation of GRAP 104, as indicated above. Cash and cash equivalents increased from R3.5 billion to R5.1 billion in the current year. Current liabilities decreased from R2.2 billion to R1.9 billion (a 16% decrease), mainly due to a decrease in payables from exchange transactions and provisions. The NHLS has maintained strong financial viability and has consolidated and enhanced its cash reserves.

Overview: Statement of Financial Performance

The NHLS generated a surplus of R3.2 billion for the 2022/23 financial year, an increase from the restated R77.4 million in the previous financial year. This is primarily driven by the recalculation of the provision for doubtful debt in line with the implementation of the new requirements in relation

to the accounting framework (GRAP104). The organisation's revenue declined from R12.2 billion to R11.8 billion. Revenue from rendering services accounts for 94% (R11 billion) of total revenue. Costs of sales, which includes direct labour and material, decreased from R10,1 billion to R9.1 billion. This equates to a 10% decrease. Labour costs constituted 47% of the cost of sales. Direct material costs constituted 51% of the cost of sales, compared to 54% in the previous financial year.

Cash flow

A net cash inflow of R1.7 billion was received in the 2022/23 financial year. This is mainly attributable to a net cash inflow from operating activities. Suppliers were paid R4.8 billion during the year compared with R7.1 billion in the prior year with the amount paid in relation to employee costs amounting to R4.8 billion. A net cash outflow from investing activities of R91 million was also incurred. This is mainly attributable to the purchase of laboratory equipment.

Going concern

Given its significance in the public and private health sectors and its ability to deliver affordable pathology health services to the South African public, the Department of Health has neither the intention nor the need to liquidate or curtail the scale of the NHLS. Management considered a wide range of factors in determining whether the organisation is a going concern. These factors include its current and expected performance as a Schedule 3A public entity, its restructuring plans, and the likelihood of future government funding. For the financial period under review, the NHLS has enhanced cash and cash equivalents at levels that ensure continuity of service. Debtors' collection remains within acceptable levels. The group's annual financial statements were therefore prepared based on the accounting policies applicable to a going concern. In line with the applicable accounting standards, this basis presumes that funds will be available to finance future operations and that the realisation of assets and liabilities, contingent obligations, and commitments will occur in the ordinary course of business. This specifically assumes that the debt owed by provinces will continue to be adequately serviced.

Maintenance of financial control systems

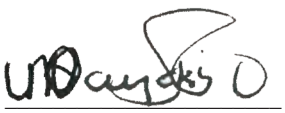
The Board is ultimately responsible for systems of internal financial control within the NHLS and places considerable importance on maintaining a strong control environment. Based on assessments of internal and external audits, assurance is provided that the NHLS' internal controls are effective. Without qualifying the effectiveness of controls, the internal and external audit has also highlighted certain areas where internal controls need to be strengthened, and management is committed to addressing these.

Borrowing limitations

In terms of the NHLS' rules, the Board may exercise all the powers of the economic entity to borrow money as it considers appropriate, in accordance with the PFMA. The entity did not borrow funds to finance its operations during the financial year under review.

Acknowledgements

It is imperative to express appreciation to the Board for the strategic direction. In addition, the CEO's leadership has proven invaluable in carrying out the entity's mandate. The dedication of the NHLS' management and staff has brought the true spirit of service to bear.



Ms Pumeza Mayekiso
Chief Financial Officer

ACCOUNTING AUTHORITY'S RESPONSIBILITIES AND APPROVAL

The Accounting Authority is required by the Public Finance Management Act (Act 1 of 1999), to maintain adequate accounting records and are responsible for the content and integrity of the annual financial statements and related financial information included in this report. It is the responsibility of the Accounting Authority to ensure that the annual financial statements fairly present the state of affairs of the economic entity as at the end of the financial year and the results of its operations and cash flows for the year then ended. The external auditors are engaged to express an independent opinion on the annual financial statements and was given unrestricted access to all financial records and related data.

The annual financial statements have been prepared in accordance with Standards of Generally Recognised Accounting Practice (GRAP) including any interpretations, guidelines and directives issued by the Accounting Standards Board.

The annual financial statements are based upon appropriate accounting policies consistently applied and supported by reasonable and prudent judgements and estimates.

The Accounting Authority acknowledge that it is ultimately responsible for the system of internal financial control established by the economic entity and place considerable importance on maintaining a strong control environment To enable the Accounting Authority to meet these responsibilities, the accounting authority sets standards for internal control aimed at reducing the risk of error or deficit in a cost effective manner. The standards include the proper delegation of responsibilities within a clearly defined framework, effective accounting procedures and adequate segregation of duties to ensure an acceptable level of risk. These controls are monitored throughout the economic entity and all employees are required to maintain the highest ethical standards in ensuring the economic entity's business is conducted in a manner that in all reasonable circumstances is above reproach. The focus of risk management in the economic entity is on identifying, assessing, managing and monitoring all known forms of risk across the economic entity. While operating risk cannot be fully eliminated, the economic entity endeavours to minimise it by ensuring that appropriate infrastructure, controls, systems and ethical behaviour are applied and managed within predetermined procedures and constraints.

The Accounting Authority are of the opinion, based on the information and explanations given by management, that the system of internal control provides reasonable assurance that the financial records may be relied on for the preparation of the annual financial statements. However, any system of internal financial control can provide only reasonable, and not absolute, assurance against material misstatement or error.

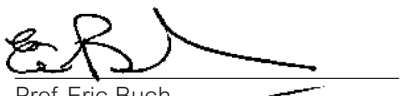
The Accounting Authority have reviewed the economic entity's cash flow forecast and, in the light of this review and the current financial position, are satisfied that the economic entity has access to adequate resources to continue in operational existence for the foreseeable future.

The economic entity is wholly dependent on public healthcare providers for continued funding of operations. The annual financial statements are prepared on the basis that the entity is a going concern and that the National Department of Health has neither the intention nor the need to liquidate or curtail materially the scale of the entity.

Although the accounting authority is primarily responsible for the financial affairs of the economic entity, it is supported by the economic entity's internal auditors.

The annual financial statements set out on pages 174 to 226, which have been prepared on the going concern basis, were approved by the Accounting authority on 08 August 2023 and were signed on its behalf by:

Dr Kamy Chetty
Chief Executive Officer



Prof Eric Buch
Chairperson: Accounting Authority

Independent Auditor's Report to Parliament on National Health Laboratory Service

Report on the audit of the consolidated and separate financial statements

Opinion

1. We have audited the consolidated and separate financial statements of the National Health Laboratory Service and its subsidiary (the group) set out on pages 174 to 226, which comprise the consolidated and separate statement of financial position as at 31 March 2023, consolidated and separate statement of financial performance, statement of changes in net assets, cash flow statement and statement of comparison of budget and actual amounts for the year then ended, as well as notes to the consolidated and separate financial statements, including a summary of significant accounting policies.

2. In our opinion, the consolidated and separate financial statements present fairly, in all material respects, the financial position of the group as at 31 March 2023 and their financial performance and cash flows for the year then ended in accordance with the South African Standards of Generally Recognised Accounting Practice (SA Standards of GRAP) and the requirements of the Public Finance Management Act of South Africa, Act No. 1 of 1999 (PFMA).

Basis for opinion

3. We conducted our audit in accordance with the International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the auditor's responsibilities for the audit of the consolidated and separate financial statements section of our report.

4 We are independent of the group in accordance with the Code of professional conduct for auditors of the Independent Regulatory Board for Auditors (IRBA) and other independence requirements applicable to performing audits of financial statements in South Africa. We have fulfilled our other ethical responsibilities in accordance with the IRBA code and in accordance with other ethical requirements applicable to performing audits in South Africa. The IRBA code is consistent with the corresponding sections of the International Ethics Standards Board for Accountants' International code of ethics for professional accountants (including International Independence Standards).

5. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Emphasis of matters

6. We draw attention to the matters below. Our opinion is not modified in respect of these matters.

Restatement of corresponding figures

7. As disclosed in note 40 to the financial statements, the corresponding figures for 31 March 2022 were restated as a result of an error in the financial statements of the group at, and for the year ended, 31 March 2023.

Material allowace for impairment

8. As disclosed in note 4 to the financial statements, material allowance for impairment of R3 985 290 000 (2022: R4 790 169 000) was recorded against receivables from exchange transactions as a result of irrecoverable debt.

Irregular expenditure

9. As disclosed in note 39 to the financial statements, irregular expenditure of R705 007 000 (2022: R1 290 542 000) was incurred, as proper tender processes were not followed.

Other matter

10. We draw attention to the matters below. Our opinion is not modified in respect of these matter.

National Treasury Instruction Note No. 4 of 2022-23: PFMA Compliance and Reporting Framework

11. On 23 December 2022 National Treasury issued Instruction Note No. 4: PFMA Compliance and Reporting Framework of 2022-23 in terms of section 76(1)(b), (e) and (f), 2(e) and (4)(a) and (c) of the PFMA, which came into effect on 3 January 2023. The PFMA Compliance and Reporting Framework also addresses the disclosure of unauthorised expenditure, irregular expenditure and fruitless and wasteful expenditure. Among the effects of this framework is that irregular and fruitless and wasteful expenditure incurred in previous financial years and not addressed is no longer disclosed in the disclosure notes of the annual financial statements, only the current year and prior year figures are disclosed in note 39 to the financial statements. The movements in respect of irregular expenditure and fruitless and wasteful expenditure are no longer disclosed in the notes to the annual financial statements of National Health Laboratory Service. The disclosure of these movements (e.g. condoned, recoverable, removed, written off, under assessment, under determination and under investigation) are now required to be included as part of other information

Unaudited supplementary information

12. The supplementary information set out on pages 227 to 228 does not form part of the financial statements and is presented as additional information. We have not audited this schedule and, accordingly, we do not express an opinion on it.

Responsibilities of accounting authority for the consolidated and separate financial statements

13. The accounting authority, is responsible for the preparation and fair presentation of the consolidated and separate financial statements in accordance with SA Standards of GRAP and the requirements of the PFMA and for such internal control as the accounting authority determines is necessary to enable the preparation of consolidated and separate financial statements that are free from material misstatement, whether due to fraud or error.

14. In preparing the consolidated and separate financial statements, the accounting authority is responsible for assessing the group's ability to continue as a going concern; disclosing, as applicable, matters relating to going concern; and using the going concern basis of accounting unless the accounting authority either intends to liquidate the group or to cease operations, or has no realistic alternative but to do so.

Responsibilities of the auditor for the audit of the consolidated and separate financial statements

15. Our objectives are to obtain reasonable assurance about whether the consolidated and separate financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated and separate financial statements.

16. A further description of our responsibilities for the audit of the consolidated and separate financial statements is included in the annexure to this auditor's report.

Report on the audit of the annual performance report

17. In accordance with the Public Audit Act 25 of 2004 (PAA) and the general notice issued in terms thereof, we must audit and report on the usefulness and reliability of the reported performance against predetermined objectives for selected programme presented in the annual performance report. The accounting authority is responsible for the preparation of the annual performance report.

18. We selected the following programme presented in the annual performance report for the year ended 31 March 2023 for auditing. We selected a programme that measures the group's performance on its primary mandated functions and that are of significant national, community or public interest.

Programme	Page numbers	Purpose
Programme 1: Laboratory Service	36 to 38	Provide cost-effective and efficient health laboratory services to all public sector healthcare providers, any other government institution within and outside South Africa that may require such services, and any private healthcare provider that requests such services, as mandated by the NHLS Act.

19. We evaluated the reported performance information for the selected programme against the criteria developed from the performance management and reporting framework, as defined in the general notice. When an annual performance report is prepared using these criteria, it provides useful and reliable information and insights to users on the group's planning and delivery on its mandate and objectives.

20. We performed procedures to test whether:

    - the indicators used for planning and reporting on performance can be linked directly to the group's mandate and the achievement of its planned objectives.
    - the indicators are well defined and verifiable to ensure that they are easy to understand and apply consistently and that we can confirm the methods and processes to be used for measuring achievements.
    - the targets can be linked directly to the achievement of the indicators and are specific, time bound and measurable to ensure that it is easy to understand what should be delivered and by when, the required level of performance as well as how performance will be evaluated.
    - the indicators and targets reported on in the annual performance report are the same as what was committed to in the approved initial or revised planning documents.
    - the reported performance information is presented in the annual performance report in the prescribed manner.
    - there are adequate supporting evidence for the achievements reported and for the reasons provided for any over or underachievement of targets.

21. We performed the procedures for the purpose of reporting material findings only; and not to express an assurance opinion.

22. We did not identify any material findings on the reported performance information of Programme 1: Laboratory Service.

Other matter

23. We draw attention to the matter below.

Achievement of planned targets

24. The annual performance report includes information on reported achievements against planned targets and provides explanations for over and underachievements.

25. The group plays a key role in delivering services to South Africans. The annual performance report includes the following service delivery achievements against planned targets

Key service delivery indicators not achieved	Planned target	Reported achievement
Programme 1: Laboratory Service *Targets achieved: 50%* *Budget spent: 93%*		
Percentage of TB GeneXpert tests performed within 40 hours	93%	91%
Percentage of CD4 tests performed within 40 hours	94%	93%
Percentage of cervical smear screening performed within five weeks	91%	88%
Percentage of laboratory tests (urea and electrolytes) performed within eight hours	94%	91%
Develop and implement a POCT plan	Implement the pilot to assess feasibility and cost benefit	Not achieved

26. Reasons for the underachievement of targets are included in the annual performance report on pages 36 to 38.

Report on compliance with legislation

27. In accordance with the PAA and the general notice issued in terms thereof, we must audit and report on compliance with applicable legislation relating to financial matters, financial management and other related matters. The accounting authority is responsible for the group's compliance with legislation.
28. We performed procedures to test compliance with selected requirements in key legislation in accordance with the AGSA findings engagement methodology. This engagement is not an assurance engagement. Accordingly, we do not express an assurance opinion or conclusion.
29. Through an established AGSA process, we selected requirements in key legislation for compliance testing that are relevant to the financial and performance management of the group, clear to allow consistent measurement and evaluation, while also sufficiently detailed and readily available to report in an understandable manner. The selected legislative requirements are included in the annexure to this auditor's report.
30. The material findings on compliance with the selected legislative requirements, presented per compliance theme, are as follows:

Annual financial statements

31. The financial statements submitted for auditing were not prepared in accordance with the prescribed financial reporting framework and supported by full and proper records, as required by section 55(1) (a) and (b) of the PFMA.
32. Material misstatements of non-current assets, current assets, liabilities, other income, expenditure and disclosure items identified by the auditors in the submitted financial statement, were corrected and the supporting records were provided subsequently, resulting in the financial statements receiving an unqualified audit opinion.

Expenditure management

33. Effective and appropriate steps were not taken to prevent irregular expenditure amounting to R705 007 000 as disclosed in note 39 to the financial statements, as required by section 51(1)(b)(ii) of the PFMA. The majority of the irregular expenditure incurred was caused by non-compliance with laws and regulations governing procurement and contract management.

Other information in the annual report

34. The accounting authority is responsible for the other information. The other information comprises the information included in the annual report. The other information does not include the consolidated and separate financial statements, the auditor's report and the selected programme presented in the annual performance report that has been specifically reported on in this auditor's report.
35. Our opinion on the financial statements and our findings on the reported performance information and the report on compliance with legislation do not cover the other information and we do not express an audit opinion or any form of assurance conclusion on it.
36. In connection with our audit, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the consolidated and separate financial statements and the selected programme presented in the annual performance report, or our knowledge obtained in the audit, or otherwise appears to be materially misstated.
37. We did not receive the other information prior to the date of this auditor's report. When we do receive and read this information, if we conclude that there is a material misstatement therein, we are required to communicate the matter to those charged with governance and request that the other information be corrected. If the other information is not corrected, we may have to retract this auditor's report and re-issue an amended report as appropriate. However, if it is corrected, this will not be necessary.

Internal control deficiencies

38. We considered internal control relevant to our audit of the consolidated and separate financial statements, annual performance report and compliance with applicable legislation; however, our objective was not to express any form of assurance on it.
39. The matters reported below are limited to the significant internal control deficiencies that resulted in the material findings on compliance with legislation included in this report.
40. Management did not implement effective controls in certain areas to ensure accurate financial reporting nor did they exercise adequate oversight responsibility over compliance with applicable legislation, which resulted in irregular expenditure and material adjustments made to the consolidated and separate financial statements.

Other reports

41. We draw attention to the following engagements conducted by various parties. These reports did not form part of our opinion on the financial statements or our findings on the reported performance information or compliance with legislation.

42. The Special Investigations Unit is currently investigating allegations of possible procurement and contract management irregularities, at the request of the President of the Republic of South Africa (Proclamation No R.18 of 2019), covering the period 2016 to 2017. The investigations were still in progress at the date of this auditor's report.

43. The Directorate for Priority Crime Investigation ("The Hawks") investigated allegations of the possible procurement and contract management irregularities. The officials involved went through internal investigation and consequence management was followed in dismissing the employees. After investigations, the matter was taken for further prosecution to the magistrate court. These proceedings were still in progress at the date of this auditor's report.

Auditor tenure

44. In terms of the IRBA rule published in Government Gazette No. 39475 dated 4 December 2015, we report that Nexia SAB&T has been the auditor of National Health Laboratory Service for 4 years

Nexia SAB&T

Nexia SAB&T

Niren Coomar Soopal

Director

Registered Auditor

24 August 2023

Annexure to the auditor's report

The annexure includes the following:

- the auditor's responsibility for the audit
- the selected legislative requirements for compliance testing.

Auditor's responsibility for the audit

Professional judgement and professional scepticism

1. As part of an audit in accordance with the ISAs, we exercise professional judgement and maintain professional scepticism throughout our audit of the consolidated and separate financial statements and the procedures performed on reported performance information for the selected programme and on the group's compliance with selected requirements in key legislation.

Financial statements

2. In addition to our responsibility for the audit of the consolidated and separate financial statements as described in this auditor's report, we also:
    - identify and assess the risks of material misstatement of the consolidated and separate financial statements, whether due to fraud or error; design and perform audit procedures responsive to those risks; and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
    - obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the group's internal control.
    - evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made.
    - conclude on the appropriateness of the use of the going concern basis of accounting in the preparation of the financial statements. We also conclude, based on the audit evidence obtained, whether a material uncertainty exists relating to events or conditions that may cast significant doubt on the ability of the National Health Laboratory Service and its subsidiary to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated and separate financial statements about the material uncertainty or, if such disclosures are inadequate, to modify our opinion on the consolidated and separate financial statements. Our conclusions are based on the information available to us at the date of this auditor's report. However, future events or conditions may cause the group to cease operating as a going concern.
    - evaluate the overall presentation, structure and content of the consolidated and separate financial statements, including the disclosures, and determine whether the consolidated and separate financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
    - obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

Communication with those charged with governance

3. We communicate with the accounting authority regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.
4. We also provide the accounting authority with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to have a bearing on our independence and, where applicable, actions taken to eliminate threats or safeguards applied.

Compliance with legislation – selected legislative requirements

1. The selected legislative requirements are as follows:

Legislation	Sections or regulations
Public Finance Management Act 1 of 1999 (PFMA).	Section 51(1)(a)(iv); 51(1)(b)(i); 51(1)(b)(ii); 51(1)(e)(iii) Section 53(4) Section 54(2)(c'); 54(2)(d) Section 55(1)(a); 55(1)(b); 55(1)(c)(i) Section 56(1); 56(2) Section 57(b); Section 66(3)(c'); 66(5)
Treasury Regulations (TR)	Treasury Regulation 8.2.1; 8.2.2 Treasury Regulation 16A 6.1; 16A6.2(a) & (b); 16A6.2(e);16A 6.3(a); 16A 6.3(b); 16A 6.3(c); 16A 6.3(d); 16A 6.3(e); 16A 6.4; 16A 6.5; 16A 6.6; TR 16A.7.1; 16A.7.3; 16A.7.6; 16A.7.7; 16A 8.2(1); 16A 8.2(2); 16A 8.3; 16A 8.3(d); 16A 8.4; 16A9.1 16A9; 16A9.1(b)(ii); 16A9.1(c); 16A 9.1(d); 16A 9.1(e); 16A9.1(f); 16A 9.2; 16A 9.2(a)(ii); TR 16A 9.2(a)(iii) Treasury Regulation 30.1.1; 30.1.3(a); 30.1.3(b); 30.1.3(d); 30.2.1 Treasury Regulation 31.1.2(c') Treasury Regulation 31.2.1; 31.2.5; 31.2.7(a) Treasury Regulation 31.3.3 Treasury Regulation 32.1.1(a); 32.1.1(b); 32.1.1(c') Treasury Regulation 33.1.1; 33.1.3
Public service regulation	Public service regulation 18; 18 (1) and (2);
Prevention and Combating of Corrupt Activities Act No.12 of 2004 (PRECCA)	Section 34(1)
Construction Industry Development Board Act No.38 of 2000 (CIDB)	Section 18(1)
CIDB Regulations	CIDB regulation 17; & 25(7A)
PPPFA	Section 2.1(a); 2.1(b); 2.1(f)
PPR 2017	Paragraph 4.1; 4.2 Paragraph 5.1; 5.3; 5.6; 5.7 Paragraph 6.1; 6.2; 6.3; 6.5; 6.6 Paragraph 7.1; 7.2; 7.3; 7.5; 7.6 Paragraph 8.2; 8.5 Paragraph 9.1; 9.2 Paragraph 11.2 Paragraph 12.1 and 12.2
PPR 2022	Paragraph 4.1; 4.2; 4.3; 4.4 Paragraph 5.1; 5.2; 5.3; 5.4
National Treasury Instruction No.1 of 2015/16	Paragraph 3.1; 4.1; 4.2
NT SCM Instruction Note 03 2021/22	Paragraph 4.3; 4.4; 4.4 (a); 4.4 (c) -(d)
NT SCM Instruction Note 11 2020/21	Paragraph 3.1; 3.4 (b); 3.9
NT SCM Instruction note 2 of 2021/22	Paragraph 3.2.1; 3.2.4(a); 3.3.1
NT instruction note 4 of 2015/16	Paragraph 3.4
Erratum NTI 5 of 202/21	Paragraph 2
NT instruction note 1 of 2021/22	Paragraph 4.1

Statement of Financial Position as at 31 March 2023

	Note(s)	Economic entity		Controlling entity	
		2023 R'000	2022 Restated* R'000	2023 R'000	2022 Restated* R'000
Assets					
Current Assets					
Inventories	3	597 701	837 463	590 197	829 729
Receivables from exchange transactions	4	3 152 029	1 944 597	3 150 940	1 943 985
Receivables from non-exchange transactions	6	167 812	34 867	167 812	34 867
VAT receivable	44	357	126	-	-
Cash and cash equivalents	7	5 139 368	3 483 308	5 130 636	3 472 883
		9 057 267	**6 300 361**	**9 039 585**	**6 281 464**
Non-Current Assets					
Biological assets that form part of an agricultural activity	9	61	66	-	-
Property, plant and equipment	8	1 443 480	1 478 997	1 441 471	1 477 273
Intangible assets	10	11 313	5 128	11 313	5 128
Loans to economic entities	12	7	-	-	-
Deferred tax	18	5 071	2 092	-	-
		1 459 932	**1 486 283**	**1 452 784**	**1 482 401**
Total Assets		**10 517 199**	**7 786 644**	**10 492 369**	**7 763 865**
Liabilities					
Current Liabilities					
Current tax payable	32	2 026	2 026	-	-
Payables from exchange transactions	13	1 219 488	1 474 199	1 212 103	1 468 289
Post retirement medical benefit plan	14	40 985	41 725	40 985	41 725
Unspent conditional grants and receipts	15	129 093	70 866	129 093	70 866
Provisions	16	138 752	303 275	138 752	303 275
Employee benefit obligation	17	337 799	334 793	337 799	334 793
		1 868 143	**2 226 884**	**1 858 732**	**2 218 948**
Non-Current Liabilities					
Loans from economic entities	12	7	-	-	-
Post retirement medical benefit plan	14	836 793	981 571	836 793	981 571
		836 800	**981 571**	**836 793**	**981 571**
Total Liabilities		**2 704 943**	**3 208 455**	**2 695 525**	**3 200 519**
Net Assets		**7 812 256**	**4 578 189**	**7 796 844**	**4 563 346**
Reserves					
Revaluation reserve	19	654 919	654 919	654 919	654 919
Accumulated surplus		7 157 337	3 923 270	7 141 925	3 908 427
Total Net Assets		**7 812 256**	**4 578 189**	**7 796 844**	**4 563 346**

* See Note 40

Statement of Financial Performance for the year ended 31 March 2023

	Note(s)	Economic entity		Controlling entity	
		2023 R'000	2022 Restated* R'000	2023 R'000	2022 Restated* R'000
Revenue	20	11 842 711	12 237 665	11 830 732	12 223 971
Cost of sales	21	(9 152 358)	(10 112 775)	(9 131 844)	(10 094 453)
Gross surplus		**2 690 353**	**2 124 890**	**2 698 888**	**2 129 518**
Other income	22	508 844	400 773	508 844	400 773
Operating expenses	28	(352 868)	(2 643 659)	(358 363)	(2 645 069)
Operating surplus (deficit)	23	**2 846 329**	**(117 996)**	**2 849 369**	**(114 778)**
Interest income	24	384 878	201 404	384 246	200 943
Fair value adjustments	46	-	16	-	-
Interest expense	25	(118)	(8 546)	(118)	(8 546)
Surplus before taxation		**3 231 089**	**74 878**	**3 233 497**	**77 619**
Taxation	26	2 978	2 481	-	-
Surplus for the year		**3 234 067**	**77 359**	**3 233 497**	**77 619**

Statement of Changes in Net Assets for the year ended 31 March 2023

	Revaluation reserve R '000	Accumulated surplus R '000	Total net assets R '000
Economic entity			
Balance at 01 April 2021	**654 919**	**3 845 911**	**4 500 830**
Changes in net assets			
Surplus for the year	-	77 359	77 359
Total changes	-	77 359	77 359
Opening balance as previously reported	654 919	3 922 342	4 577 261
Adjustments			
Correction of errors	-	928	928
Balance at 01 April 2022	**654 919**	**3 923 270**	**4 578 189**
Changes in net assets			
Surplus for the year	-	3 234 067	3 234 067
Total changes	-	3 234 067	3 234 067
Balance at 31 March 2023	**654 919**	**7 157 337**	**7 812 256**
Controlling entity			
Balance at 01 April 2021	**654 919**	**3 830 808**	**4 485 727**
Changes in net assets			
Surplus for the year	-	77 619	77 619
Total changes	-	77 619	77 619
Balance at 01 April 2022	**654 919**	**3 908 428**	**4 563 347**
Changes in net assets			
Surplus for the year	-	3 233 497	3 233 497
Total changes	-	3 233 497	3 233 497
Balance at 31 March 2023	**654 919**	**7 141 925**	**7 796 844**

Cash Flow Statement for the year ended 31 March 2023

	Note(s)	Economic entity		Controlling entity	
		2023 R'000	2022 R'000	2023 R'000	2022 R'000
Cash flows from operating activities					
Receipts					
Sale of goods and services		10 265 413	11 802 086	10 253 939	11 786 354
Grants		772 521	640 057	772 521	640 057
Interest income		382 787	198 896	382 155	198 435
		11 420 721	**12 641 039**	**11 408 615**	**12 624 846**
Payments					
Employee costs		(4 863 668)	(4 659 444)	(4 846 186)	(4 642 987)
Suppliers		(4 809 822)	(7 098 999)	(4 813 577)	(7 100 637)
Interest expense		(118)	(7 535)	(118)	(7 535)
		(9 673 608)	(11 765 978)	(9 659 881)	(11 751 159)
Net cash flows from operating activities	31	**1 747 113**	**875 061**	**1 748 734**	**873 687**
Cash flows from investing activities					
Purchase of property, plant and equipment	8	(89 314)	(318 928)	(89 242)	(318 866)
Purchase of intangible assets	10	(1 739)	(137)	(1 739)	(137)
Net cash flows from investing activities		**(91 053)**	**(319 065)**	**(90 981)**	**(319 003)**
Cash flows from financing activities					
Repayment of other financial liabilities*		-	(4 920)	-	(4 920)
Finance lease payments		-	(19 840)	-	(19 840)
Net cash flows from financing activities		**-**	**(24 760)**	**-**	**(24 760)**
Net increase in cash and cash equivalents		**1 656 060**	**531 236**	**1 657 753**	**529 924**
Cash and cash equivalents at the beginning of the year		3 483 308	2 952 072	3 472 883	2 942 959
Cash and cash equivalents at the end of the year	7	**5 139 368**	**3 483 308**	**5 130 636**	**3 472 883**

*The other financial liabilities was the amount assessed to be an onerous contract in relation to the Financial Lease liability

Statement of Comparison of Budget and Actual Amounts for the year ended 31 March 2023

Budget on Accrual Basis	Approved budget R '000	Final Budget R '000	Actual amounts on comparable basis R '000	Difference between final budget and actual R '000	Reference
Economic entity					
Statement of Financial Performance					
Revenue					
Revenue from exchange transactions					
Sale of goods	28 170	**28 170**	11 979	**(16 191)**	
Rendering of services	10 739 596	**10 739 596**	11 058 211	**318 615**	42.1
Grant income recognised	9 930	**9 930**	20 829	**10 899**	
Fees earned	500	**500**	2 427	**1 927**	
Royalties received	2 000	**2 000**	1 714	**(286)**	
Bad debts recovered	1 500	**1 500**	1 288	**(212)**	
Internal Recoveries	19 987	**19 987**	60 700	**40 713**	
Teaching Income	74 552	**74 552**	94 074	**19 522**	
Sundry income	455	**455**	3 512	**3 057**	
Grant income recognised	-	**-**	286 254	**286 254**	42.2
Other income FCL, land and building	-	**-**	32 738	**32 738**	
Public Contributions and Donations	-	**-**	2 138	**2 138**	
Interest received	218 978	**218 978**	384 878	**165 900**	42.3
Total revenue from exchange transactions	**11 095 668**	**11 095 668**	**11 960 742**	**865 074**	
Revenue from non-exchange transactions					
Transfer revenue					
Government grants & subsidies	920 225	**920 225**	772 521	**(147 704)**	42.4
Total revenue	**12 015 893**	**12 015 893**	**12 733 263**	**717 370**	
Expenditure					
Personnel	(5 182 330)	**(5 182 330)**	(4 559 287)	**623 043**	42.5
Depreciation and amortisation	(317 435)	**(317 435)**	(148 605)	**168 830**	
Finance costs	(1 987)	**(1 987)**	(118)	**1 869**	
Lease rentals on operating lease	(49 040)	**(49 040)**	(50 620)	**(1 580)**	
Debt Impairment	(16 728)	**(16 728)**	880 846	**897 574**	42.6
General Expenses	(6 381 663)	**(6 381 663)**	(5 622 587)	**759 076**	42.7
Total expenditure	**(11 949 183)**	**(11 949 183)**	**(9 500 371)**	**2 448 812**	
Operating surplus	**66 710**	**66 710**	**3 232 892**	**3 166 182**	
Loss on disposal of assets and liabilities	-	**-**	(4 997)	**(4 997)**	
Gain on foreign exchange	-	**-**	3 170	**3 170**	
	-	**-**	**(1 827)**	**(1 827)**	
Surplus before taxation	**66 710**	**66 710**	**3 231 065**	**3 164 355**	
Taxation	**-**	**-**	**2 978**	**2 978**	
Actual Amount on Comparable Basis as Presented in the Budget and Actual Comparative Statement	**66 710**	**66 710**	**3 234 043**	**3 167 333**	

ACCOUNTING POLICIES

1. Presentation of Audited Annual Financial Statements

The annual financial statements have been prepared in accordance with the Standards of Generally Recognised Accounting Practice (GRAP), issued by the Accounting Standards Board in accordance with Section 91(1) of the Public Finance Management Act (Act 1 of 1999).

These annual financial statements have been prepared on an accrual basis of accounting and are in accordance with historical cost convention as the basis of measurement. The Economic Entity is the consolidation of the NHLS (Controlling Entity) and the subsidiary which is the Controlled Entity South African Vaccine Products (SAVP).

A summary of the significant accounting policies, which have been consistently applied in the preparation of these annual financial statements, are disclosed below.

These accounting policies are consistent with the previous period.

1.1 Presentation currency

These annual financial statements are presented in South African Rand, which is the functional currency of the economic entity and all values are rounded to the nearest thousand (R000), except when otherwise indicated.

1.2 Going concern assumption

These annual financial statements have been prepared based on the expectation that the economic entity will continue to operate as a going concern for at least the next 12 months.

1.3 Significant judgements and sources of estimation uncertainty

In preparing the annual financial statements, management is required to make estimates and assumptions that affect the amounts represented in the annual financial statements and related disclosures. Use of available information and the application of judgement is inherent in the formation of estimates. Actual results in the future could differ from these estimates which may be material to the annual financial statements. Estimates include:

Trade and other receivables

The economic entity assesses its trade and other receivables for impairment at the end of each reporting period. In determining whether an impairment loss should be recorded in surplus or deficit, the economic entity makes judgements as to whether there is observable data indicating a measurable decrease in the estimated future cash flows from a financial asset.

The impairment for trade and other receivables is calculated on an individual basis for major customers (others are grouped on a portfolio basis), based on historical loss ratios, adjusted for national and industry-specific economic conditions and other indicators present at the reporting date that correlate with defaults on the customer.

Allowance for slow moving, damaged and obsolete stock

An allowance is raised to write stock down to the lower of cost or net realisable value. Management have made estimates of the selling price and direct cost to sell on certain inventory items. Additional disclosure is included in note 3 Inventories.

1.3 Significant judgements and sources of estimation uncertainty (continued)

Provisions

Provisions were raised and management determined an estimate based on the information available. Additional disclosure of these estimates of provisions are included in note 16 - Provisions.

Useful lives of property, plant and equipment

The economic entity's management determines the estimated useful lives and related depreciation charges for property, plant and equipment. This estimate is based on industry norm and the input from the end users. Management will increase the depreciation charge where useful lives are less than previously estimated useful lives.

Post-retirement benefits

The present value of the post retirement obligation depends on a number of factors that are determined on an actuarial basis using a number of assumptions. The assumptions used in determining the net cost (income) include the discount rate, healthcare cost inflation, expected retirement age and withdrawal rate. Any changes in these assumptions will impact on the carrying amount of post retirement obligations.

An acturial valuation determines the appropriate discount rate at the end of each year. This is the interest rate that should be used to determine the present value of estimated future cash outflows expected to be required to settle the medical obligations. In determining the appropriate discount rate, the economic entity considers the interest rates of high-quality government bond that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating the terms of the related medical liability.

Other key assumptions for medical obligations are based on current market conditions. Additional information is disclosed in Note 14.

1.4 Property, plant and equipment

Property plant and equipment of the controlling entity comprises of buildings, laboratory equipment, lab buildings, plant and machinery,furniture and fixtures, motor vehicles, office equipment, computer equipment, leasehold property, mobile units and buildings – air systems.

Laboratory buildings are improvements made by NHLS to labs in various hospitals that have been capitalised.

Recognition of costs in the carrying amount of an item of property, plant and equipment ceases when the item is in the location and condition necessary for it to be capable of operating in the manner intended by management.

Property, plant and equipment is subsequently carried at cost less accumulated depreciation and any impairment losses except for Land and Buildings plus Sheep and Horses. Buildings is carried at revalued amount being the fair value at the date of revaluation less any subsequent accumulated depreciation and subsequent accumulated impairment losses. Land is not depreciated but carried at revalued amount less accumulated impairment losses.

When an item of property, plant and equipment is revalued, any accumulated depreciation at the

1.4 Property, plant and equipment (continued)

date of the revaluation is eliminated against the gross carrying amount of the asset and the net amount restated to the revalued amount of the asset.

Any increase in an asset's carrying amount, as a result of a revaluation, is credited directly to a revaluation reserve.

Any decrease in an asset's carrying amount, as a result of a revaluation is debited directly to a revaluation reserve to the extent of any credit balance existing in the revaluation reserve in respect of that asset.

The revaluation reserve in net assets related to a specific item of property, plant and equipment is transferred directly to retained accumulated surplus when the asset is derecognised.

Property, plant and equipment are depreciated on the straight line basis over their expected useful lives to their estimated residual value.

The useful lives of items of property, plant and equipment have been assessed as follows:

Item	Depreciation method	*Average useful life
Buildings	Straight line	30 - 52 years
Laboratory equipment	Straight line	4 - 10 years
Plant and machinery	Straight line	5 years
Furniture and fixtures	Straight line	10 - 20 years
Motor vehicles	Straight line	5 years
Office equipment	Straight line	3 - 10 years
Computer equipment	Straight line	3 - 5 years
Mobile units	Straight line	6 - 10 years
Buildings - air systems	Straight line	5 years
Lab buildings	Straight line	5 - 8 years

* The depreciable amount of an asset is allocated on a systematic basis over its useful life.

The NHLS conducts a full assessment of useful lives of all asset classes that have reached the end of the initial pre-defined useful lives. At this point, if an asset is still deemed to be capable of providing future economic benefit to the entity by the custodian of the asset within the entity, then the useful life is adjusted accordingly and depreciated as such going forward.

Each part of an item of property, plant and equipment with a cost that is significant in relation to the total cost of the item is depreciated separately.

The depreciation method used reflects the pattern in which the asset's future economic benefits or service potential are expected to be consumed by the economic entity. The depreciation method applied to an asset is reviewed at least at each reporting date and, if there has been a significant change in the expected pattern of consumption of the future economic benefits or service potential embodied in the asset, the method is changed to reflect the changed pattern. Such a change is accounted for as a change in an accounting estimate.

Items of property, plant and equipment are derecognised when the asset is disposed of or when there are no further economic benefits or service potential expected from the use of the asset.

1.4 Property, plant and equipment (continued)

The gain or loss arising from the derecognition of an item of property, plant and equipment is included in surplus or deficit when the item is derecognised. The gain or loss arising from the derecognition of an item of property, plant and equipment is determined as the difference between the net disposal proceeds, if any, and the carrying amount of the item.

1.5 Biological assets that form part of an agricultural activity

Biological assets constist of sheep and horses that have been donated and are carried at fair value. The sheep blood is used in the preparation of sterile sheep blood bags sold to laboratories. The horses are used to produce antivenom as well as for the preparation of sterile horse blood bags sold to laboratories.

1.6 Intangible assets

Intangible assets for the controlling entity comprise of patents and computer software.

The economic entity assesses the probability of expected future economic benefits or service potential using reasonable and supportable assumptions that represent management's best estimate of the set of economic conditions that will exist over the useful life of the asset.

Intangible assets are carried at cost less any accumulated amortisation and any impairment losses.

The amortisation period and the amortisation method for intangible assets are reviewed at each reporting date. Amortisation is provided to write down the intangible assets, on a straight line basis, to their residual values as follows:

Item	Depreciation method	Average useful life
Acquired Patents	Straight line	20 years
Acquired Computer software	Straight line	5 - 10 years

Intangible assets are derecognised:

- on disposal; or
- when no future economic benefits or service potential are expected from its use or disposal.

The gain or loss arising from the derecognition of intangible assets is included in surplus or deficit when the asset is derecognised.

1.7 Financial instruments

The economic entity has the following types of financial assets (classes and category) as reflected on the face of the statement of financial position or in the notes thereto:

Class	Category
Receivables from exchange transactions	Financial asset measured at amortised cost
Cash and Cash Equivalents	Financial asset measured at amortised cost

1.7 Financial instruments (continued)

The entity has the following types of financial liabilities (classes and category) as reflected on the face of the statement of financial position or in the notes thereto:

Class	Category
Payables from exchange transactions	Financial liability measured at amortised cost

Initial recognition

The economic entity recognises a financial asset or a financial liability in its statement of financial position when the entity becomes a party to the contractual provisions of the instrument.

The economic entity recognises financial assets using trade date accounting. This is the date at which an agreement has been entered, instead of on the date the transaction has been finalised.

Initial measurement of financial assets and financial liabilities

The entity measures a financial asset and financial liability initially at its fair value plus transaction costs that are directly attributable to the acquisition or issue of the financial asset or financial liability.

Subsequent measurement of financial assets and financial liabilities

The economic entity measures all financial assets and financial liabilities after initial recognition using the following categories:

- Financial instruments at amortised cost.

All financial assets measured at amortised cost are subject to an impairment review.

Gains and losses

For financial assets and financial liabilities measured at amortised cost, a gain or loss is recognised in surplus or deficit when the financial asset or financial liability is derecognised or impaired, or through the amortisation process.

Impairment and uncollectability of financial assets

The economic entity assesses at the end of each reporting period whether there is any objective evidence that a financial asset or group of financial assets is impaired.

Financial assets measured at amortised cost:

If there is objective evidence that an impairment loss on financial assets measured at amortised cost has been incurred, the amount of the loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows (excluding future credit losses that have not been incurred) discounted at the financial asset's original effective interest rate. The carrying amount of the asset is reduced using of an allowance account. The amount of the loss is recognised in surplus or deficit.

If, in a subsequent period, the amount of the impairment loss decreases and the decrease can be related objectively to an event occurring after the impairment was recognised, the previously

1.7 Financial instruments (continued)

recognised impairment loss is reversed by adjusting an allowance account. The reversal does not result in a carrying amount of the financial asset that exceeds what the amortised cost would have been had the impairment not been recognised at the date the impairment is reversed. The amount of the reversal is recognised in surplus or deficit.

Derecognition

Financial assets

The economic entity derecognises financial assets using trade date accounting. The economic entity derecognises a financial asset only when:

- the contractual rights to the cash flows from the financial asset expire, are settled or waived;
- the economic entity transfers to another party substantially all of the risks and rewards of ownership of the financial asset; or
- the economic entity, despite having retained some significant risks and rewards of ownership of the financial asset, has transferred control of the asset to another party and the other party has the practical ability to sell the asset in its entirety to an unrelated third party, and is able to exercise that ability unilaterally and without needing to impose additional restrictions on the transfer. In this case, the economic entity:
- derecognise the asset; and
- recognise separately any rights and obligations created or retained in the transfer.

Financial liabilities

The economic entity removes a financial liability (or a part of a financial liability) from its statement of financial position when it is extinguished — i.e. when the obligation specified in the contract is discharged, cancelled, expires or waived.

Receivable from exchange and non-exchange transactions

Trade receivables are initially measured at fair value plus or minus transaction costs and are subsequently measured at amortised cost using the effective interest rate method. Appropriate allowances for debt for estimated irrecoverable amounts are recognised in surplus or deficit when there is objective evidence that the asset is impaired. Significant financial difficulties of the debtor, probability that the debtor will enter bankruptcy or financial reorganisation, and default or delinquency in payments (more than 30 days overdue) are considered indicators that the trade receivable is impaired. The allowance recognised is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows discounted at the effective interest rate computed at initial recognition.

The carrying amount of the asset is reduced through the use of an allowance account, and the amount of the deficit is recognised in surplus or deficit within operating expenses. When a trade receivable is uncollectible, it is written off against the allowance account for trade receivables. Subsequent recoveries of amounts previously written off are credited against operating expenses in surplus or deficit.

Payables from exchange transactions

Trade payables are initially measured at fair value added to or subtracted from transaction costs,

1.7 Financial instruments (continued)

and are subsequently measured at amortised cost, using the effective interest rate method.

Cash and cash equivalents

Cash and cash equivalents comprise cash on hand, demand deposits, and depostis. These are initially measured at fair value and subsequently recognised at amortised cost.

Other financial liabilities

Financial liabilities are measured at initial recognition at fair value and are subsequently measured at amortised cost using the effective interest rate method.

1.8 Tax

Current tax assets and liabilities

Current tax for current and prior periods is, to the extent unpaid, recognised as a liability. If the amount already paid in respect of current and prior periods exceeds the amount due for those periods, the excess is recognised as an asset.

Current tax liabilities (assets) for the current and prior periods are measured at the amount expected to be paid to (recovered from) the tax authorities, using the tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

Deferred tax assets and liabilities

A deferred tax liability is recognised for all taxable temporary differences, except to the extent that the deferred tax liability arises from the initial recognition of an asset or liability in a transaction which at the time of the transaction, affects neither accounting surplus nor taxable profit (tax loss).

A deferred tax asset is recognised for all deductible temporary differences to the extent that it is probable that taxable surplus will be available against which the deductible temporary difference can be utilised. A deferred tax asset is not recognised when it arises from the initial recognition of an asset or liability in a transaction at the time of the transaction, affects neither accounting surplus nor taxable profit (tax loss).

A deferred tax asset is recognised for the carry forward of unused tax losses to the extent that it is probable that future taxable surplus will be available against which the unused tax losses.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply to the period when the asset is realised or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

Tax expenses

Current and deferred taxes are recognised as income or an expense and included in surplus or deficit for the period, except to the extent that the tax arises from:

- a transaction or event which is recognised, in the same or a different period, to net assets; or
- a business combination.

Current tax and deferred taxes are charged or credited to net assets if the tax relates to items that are credited or charged, in the same or a different period, to net assets.

1.9 Inventories

Inventories comprise of raw materials, work in progress, finished goods and consumable stores. These are initially measured at cost.

Subsequently inventories are measured at the lower of cost and net realisable value.

The cost of inventories comprises of all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition.

The cost of inventories is assigned using the weighted average cost formula. The same cost formula is used for all inventories having a similar nature and use to the economic entity.

1.10 Employee benefits

Short-term employee benefits

Short-term employee benefits are employee benefits (other than termination benefits) that are due to be settled within twelve months after the end of the period in which the employees render the related service.

The cost of short-term employee benefits, (those payable within 12 months after the service is rendered, such as paid vacation leave, sick leave and bonuses, are recognised in the period in which the service is rendered.

Liabilities for short-term employee benefits which are unpaid at year-end are measured at the undiscounted amount that the entity expects to pay in exchange for that service and had accumulated at the reporting date. Short-term employee benefits are employee benefits (other than termination benefits) that are due to be settled within twelve months after the end of the period in which the employees render the related service.

Post-employment benefits

NHLS provides post-employment healthcare benefits. Members who joined NHLS before 1 January 2003, and KZN members who joined NHLS before 1 October 2006 are eligible for a subsidy of medical scheme contributions in retirement.

1.11 Provisions and contingencies

The amount of a provision is the best estimate of the expenditure expected to be required to settle the present obligation at the reporting date.

Provisions are reviewed at each reporting date and adjusted to reflect the current best estimate. Provisions are reversed if it is no longer probable that an outflow of resources embodying economic benefits or service potential will be required, to settle the obligation.

A provision is used only for expenditures for which the provision was originally recognised. Provisions are not recognised for future operating write offs.

Contingent assets and contingent liabilities are not recognised. Contingencies are disclosed in note 35.

1.12 Revenue from exchange transactions

NHLS revenue from exchange transactions consists of laboratory tests and sale of anti-venom.

Measurement

Revenue is measured at the fair value of the consideration received or receivable, net of trade discounts.

Sale of goods

Revenue from the sale of goods is recognised when all the following conditions have been satisfied:

- the economic entity has transferred to the purchaser the significant risks and rewards of ownership of the goods;
- the economic entity retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold;
- the amount of revenue can be measured reliably;
- it is probable that the economic benefits or service potential associated with the transaction will flow to the economic entity; and
- the costs incurred or to be incurred in respect of the transaction can be measured reliably.

Recognition

Revenue is recognised when the laboratory test performed have been logged and billed on the TrackCare system.

1.13 Revenue from non-exchange transactions

Revenue from non-exchange transactions consists of grants and transfers from DoH.

Recognition

Revenue from re-imbursive and non-reimbursive grants is recognised when expenses have been incurred and receipted and the debtor raised.

Measurement

Revenue from a non-exchange transaction is measured at the amount of the increase in net assets recognised by the entity.

1.14 Cost of sales

When inventories are sold, the carrying amount of those inventories is recognised as an expense in the period in which the related revenue is recognised. The amount of any write-down of inventories to net replacement costs and all write offs of inventories are recognised as an expense in the period the write-down or loss occurs. The amount of any reversal of any write down of inventories, arising from an increase in net realisable value, is recognised as a reduction in the amount of inventories recognised as an expense in the period in which the reversal occurs.

The related cost of providing services recognised as revenue in the current period is included in cost of sales.

1.15 Interest income

Interest income comprises of interest received from debtors, banks and investments..

1.16 Comparative figures

Where necessary, comparative figures have been reclassified to conform to changes in presentation in the current year.

1.17 Fruitless and wasteful expenditure

All expenditure relating to fruitless and wasteful expenditure is recognised as an expense in the statement of financial performance in the year that the expenditure was incurred. The expenditure is classified in accordance with the nature of the expense, and where recovered, it is subsequently accounted for as revenue in the statement of financial performance.

1.18 Irregular expenditure

Irregular expenditure that was incurred and identified during the current financial and which was condoned before year end and/or before finalisation of the financial statements must also be recorded appropriately in the irregular expenditure register. In such an instance, no further action is also required with the exception for updating the note to the financial statements.

Irregular expenditure that was incurred and identified during the current financial year and for which condonement is being awaited at year end must be recorded in the irregular expenditure register. No further action is required with the exception of updating the note to the financial statements.

Irregular expenditure that was incurred and identified during the current financial year and which was not condoned by the National Treasury or the relevant authority must be recorded appropriately in the irregular expenditure register. If liability for the irregular expenditure can be attributed to a person, a debt account must be created if such a person is liable in law. Immediate steps must thereafter be taken to recover the amount from the person concerned. If recovery is not possible, the accounting officer or Accounting Authority may write off the amount as debt impairment and disclose such in the relevant note to the financial statements. The irregular expenditure register must also be updated accordingly. If the irregular expenditure has not been condoned and no person is liable in law, the expenditure related thereto must remain against the relevant programme/ expenditure item, be disclosed as such in the note to the financial statements and updated accordingly in the irregular expenditure register.

1.19 Segment information

Reportable segments comprise of Laboratory services, NIOH, NICD, FCL and SAVP. They are defined geographically as well as per activities of the economic entity.

Measurement

The amount of each segment item reported is the measure reported to management for the purposes of making decisions about allocating resources to the segment and assessing its performance. Adjustments and eliminations made in preparing the entity's financial statements and allocations of revenues and expenses are included in determining reported segment surplus or deficit only if they are included in the measure of the segment's surplus or deficit that is used by management. Similarly, only those assets and liabilities that are included in the measures of the segment's assets

1.19 Segment information (continued)

and segment's liabilities that are used by management are reported for that segment. If amounts are allocated to reported segment surplus or deficit, assets or liabilities, those amounts are allocated on a reasonable basis.

If management uses only one measure of a segment's surplus or deficit, the segment's assets or the segment's liabilities in assessing segment performance and deciding how to allocate resources, segment surplus or deficit, assets and liabilities are reported in terms of that measure. If management uses more than one measure of a segment's surplus or deficit, the segment's assets or the segment's liabilities, the reported measures are those that management believes are determined in accordance with the measurement principles most consistent with those used in measuring the corresponding amounts in the entity's financial statements.

1.20 Budget information

The approved budget is prepared on a accrual basis and presented by functional classification. The budget for the economic entity includes all the entities approved budgets under its control.

NOTES TO THE AUDITED ANNUAL FINANCIAL STATEMENTS

2. New standards and interpretations

2.1 Standards and interpretations issued, but not yet effective

The economic entity has not applied the following standards and interpretations, which have been published and are mandatory for the economic entity's accounting periods beginning on or after 01 April 2023 or later periods:

• GRAP 25 (as revised): Employee Benefits	1 April 2023	Unlikely there will be a material impact
• GRAP 104 (as revised): Financial Instruments	01 April 2025	Unlikely there will be a material impact
• iGRAP 21: The Effect of Past Decisions on Materiality	1 April 2023	Unlikely there will be a material impact
• GRAP 2020: Improvements to the standards of GRAP 2020	1 April 2023	Unlikely there will be a material impact
• GRAP 1 (amended): Presentation of Financial Statements	1 April 2023	Unlikely there will be a material impact

3. Inventories

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Raw materials, components	118	56	-	-
Work in progress	7 226	7 577	-	-
Finished goods	166	113	-	-
Consumable stores	590 191	829 717	590 197	829 729
	597 701	**837 463**	**590 197**	**829 729**

As at 31 March 2023 the NHLS inventory balance amounts to R598 million (2022: R837 million). The reduction in the balance is mostly due the use of inventory items in relation to Covid-19. During the financial year ended 31 March 2023 the NHLS expensed inventory to the value R3.8 billion (2022: R4.8 billion). The main inventory expense is driven by laboratory goods. An amount of R14 million (2022: R6,4 million) was written off during the financial year ended 31 March 2023, the write down mainly relates to obsolete and slow moving stock. There was also a increase in the adjustment (write down) in relation of valuing Covid-19 inventory items to net replacement value R157.6 million (2022: R5,4 million).

4. Receivables from exchange transactions

Trade debtors	6 980 010	6 574 640	6 978 362	6 573 624
Less: Allowance for impairment on trade debtors	(3 985 290)	(4 790 169)	(3 984 704)	(4 789 739)
	2 994 720	1 784 471	2 993 658	1 783 885
Interest receivable	7 039	4 948	7 039	4 948
Other receivables	3 675	3 913	3 648	3 887
Teaching Services*	146 595	151 265	146 595	151 265
	3 152 029	**1 944 597**	**3 150 940**	**1 943 985**

Teaching Services are in respect of revenue generated for teaching activities provided by the NHLS employees to the different institutions of higher learning.

4. Receivables from exchange transactions (continued)

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Financial instruments				
Trade debtors	6 980 010	6 574 640	6 978 362	6 573 624
Allowance for impairment on trade debtors	(3 985 290)	(4 790 169)	(3 984 704)	(4 789 739)
Interest receivable	7 039	4 948	7 039	4 948
Teaching Services*	146 595	151 265	146 595	151 265
	3 148 354	**1 940 684**	**3 147 292**	**1 940 098**
Non Financial instruments	3 675	3 913	3 648	3 887
Other receivables	3 675	3 913	3 648	3 887
	3 152 029	**1 944 597**	**3 150 940**	**1 943 985**

Outstanding debt from KwaZulu-Natal Department of Health

Included in trade debtors above is an amount of R3.131bn (2022: R2.812bn) owed by the KwaZulu-Natal Department of Health (KZN (DOH) of which R2.592bn (2022: R2.574bn) has been impaired. An external audit was conducted into the amount disputed by the KZN DOH. The audit concluded that an amount of R1.8bn is owed by KZN DOH to the entity, however the parties involved have neither agreed nor acknowledged the outcome of audit.

Outstanding debt from Gauteng Department of Health

The balance in trade debtors balance above includes an amount owed by Gauteng Department of Health amounting to R1.414bn (2022: R1.394m) of which R854m (2022: R741m) has been impaired.

Outstanding debt from Eastern Cape Department of Health

Included in trade debtors balance above is also an amount owed by Eastern Cape Department of Health amounting to R656m (2022:R567m) of which R401m (2022:R296m) has been impaired.

Outstanding debt from Northern Cape Department of Health

The balance in trade debtors above also includes an amount owed by Northern Cape Department of Health amounting to R424m (2022: R354m) of which R368m (2022: R354m) has been impaired.

Receivable from exchange transactions impaired

As at 31 March 2023, receivables from exchange transactions of R4.0 bn (2022 R4.8 bn): were impaired and provided for.

Reconciliation of provision for impairment of receivables from exchange transactions

Opening balance	4 790 169	3 699 542	4 789 739	3 699 198
Provision for impairment	(804 600)	1 092 766	(804 756)	1 092 680
Amounts written off as uncollectible	(279)	(2 139)	(279)	(2 139)
	3 985 290	**4 790 169**	**3 984 704**	**4 789 739**

5. Debt impairment

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Contributions to debt impairment provision	(880 846)	1 227 658	(871 945)	1 231 130

6. Receivables from non-exchange transactions

Receivables from non-exchange transactions - gross	335 308	278 330	335 308	278 330
Allowance for impairment receivables from non exchange transactions	(167 496)	(243 463)	(167 496)	(243 463)
	167 812	**34 867**	**167 812**	**34 867**
Reconciliation of provision for impairment of Receivables from non-exchange transactions				
Opening balance	243 463	106 433	243 463	106 433
Provison for impairment	(75 967)	137 030	(75 967)	137 030
	167 496	**243 463**	**167 496**	**243 463**

7. Cash and cash equivalents

Cash and cash equivalents consist of:				
Cash on hand	268	227	241	207
Bank balances	65 529	20 213	65 293	19 823
Short-term deposits	5 073 571	3 462 868	5 065 102	3 452 853
	5 139 368	**3 483 308**	**5 130 636**	**3 472 883**
Cash and cash equivalents held by the entity that are not available for use by the economic entity	508 592	503 126	508 592	503 126

The interest earned on cash at bank and short term deposits ranged from 6.05% to 6.83% (2022: 3.95% to 4.82%) and these deposits had an average maturity of 30 days.

8. Property, plant and equipment

Figures in Rand thousand	2023			2022		
Economic entity	Cost / Valuation	Accumulated depreciation and accumulated impairment	Carrying value	Cost / Valuation	Accumulated depreciation and accumulated impairment	Carrying value
Buildings	688 684	(107 820)	580 864	680 693	(86 519)	594 174
Buildings - air systems	491	(249)	242	250	(233)	17
Computer equipment	462 281	(247 660)	214 621	429 560	(201 644)	227 916
Furniture and fixtures	13 631	(3 720)	9 911	11 605	(2 987)	8 618
Laboratory equipment	1 194 593	(753 034)	441 559	1 025 781	(573 278)	452 503
Land	109 769	-	109 769	95 552	-	95 552
Lab Buildings	11 460	970	12 430	17 684	(1 847)	15 837
Mobile units	44 973	(25 819)	19 154	41 032	(25 241)	15 791
Motor vehicles	93 645	(58 566)	35 079	94 019	(43 025)	50 994
Office Equipment	45 346	(29 040)	16 306	39 922	(25 431)	14 491
Plant and machinery	9 237	(5 692)	3 545	7 091	(3 987)	3 104
Total	**2 674 110**	**(1 230 630)**	**1 443 480**	**2 443 189**	**(964 192)**	**1 478 997**

	2023			2022		
Controlling entit	Cost / Valuation	Accumulated depreciation and accumulated impairment	Carrying value	Cost / Valuation	Accumulated depreciation and accumulated impairment	Carrying value
Buildings	688 684	(107 820)	580 864	680 693	(86 519)	594 174
Buildings - air systems	491	(249)	242	250	(233)	17
Computer equipment	462 097	(247 620)	214 477	429 315	(201 482)	227 833
Furniture and fixtures	13 516	(3 654)	9 862	11 490	(2 926)	8 564
Laboratory equipment	1 190 154	(750 395)	439 759	1 021 389	(570 460)	450 929
Land	109 769	-	109 769	95 552	-	95 552
Motor vehicles	93 645	(58 566)	35 079	94 019	(43 025)	50 994
Lab buildings	11 460	970	12 430	17 684	(1 847)	15 837
Mobile units	44 973	(25 819)	19 154	41 032	(25 241)	15 791
Office equipment	45 293	(29 003)	16 290	39 869	(25 391)	14 478
Plant and machinery	9 237	(5 692)	3 545	7 091	(3 987)	3 104
Total	**2 669 319**	**(1 227 848)**	**1 441 471**	**2 438 384**	**(961 111)**	**1 477 273**

8. Property, plant and equipment

Reconciliation of property, plant and equipment - Economic entity - 2023

Figures in Rand thousand

	Opening balance	Additions	Assets aquired on taken on	Disposals	Transfers	Reclassification	Land transfers	Donations received	Change in Accounting Estimate	Depreciation	Total
Buildings	594 174	677	-	-	-	7 314	-	-	-	(21 301)	580 864
Buildings - air systems	17	242	-	-	-	-	-	-	-	(17)	242
Computer equipment	227 916	32 718	233	(51)	29	41	-	386	22 386	(69 037)	214 621
Furniture and fixtures	8 618	1 444	305	(48)	-	28	-	-	209	(645)	9 911
Laboratory equipment	452 503	42 474	17 108	(4 325)	-	(48)	-	-	52 382	(118 535)	441 559
Land	95 552	-	-	-	-	-	14 217	-	-	-	109 769
Lab Buildings	15 837	2 859	-	(334)	-	(7 314)	-	-	1 997	(615)	12 430
Mobile units	15 791	4 312	-	-	-	-	-	-	1 304	(2 253)	19 154
Motor vehicles	50 994	-	-	(139)	-	-	-	-	993	(16 769)	35 079
Office Equipment	14 491	3 785	848	(277)	-	(21)	-	410	2 137	(5 067)	16 306
Plant and machinery	3 104	803	26	(7)	-	-	-	-	579	(960)	3 545
	1 478 997	**89 314**	**18 520**	**(5 181)**	**29**	**-**	**14 217**	**796**	**81 987**	**(235 199)**	**1 443 480**

Reconciliation of property, plant and equipment - Economic entity - 2022

	Opening balance	Additions	Donations received	Disposals	Reclassification	Depreciation	Total
Buildings	615 395	-	-	-	-	(21 221)	594 174
Buildings - air systems	10	-	-	-	-	7	17
Computer equipment	90 493	219 380	-	(51)	37	(81 943)	227 916
Furniture and fixtures	8 405	1 040	-	(17)	(115)	(695)	8 618
Laboratory equipment	508 926	77 669	31 189	(467)	78	(164 892)	452 503
Land	95 552	-	-	-	-	-	95 552
Lab Buildings	15 659	4 261	-	(155)	-	(3 928)	15 837
Mobile units	13 603	4 735	-	-	-	(2 547)	15 791
Motor vehicles	83 994	-	-	(3 502)	-	(29 498)	50 994
Office Equipment	17 625	3 393	-	(77)	-	(6 450)	14 491
Plant and machinery	2 527	1 688	-	-	-	(1 111)	3 104
	1 452 189	**312 166**	**31 189**	**(4 269)**	**-**	**(312 278)**	**1 478 997**

Reconciliation of property, plant and equipment - Controlling entity - 2023

Figures in Rand thousand

	Opening balance	Additions	Assets aquired on taken on	Disposals	Transfers	Reclassification	Land transfers	Donations received	Change in Accounting Estimate	Depreciation	Total
Buildings	594 174	677	-	-	7 314	-	-	-	(21 301)	580 864	580 864
Buildings - air systems	17	242	-	-	-	-	-	-	(17)	242	242
Computer equipment	227 833	32 696	233	(51)	41	-	386	22 367	(69 028)	214 477	214 621
Furniture and fixtures	8 564	1 444	305	(49)	28	-	-	209	(639)	9 862	9 911
Laboratory equipment	450 929	42 424	17 108	(4 325)	(48)	-	-	52 036	(118 365)	439 759	441 559
Land	95 552	-	-	-	-	14 217	-	-	-	109 769	109 769
Lab Buildings	15 837	2 859	-	(334)	(7 314)	-	-	1 997	(615)	12 430	12 430
Mobile units	15 791	4 312	-	-	-	-	-	1 304	(2 253)	19 154	19 154
Motor vehicles	50 994	-	-	(139)	-	-	-	993	(16 769)	35 079	35 079
Office Equipment	14 478	3 785	848	(277)	(21)	-	410	2 134	(5 067)	16 290	16 306
Plant and machinery	3 104	803	26	(7)	-	-	-	579	(960)	3 545	3 545
	1 477 273	**89 242**	**18 520**	**(5 182)**	**-**	**14 217**	**796**	**81 619**	**(235 014)**	**1 441 471**	**1 443 480**

Reconciliation of property, plant and equipment - Controlling entity - 2022

	Opening balance	Additions	Donations received	Disposals	Reclassification	Depreciation	Total
Buildings	615 395	-	-	-	-	(21 221)	594 174
Buildings - air systems	10	-	-	-	-	7	17
Computer equipment	90 432	219 380	-	(51)	37	(81 965)	227 833
Furniture and fixtures	8 343	993	-	(17)	(115)	(640)	8 564
Laboratory equipment	507 150	77 669	31 189	(467)	78	(164 690)	450 929
Land	95 552	-	-	-	-	-	95 552
Lab Buildings	15 659	4 261	-	(155)	-	(3 928)	15 837
Mobile units	13 603	4 736	-	-	-	(2 548)	15 791
Motor vehicles	83 994	-	-	(3 502)	-	(29 498)	50 994
Office Equipment	17 616	3 393	-	(77)	-	(6 454)	14 478
Plant and machinery	2 527	1 688	-	-	-	(1 111)	3 104
	1 450 281	**312 120**	**31 189**	**(4 269)**	**-**	**(312 048)**	**1 477 273**

8. Property, plant and equipment (continued)

*Reclassification represents corrections made in current year of the following categories:

- owned buildings incorrectly classifiied as lab buildings,
- computer equipment incorrectly classified as lab equipment,
- furniture and fixtures incorrectly classified as office equipment and lab equipment.

Carrying value of assets pledged as security:

Revaluations

The effective date of the revaluations was 31 March 2018. Revaluations were performed by independent valuers, T. Mokhulwa (Professional Associated Valuer) abd R.A Rakau (Professional Valuer), of Black Dot Property Consultants (Pty) Ltd. Mokhuwa and Rakau are not connected to the economic entity.

Land and buildings are re-valued independently every five years.

The valuation was performed using the Depreciated Replacement Method, and the following assumptions were used:

- **Effective Age:**- Effective age is the age indicated by the condition and utility of a building and was based on a valuer's judgement and interpretation of market perceptions. Actual age is the number of years that have elapsed since building construction was completed. Actual age is the inital element analysed in the estimation of effective age.
- **Remaining Economic Life:** This is the estimated period over which existing improvements / buildings are expected to continue to contribute to property value. The remaining economic life extends from the date of the opinion of value to the end of the improvement's economic life.
- **Depreciation Percentages:**- The improvements were assumed to be depreciated by an amount regarded as applicable to that improvement, based on current condition and expected remaining lifespan. Where buildings / improvements are well maintained, the buildings were basically regarded to have a 50 year lifespan.

These assumptions were based on current market conditions.

Had land and buildings been carried at their historical cost, the carrying amounts would have been:

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Category				
Land	3 208	3 208	3 208	3 208
Buildings	105 938	110 829	105 938	110 829
	109 146	**114 037**	**109 146**	**114 037**

Expenditure incurred to repair and maintain property, plant and equipment

Expenditure incurred to repair and maintain property, plant and equipment included in Statement of Financial Performance

	Economic entity		Controlling entity	
	2023 R'000	2022 Restated* R'000	2023 R'000	2022 Restated* R'000
Office Equipment	2 192	2 286	2 189	2 286
Buildings	42 912	35 058	42 686	35 038
Motor vehicles	417	662	417	662
Laboratory equipment	58 810	58 147	58 129	57 176
	104 331	**96 153**	**103 421**	**95 162**

9. Biological assets that form part of an agricultural activity

	Economic entity		Controlling entity	
Economic entity	Fair value	Carrying value	Fair value	Carrying value
Sheep	56	56	56	56
Horses	5	5	10	10
Total	**61**	**61**	**66**	**66**

Reconciliation of biological assets that form part of an agricultural activity - Economic entity - 2023

	Opening balance	Decreases due to death	Total
Sheep	56	(2)	54
Horses	10	(3)	7
	66	**(5)**	**61**

Reconciliation of biological assets that form part of an agricultural activity - Economic entity - 2022

	Opening balance	Decreases due to death	Total
Sheep	40	16	56
Horses	10	-	10
	50	16	66

As at 31 March 2023, the economic entity owns 42 sheep (2022: 50) and 36 horses (2022: 59). The sheep blood is used in the preparation of sterile sheep blood bags sold to laboratories. The horses are used to produce antivenom as well as for the preparation of sterile horse blood bags sold to laboratories

10. Intangible assets

Economic entity	2023			2022		
	Cost	Accumulated amortisation and accumulated impairment	Carrying value	Cost	Accumulated amortisation and accumulated impairment	Carrying value
Computer software licenses	11 475	(177)	11 298	9 737	(4 627)	5 110
Patents	60	(45)	15	60	(42)	18
Total	**11 535**	**(222)**	**11 313**	**9 797**	**(4 669)**	**5 128**

Controlling entity	2023			2022		
	Cost	Accumulated amortisation and accumulated impairment	Carrying value	Cost	Accumulated amortisation and accumulated impairment	Carrying value
Computer software licenses	11 475	(177)	11 298	9 737	(4 627)	5 110
Patents	60	(45)	15	60	(42)	18
Total	**11 535**	**(222)**	**11 313**	**9 797**	**(4 669)**	**5 128**

Reconciliation of intangible assets - Economic entity - 2023

	Opening balance	Additions	Transfers	Change in Accounting Estimate	Amortisation	Total
Computer software licenses	5 110	1 739	-	5 952	(1 503)	11 298
Patents	18	-	-	-	(3)	15
	5 128	**1 739**	**-**	**5 952**	**(1 506)**	**11 313**

Reconciliation of intangible assets - Economic entity - 2022

	Opening balance	Additions	Transfers	Change in Accounting Estimate	Amortisation	Total
Computer software licenses	6 485	137	(7)	(1 505)	(1 503)	5 110
Patents	21	-	-	(3)	18	15
	6 506	**137**	**(7)**	**(1 508)**	**5 128**	**11 313**

Reconciliation of intangible assets - Controlling entity - 2023

	Opening balance	Additions	Transfers	Change in Accounting Estimate	Amortisation	Total
Computer software licenses	5 110	1 739	-	5 952	(1 503)	11 298
Patents	18	-	-	-	(3)	15
	5 128	**1 739**	**-**	**5 952**	**(1 506)**	**11 313**

10. Intangible assets (continued)

Reconciliation of intangible assets - Controlling entity - 2022

	Opening balance	Additions	Transfers	Change in Accounting Estimate	Amortisation	Total
Computer software licenses	6 485	137	(7)	(1 505)	5 110	11 298
Patents	21	-	-	(3)	18	15
	6 506	**137**	**(7)**	**(1 508)**	**5 128**	**11 313**

11. Investment in controlled entity

Name of company	Held by	% holding 2023	% holding 2022	Carrying amount 2023	Carrying amount 2022
South African Vaccine Producers (Pty)	NHLS	100,00 %	100,00 %	-	-

SAVP is a wholly owned subsidiary by the NHLS, the address being 1 Modderfontein Road, Sandringham.

The interest of the controlling entity in the losses of its subsidiary is as follows:

SAVP subsidiary		
Total loss before income tax	(4 512)	(5 053)

There were no acquisitions or divestures during the year ended 31 March 2023.

12. Loans to economic entity

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
South African Vaccine Producers (Pty) Ltd	-	-	43 773	34 717
	-	-	43 773	43 773
Impairment of loans to controlled entity	-	-	(43 773)	(34 717)
	-	**-**	**-**	**-**

The Controlling entity has subordinated it's rights to claim payments of debts of R43,773m (2022: R34,717m) owing to it by South African Vaccine Producers (Pty) Limited until the assets of the subsidiary, fairly valued, exceed its liabilities. The report of the Accounting Authority contains further details of the subsidiary.

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Non-current assets	7	-	-	-
Non-current liabilities	(7)	-	-	-
	-	**-**	**-**	**-**

13. Payables from exchange transactions

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Trade payables *	154 481	372 108	154 344	371 700
Income received in advance - contract in progress	6 896	4 478	-	-
Debtors with credit balances	240 585	358 183	240 585	358 183
Accrued expenses	784 446	710 480	784 094	709 456
Other payables **	33 080	28 950	33 080	28 950
	1 219 488	**1 474 199**	**1 212 103**	**1 468 289**

* Trade payables are non-interest bearing and are normally settled on 30-day payment terms.
** Other payables are made up of employee cost related liabilities and other sundry payables.

	Economic entity		Controlling entity	
Financial instruments	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Trade payables	154 481	372 108	154 344	371 700
Payments received in advanced - contract in process	6 896	4 478	-	-
Debtors with credit balances	240 585	358 183	240 585	358 183
Accrued expense	784 446	710 480	784 094	709 456
	1 186 408	**1 445 249**	**1 179 023**	**1 439 339**
Non Financial instrumen				
Other payables	33 080	28 950	33 080	28 950

14. Post retirement medical benefit plan

Post retirement medical aid plan

NHLS provides post-employment healthcare benefits. Members who joined NHLS before 1 January 2003, and KZN members who joined NHLS before 1 October 2006 are eligible for a subsidy of medical scheme contributions in retirement.

The amounts recognised in the statement of financial position are as follows:

	Economic entity		Controlling entity	
Carrying value	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Present value of the defined benefit obligation-wholly unfunded	(877 778)	(1 023 296)	(877 778)	(1 023 296)
Non-current liabilities	(836 793)	(981 571)	(836 793)	**(981 571)**
Current liabilities	(40 985)	(41 725)	(40 985)	(41 725)
	(877 778)	**(1 023 296)**	**(877 778)**	**(1 023 296)**

14. Post retirement medical benefit plan (continued)

Changes in the present value of the defined benefit obligation are as follows:

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Opening balance	1 023 299	919 388	1 023 299	919 388
Contributions by plan participants	(44 010)	(39 706)	(44 010)	(39 706)
Effect of Acquisition	24 242	-	24 242	-
Net expense (income) recognised in the statement of financial performance	(125 753)	143 617	(125 753)	143 617
	877 778	**1 023 299**	**877 778**	**1 023 299**

Net expense recognised in the statement of financial performance

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Current service cost	19 447	17 119	19 447	17 119
Interest cost	121 963	114 195	121 963	114 195
Actuarial (gains) losses	(267 163)	12 303	(267 163)	12 303
	(125 753)	**143 617**	**(125 753)**	**143 617**

Calculation of actuarial gains and losses

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Change in Modelling Methodology	-	(2 487)	-	(2 487)
Change in Subsidy Valued	(3 402)	-	(3 402)	-
Change in Real Discount Rate	169 376	(50 212)	169 376	(50 212)
Lower than expected healthcare cost inflation including changes in benefit options	3 192	19 010	3 192	19 010
Lower than Expected Rand Cap Inflation	8 484	-	8 484	-
Unexpected changes in membership	89 513	21 386	89 513	21 386
	267 163	**(12 303)**	**267 163**	**(12 303)**

Key assumptions used

For practical reasons, the economic assumptions are determined before the valuation date. The economic assumptions used in this valuation are based on market information as at end February 2023. The economic assumptions have been set based on the duration of the liability as at 31 March 2022. At that date, the duration of the liablity was 15.1 (2022:15.0) years; and therefore a duration of 15.1 (2022: 15.0) years was used to set the economic assumptions. Assumptions used at the reporting date:

Discount rates used	13,10 %	11,90 %	13,10 %	11,90 %
Expected rate of return on assets	7,40 %	7,10 %	7,40 %	7,10 %
Expected rate of return on reimbursement rights	8,40 %	8,60 %	8,40 %	8,60 %
Expected increase in healthcare costs	8,90 %	9,10 %	8,90 %	9,10 %

14. Post retirement medical benefit plan (continued)

Discount rate:

The discount rate of 13.1% (2022:11.9%) per annum is primarily determined by reference to current market yields on government bonds.

Consumer Price Index Inflation:

While not used in the valuation, the actuaries have assumed the underlying future rate of consumer price index inflation (CPI inflation) to be 7.4% (2022: 7.1%) per annum. This assumption has been based on the relationship between the nominal bond curve and the real bond yield.

Income at Retirement:

Income at retirement is relevant to the extent that the contribution tables are based on income. The actuaries have assumed at that an individual member's income would increase by 8.4% (2022:8.6%) per annum, based on the underlying assumption that individual remuneration increases including merit and promotional increases would exceed CPI inflation by an average of 1.5% per annum over the long term. The actuarial assumption is that income at retirement would be 65% of final salary.

Healthcare cost inflation:

The current contribution tables of the medical schemes would continue to apply in the future, with allowances of inflationary increases of 8.9% per annum compared to 9.1% per annum used in the previous valuation. This is a change from CPI+2.0% used previously to CPI+1.5% and follows from the reduction in the future healthcare cost inflation based on historical indices.

Sensitivity analysis

Assumed healthcare cost trend rates have a significant effect on the amounts recognised in surplus or deficit. A one percentage point change in assumed healthcare cost trends rates would have the following effects:

	One percentage point increase	One percentage point decrease	One percentage point increase	One percentage point decrease
Effect on the aggregate of the service cost and interest cost	18 538	(15 314)	21 524	(19 505)
Effect on defined benefit obligation	145 859	(112 007)	147 654	(119 513)

Amounts for the current and previous four years are as follows:

	2023 R '000	2022 R '000	2021 R '000	2020 R '000	2019 R '000
Defined benefit obligation	877 778	1 023 299	919 388	953 397	988 415

Defined contribution plan

It is the policy of the economic entity to provide retirement benefits to all its employees. A number of defined contribution provident funds, all of which are subject to the Pensions Funds Act exist for this purpose.

The economic entity is under no obligation to cover any unfunded benefits.

15. Unspent conditional grants and receipts

Unspent conditional grants and receipts comprises of:

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Unspent conditional grants and receipts				
Research grants	129 093	70 866	129 093	70 866
Reconciliation of unspent grants				
Balance at the beginning of the year	70 866	118 740	70 866	118 740
Additions during the year	86 242	39 320	86 242	39 320
Income recognition during the year	(28 015)	(87 194)	(28 015)	(87 194)
	129 093	**70 866**	**129 093**	**70 866**

16. Provisions

Reconciliation of provisions - Economic entity - 2023

	Opening balance	Additions	Utilised during the year	Reversed during the year	Total
DoH utility charges provision [1]	139 604	65 562	(5 718)	(60 696)	138 752
Salaries provision [2]	163 671	-	-	(163 671)	-
	303 275	**65 562**	**(5 718)**	**(224 367)**	**138 752**

Reconciliation of provisions - Economic entity - 2022

	Opening balance	Additions	Utilised during the year	Reversed during the year	Total
DoH utility charges provision [1]	192 241	77 383	(70 900)	(59 120)	139 604
Salaries provision [2]	163 671	-	-	-	163 671
Student bursary provision [3]	65	-	-	(65)	-
	355 977	**77 383**	**(70 900)**	**(59 185)**	**303 275**

Reconciliation of provisions - Controlling entity - 2023

	Opening balance	Additions	Utilised during the year	Reversed during the year	Total
DoH utility charges provision [1]	139 604	65 562	(5 718)	(60 696)	138 752
Salaries provision [2]	163 671	-	-	(163 671)	-
	303 275	**65 562**	**(5 718)**	**(224 367)**	**138 752**

Reconciliation of provisions - Controlling entity - 2022

	Opening balance	Additions	Utilised during the year	Reversed during the year	Total
DoH utility charges provision [1]	192 241	77 383	(70 900)	(59 120)	139 604
Salaries provision [2]	163 671	-	-	-	163 671
Student bursary provision [3]	65	-	-	(65)	-
	355 977	**77 383**	**(70 900)**	**(59 185)**	**303 275**

16. Provisions (continued)

[1] The DoH utility charges provision relates to utilities and maintenance fees owing to the DoH for various provincial hospital facilities around the country. A reclassification of R71 million from provisions to accruals has been processed. During the 2020/21, financial year the NHLS developed and implement a new utilities policy that was approved by all the relevant structures. The policy resulted in the reversal of all the utility provisions and accruals older than 3 years as at the 31 March 2021. The policy also defined and provided guidelines for the amounts to be disclosed as the utilities accrual as well as the utilities provision in the Annual Financial Statements.

[2] The economic entity has an agreement with Walter Sisulu University wherein the NHLS is required to pay part of the salaries for pathological academic staff that were joint appointments between the NHLS and the University. The amount has been estimated in the absence of actual figures and invoices.

[3] Student bursary provisions relate to contractual commitments made by the economic entity by year end to fund student education for which the amount cannot yet be determined. The economic entity makes a provision based of the number of students awarded bursaries and amounts estimated using historical experiences.

17. Employee benefit obligation

Reconciliation of employee benefit obligation - 2023

	Opening balance	Additions	Utilised during the year	Total
Leave pay obligation	334 261	69 829	(66 983)	337 107
Bonus obligation	532	987	(827)	692
	334 793	**70 816**	**(67 810)**	**337 799**

The leave pay obligation relates to vesting leave pay to which employees may become entitled upon leaving the employment of the economic entity. The obligation arises as employees render a service that increases their entitlement to future compensated leave and is calculated based on an employee's total cost of employment. The obligation is utilised when employees become entitled to and are paid for the accumulated leave pay or utilise compensated leave due to them.

The bonus obligation is made up of the following:

Certain employees in bands D and above who are on the cost to company package and elect to structure part of their package as a 13th cheque. The obligation is utilised when employees become entitled to and are paid for their services to the entity. The bonus payable is determined by applying a specific formula based on the employees' total cost to company; and

A 13th cheque for employees in bands A to C which is payable in December each year

Reconciliation of employee benefit obligation - 2022

	Opening balance	Additions	Utilised during the year	Total
Leave pay obligation	318 199	74 445	(58 383)	334 261
Bonus obligation	578	2 060	(2 106)	532
	318 777	**76 505**	**(60 489)**	**334 793**

18. Deferred tax

	Economic entity		Controlling entity	
Deferred tax asset	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Deferred tax asset	5 071	2 092	-	-

The tax loss was not considered in the computation of the prior period deferred tax. Management has assessed and is satisfied with the probability of sufficient future taxable income against which the tax loss will be offset.

Reconciliation of deferred tax liability

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
At beginning of year	2 092	(389)	-	-
Adjustment due to rate change	13	-	-	-
Temporary difference movement on property, plant and equipment	(116)	30	-	-
Temporary difference on provisions	2	-	-	-
Tax loss	3080	-	-	-
Adjustment of receivable income tax to deferred tax asset	-	2 451	-	-
	5 071	**2 092**	**-**	**-**

19. Revaluation reserve

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Opening balance	654 919	654 919	654 919	654 919

Revaluation surplus relating to property, plant and equipment

20. Revenue

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Sale of goods	11 979	13 694	-	-
Rendering of services	11 058 211	11 583 914	11 058 211	11 583 914
Grants & subsidies	772 521	640 057	772 521	640 057
Total Revenue	**11 842 711**	**12 237 665**	**11 830 732**	**12 223 971**

The amount included in revenue arising from exchanges of goods or services are as follows:

Sale of goods	11 979	13 694	-	-
Rendering of services	11 058 211	11 583 914	11 058 211	11 583 914
	11 070 190	**11 597 608**	**11 058 211**	**11 583 914**

The amount included in revenue arising from non-exchange transactions is as follows:

Transfer Revenue				
Government grants & subsidies	772 521	640 057	772 521	640 057
	772 521	**640 057**	**772 521**	**640 057**

21. Cost of sales

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Direct employee costs	4 311 896	4 300 514	4 296 854	4 285 186
Direct depreciation and impairments	161 217	309 791	161 235	309 719
Direct material expenses	4 679 245	5 502 470	4 673 755	5 499 548
	9 152 358	**10 112 775**	**9 131 844**	**10 094 453**

22. Other income

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Discount received	1 288	1 365	1 288	1 365
Miscellaneous other income [1]	20 829	8 107	20 829	8 107
Fees earned	2 427	1 569	2 427	1 569
Grant income recognised	286 254	188 855	286 254	188 855
Internal recoveries	4	364	4	364
Other income FCL take on [2]	18 520	-	18 520	-
Other income - Land and Building [3]	14 218	-	14 218	-
Public contributions and Donations [4]	2 138	49 000	2 138	49 000
Utilities provision write off [5]	60 696	59 120	60 696	59 120
Gain on exchange differences	3 170	2 399	3 170	2 399
Royalties received	1 714	2 095	1 714	2 095
Sundry income	3 512	833	3 512	833
Teaching income	94 074	87 066	94 074	87 066
	508 844	**400 773**	**508 844**	**400 773**

[1] Miscellaneous other income is generated when the NHLS recovers funds for rental lease agreements, hosts conferences and other charges which need to be recovered from the use of its own facilities such as those used by Contract Laboratory Services. In the current financial the increase is due to billing for Covid-19 Antigen goods provided to the Provincial Departments of Health.

[2] The Forensic Chemistry Laboratories (FCL) were integrated fully into the NHLS on the 1st April 2022 as a transfer from the National Department of Health. An amount of R18 520 000 included in Other Income is in relation of the FCL assets that were transferred to the NHLS.

[3] An amount R14 218 000 included in Other Income relates to the recognition of land in the Western Cape and Gauteng

[4] Public contributions and donations included R49 million received from Solidarity Fund to assist the NHLS in its response to the COVID-19 pandemic.

[5] The Utilities provision write off is in relation to the Utilities policy which was first implemented in 2021/22 financial year and resulted in the write off being processed due to the prescription period.

22. Other income (continued)

The amount included in other revenue arising from exchanges of goods or services are as follows:

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Discount received	1 288	1 365	1 288	1 365
Miscellaneous other income	20 829	8 107	20 829	8 107
Fees earned	2 427	1 569	2 427	1 569
Internal recoveries	4	364	4	364
Utilities provision write off	60 696	59 120	60 696	59 120
Gain or loss on exchange differences	3 170	-	3 170	-
Royalties received	1 714	2 095	1 714	2 095
Sundry income	3 512	833	3 512	833
Teaching income	94 074	87 066	94 074	87 066
	187 714	**160 519**	**187 714**	**160 519**

The amount included in other revenue arising from non exchanges of goods or services are as follows:

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Grant income recognised	286 254	188 855	286 254	188 855
Other income FCL take on	18 520	-	18 520	-
Other income - Land and Building	14 218	-	14 218	-
Public contributions and Donations	2 138	49 000	2 138	49 000
	321 130	**237 855**	**321 130**	**237 855**

23. Operating surplus (deficit)

Operating surplus (deficit) for the year is stated after accounting for the following:

Operating lease charges

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Premises				
• Straight-lined	11 783	4 703	11 783	4 649
Motor vehicles				
• Straight-lined	6 172	(966)	6 172	(966)
Equipment				
• Straight-lined	42 087	38 787	41 781	38 628
	60 042	**42 524**	**59 736**	**42 311**
Loss on sale of property, plant and equipment	4 912	4 283	4 908	4 283
Amortisation on intangible assets	(4 242)	1 418	(4 242)	1 418
Depreciation on property, plant and equipment	152 846	312 409	153 028	312 239
Employee costs	4 559 265	4 783 603	4 541 783	4 767 146

24. Interest income

Interest revenue

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Bank	306 523	139 450	305 910	139 032
Interest received - debtors	78 355	61 954	78 336	61 911
	384 878	**201 404**	**384 246**	**200 943**

25. Interest expense

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Bank	10	2	10	2
Finance leases	-	1 011	-	1 011
Late payment of tax	-	7 374	-	7 374
Other interest paid	108	159	108	159
	118	**8 546**	**118**	**8 546**

26. Taxation

Major components of the tax income

	Economic entity		Controlling entity	
Deferred	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Originating and reversing temporary differences	114	(30)	-	-
Changes in tax rates	(13)	-	-	-
Arising from previously unrecognised tax deficit / tax credit / temporary difference	-	(2 451)	-	-
Benefit of unrecognised tax deficit / tax credit / temporary difference used to reduce deferred tax expense	(3 080)	-	-	-
	(2 979)	**(2 481)**	**-**	**-**

Reconciliation of the tax expense

Reconciliation between applicable tax rate and average effective tax rate.

27. Employee related costs

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Basic	3 338 715	3 424 972	3 325 893	3 412 921
Bonus	201 830	187 392	200 976	186 617
Defined contribution plans	183 471	412 205	182 276	411 061
External bursaries	629	1 955	629	1 955
Leave pay provision charge	32 774	44 592	32 620	44 376
Long-term benefits - incentive scheme	4 069	4 811	4 037	4 750
Medical aid - company contributions	260 809	248 877	259 702	247 794
Other allowances	315 106	251 069	315 106	251 069
Other short term costs	141 812	135 498	141 207	134 846
SDL	43 031	38 737	42 876	38 593
Training	485	229	58	32
UIF	16 818	17 021	16 746	16 950
WCA	19 716	16 245	19 657	16 182
	4 559 265	**4 783 603**	**4 541 783**	**4 767 146**

Employee costs are split into cost of sales and general expenses as follows:

Cost of sales - employee costs	4 311 896	4 300 514	4 296 854	4 285 186
General expenses - employee costs	247 369	483 089	244 929	481 960
	4 559 265	**4 783 603**	**4 541 783**	**4 767 146**

28. Operating expenses

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Advertising	1 026	543	1 026	543
Archiving and Storage	10 192	9 393	10 192	9 393
Auditors remuneration	10 363	8 710	10 363	8 710
Bad debts written off	279	2 139	279	2 139
Bank charges	14 375	13 217	14 333	13 172
Cleaning	5 815	3 293	5 814	3 293
Computer expenses	3 679	1 457	3 630	1 418
Conferences and seminars	1 084	564	1 077	545
Consulting and professional fees	48 834	48 918	48 832	48 674
Consumables	21 153	17 893	21 136	17 839
Contributions to debt impairment provision	(880 846)	1 227 658	(871 945)	1 231 130
Debt collection	1 434	923	1 434	923
Delivery expenses	1 006	2 421	1 008	2 421
Depreciation, amortisation and impairments	(12 612)	4 051	(12 449)	3 938
Discount allowed	40 110	37 541	40 110	37 541
Employee costs	247 369	483 089	244 929	481 960

28. Operating expenses (continued)

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Insurance	14 526	9 306	14 526	9 306
Lease rentals on operating lease	50 620	40 924	50 328	40 882
Legal expenses	21 926	39 729	21 926	39 729
Loss on disposal of assets and liabilities	4 997	4 283	4 993	4 283
Medical expenses	5	3	5	3
Minor assets	7 700	5 092	7 676	5 092
Motor vehicle expenses	2 433	1 198	2 433	1 198
Other expenses	2 427	13	2 429	15
Packaging	10 070	10 456	9 985	10 338
Petrol and oil	21 391	17 946	21 391	17 946
Postage and courier	177	604	177	604
Printing and stationery	50 734	55 203	50 688	55 181
Project Management expenses	7	13	7	13
Promotions	78	40	78	40
Promotions and sponsorships	238	33	238	33
Repairs and maintenance	45 520	38 006	45 291	37 986
Research Trust	231	93	231	93
Royalties and license fees	1 314	1 607	1 314	1 607
Security	5 456	1 023	5 456	1 023
Software development expenses	67 800	19 557	67 800	19 557
Software expenses	136 208	178 967	136 154	178 950
Staff welfare	8 574	6 129	8 522	6 064
Subscriptions and membership fees	6 427	4 137	6 278	4 078
Telephone and fax	52 882	90 944	52 805	90 876
Training	62 430	40 661	62 430	40 661
Travel - local	44 100	18 677	44 097	18 667
Travel - overseas	168	15	168	15
Utilities	221 168	197 190	221 168	197 190
	352 868	**2 643 659**	**358 363**	**2 645 069**

29. Auditors' remuneration

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Audit Fees - current year	10 339	8 665	10 339	8 665
Fees for other services	-	45	-	45
Expenses	24	-	24	-
	10 363	**8 710**	**10 363**	**8 710**

30. Depreciation and amortisation

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Depreciation and amortisation - Cost of sales	161 217	309 791	161 235	309 719
Depreciation and amortisation - General expenses	(12 612)	4 051	(12 449)	3 938
	148 605	**313 842**	**148 786**	**313 657**

31. Cash generated from operations

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Surplus for the year	3 234 067	77 359	3 233 497	77 619
Adjustments for:				
Depreciation and amortisation	148 735	313 799	148 949	313 569
Loss on sale of assets and liabilities	5 181	4 281	5 182	4 281
Fair value adjustments	-	(16)	-	-
Finance costs	118	1 011	118	1 011
Debt impairment	(880 846)	1 227 658	(871 945)	1 231 130
Movements in retirement benefit assets and liabilities	(145 518)	103 908	(145 518)	103 908
Movements in provisions	(164 523)	(52 702)	(164 523)	(52 702)
Movement in Employee benefit obligation	3 008	16 016	3 008	16 016
Annual charge for deferred tax	(2 978)	(2 481)	-	-
Impairment and Fair Value Adjustments	(85)	20	(119)	6
Donations of Assets	(33 562)	(24 456)	(33 533)	(24 456)
Changes in working capital:				
Inventories	239 762	283 365	239 532	286 153
Receivables from exchange transactions	(326 586)	(1 607 065)	(335 010)	(1 612 575)
Receivables from non-exchange transactions	(132 945)	247 369	(132 945)	247 369
Payables from exchange transactions	(254 711)	329 474	(256 186)	324 603
VAT	(231)	(234)	-	-
Unspent conditional grants and receipts	58 227	(42 245)	58 227	(42 245)
	1 747 113	**875 061**	**1 748 734**	**873 687**

32. Tax payable

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Balance at beginning of the year	(2 026)	(2 026)	-	-
Balance at end of the year	2 026	2 026	-	-
	-	**-**	**-**	**-**

33. Financial instruments disclosure

Categories of financial instruments

Economic entity - 2023

Financial assets

	At amortised cost	Total
Receivables from exchange transactions	3 148 354	3 148 354
Receivables from non-exchange transactions	167 812	167 812
Cash and cash equivalents	5 139 368	5 139 368
	8 455 534	**8 455 534**

Financial liabilities

	At amortised cost	Total
Payables from exchange transactions	1 186 507	1 186 507

Economic entity - 2022

Financial liabilities

	At amortised cost	Total
Receivables from exchange transactions	1 940 684	1 940 684
Receivables from non-exchange transactions	34 867	34 867
Cash and cash equivalents	3 483 308	3 483 308
	5 458 859	**5 458 859**

Financial liabilities

	At amortised cost	Total
Payables from exchange transactions	1 445 249	1 445 249

Controlling entity - 2023

Financial assets

	At amortised cost	Total
Receivables from exchange transactions	3 147 292	3 147 292
Receivables from non-exchange transactions	167 812	167 812
Cash and cash equivalents	5 130 636	5 130 636
	8 445 740	**8 445 740**

Financial liabilities

	At amortised cost	Total
Payables from exchange transactions	1 179 023	1 179 023

33. Financial instruments disclosure (continued)

Controlling entity - 2022

Financial assets

	At amortised cost	Total
Receivables from exchange transactions	1 940 098	1 940 098
Receivables from non-exchange transactions	34 867	34 867
Cash and cash equivalents	3 472 883	3 472 883
	5 447 848	**5 447 848**

Financial liabilities

	At amortised cost	Total
Payables from exchange transactions	1 439 339	1 439 339

Financial instruments in Statement of financial performance

Economic entity - 2023

	At amortised cost	Total
Interest income	384 878	384 878
Interest expense	(118)	(118)
	384 760	**384 760**

Economic entity - 2022

	At amortised cost	Total
Interest income	201 404	201 404
Interest expense	(8 546)	(8 546)
	192 858	**192 858**

Controlling entity - 2023

	At amortised cost	Total
Interest income	384 246	384 246
Interest expense	(118)	(118)
	384 128	**384 128**

Controlling entity - 2022

	At amortised cost	Total
Interest income	200 943	200 943
Interest expense	(8 546)	(8 546)
	192 397	**192 397**

34. Commitments

Authorised capital expenditure

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Already contracted for but not provided for				
• Property, plant and equipment	45 986	103 603	45 986	103 603
Not yet contracted for and authorised by members				
• Property, plant and equipment	782 033	-	782 033	-
Total capital commitments				
Already contracted for but not provided for	828 019	103 603	828 019	103 603

This committed expenditure will be financed by retained surpluses, existing cash resources and funds internally generated.

Operating leases - as lessee (expense)

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Minimum lease payments due				
- within one year	682	3 170	682	3 170
- in second to fifth year inclusive	-	682	-	682
	682	**3 852**	**682**	**3 852**

Operating lease payments represent rentals payable by the economic entity for certain of its office equipment. Leases are negotiated for an average term of five years and rentals are fixed for an average of three years. No contingent rent is payable.

35. Contingencies

Claims lodged for damages:				
605 Consulting matter	17 383	17 383	17 383	17 383
Drive Control Corporation matter	37 473	37 505	37 473	37 505
Ms B Mnguni	4 800	4 800	4 800	4 800
Mr W.P. Msimanga	3 000	3 000	3 000	3 000
Ms S. Fortuin	328	328	328	328
Diana Mabaso Incorporated	235	235	235	235
South African Medical Association on behalf of Dr Z.	178	178	178	178
Moorad and Dr A. Jali Rapid IT Solution	432	432	432	432
Sthathu / SKG	-	1 759	-	1 759
H Molotsi	1 759	-	1 759	-
M Baijnath	180	180	180	180
Bakuthi Trading CC	251	251	251	251
G Mathebula	1 700	900	1 700	900
Z Pasha	237	237	237	237
Fredericks	-	-	-	-
G Sethosa	-	-	-	-
G De Gita	-	-	-	-

35. Contingencies (continued)

J Mogale and S Zulu	-	-	-	-
L Gqwetha	-	-	-	-
S L Jack	632	-	632	-
S Mohammed	2 950	-	2 950	-
Hospersa on behalf of Molusi	104	-	104	-
	71 642	**67 188**	**71 642**	**67 188**

There is a matter between 605 Consulting and NHLS, where the NHLS is being sued for an amount of R17.4 million as a result of an Alleged Breach of Contract.

There is another matter between Drive Control and the NHLS, where the NHLS is being sued for an amount of R37.5 million as a result of an Alleged Breach of Contract.

There is also another matter between Ms B Mnguni and the NHLS, where the NHLS is being sued for personal injury against the NHLS which amount to R4.8 million.

There is also another labour matter between Mr W P Msimanga and the NHLS, where the NHLS is being sued for an amount of R3.0 million due to a Labour matter.

There is also another matter between Mr S Fortuin and the NHLS, where the NHLS is being sued for personal injury against the NHLS which amounts to R0.3 million.

There is also another matter between Diana Mabaso Inc and the NHLS, where the NHLS is being sued for damages for legal fees by the law firm which amounts to R0.2 million.

There is also a dispute before the Labour court on the deduction of monies that were allegedly overpaid to the Dr Z Moorad and Dr A Jali which amounts to R0.2 million.

There is also a dispute before the High Court with regards to a contractual dispute with Rapid IT Solution which amounts to now amounts to R0.4 million. The NHLS attorneys confirmed that the inital amount of R3.7 million as claimed will no longer be applicable. The only amount to be applicable in this review application is the R0.4 million.

The Sthathu and SKG matter was resolved in favour of the NHLS.

There is also another matter between H Molotsi where the NHLS is being sued for an amount of R1,7 million.

There is also another matter between Bakuthi Trading CC where the NHLS is being sued for an amount of R0.2 million. There are also labour matters between the NHLS and the following:

a) M Baijnath for an amount of R0.2 million
b) G Mathebula for an amount of R1.7 million. Mr Mathebula was dismissed for gross misconduct and referred the matter to the CCMA in which the CCMA ruled in against the NHLS and ordered the NHLS to pay him R 1.7 million. The NHLS has taken the matter for review application at the Labour Court.
c) Z Phasha for an amount of R0.2 million
d) Fredericks for which the amount has not been determined as the matter is still under review
e) G Sethosa for which the amount has not been determined as the matter is still under review
f) G De Gita for which the amount has not been determined as the matter is still under review

35. Contingencies (continued)

g) J Mogale and S Zulu for which the amount has not been determined as the matter is still under review
h) L Gqweta for which the amount has not been determined as the matter is still under review

There is also another matter between S L Jack and NHLS, where the NHLS is being sued for an amount of R 0.6 million and the matter is still under review.
There is also another matter between S Mohamed and the NHLS, where S Mohamed issued the letter of demand against the NHLS for alleged medical negligence for an amount of R 2.95 million. The NHLS is defending the matter in the High Court.

There is also another matter between Hospersa on behalf of Molusi and NHLS, where Molusi was dismissed for gross negligence and gross insubordination and referred the matter to the CCMA and the NHLS was ordered to pay R 0.1 million. The NHLS has taken the matter for review application at the Labour Court.

The intention of the NHLS is to defend all other cases and the legal opinion is of the view that the NHLS is in a favourable legal position to succeed.

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Contingent assets				
Mariana Madfaslina Lloyd Jansen Van Vuuren	1 630	1 630	1 630	1 630
Prof Wade	18 283	18 283	18 286	18 286
Hamilton Ndlovu	159 156	159 156	159 156	159 156
	179 069	**179 069**	**179 072**	**179 072**

There is a matter between the NHLS and Mariana Madfaslina Lloyd Jansen Van Vuuren where the NHLS is claiming the amount of R1.6 million from an ex employee as a result of breach of contract.

There is a matter between the NHLS and Prof Wade where NHLS is claiming R18.2 million.

There is a matter between the NHLS and Hamilton Ndlovu where Hamilton Ndlovu is liable to pay the NHLS R159.2 million.

36. Related parties

Relationships

Controlling entity	National Department of Health
Controlled Entity	South Afican Vaccine Producers (Pty) Ltd

Related party balances

Loans to controlled entity				
South African Vaccine Producers (Pty) Ltd	-	-	43 773	34 717
Impairment of loans to controlled entity				
South African Vaccine Producers (Pty) Ltd	-	-	(43 773)	(34 717)
Revenue - Grants & Subsidies				
National Department of Health	772 521	640 057	772 521	640 057
Employee Related Expenses				
South African Vaccine Producers (Pty) Ltd	-	-	17 419	16 071

37. Key Management and Board members' emoluments - R'000s

Emoluments were paid to the board members or any individuals holding a prescribed office during the year.

Key Management

2023

	Salaries	Retirement Contribution	Medical Contribution	Expense Allowance	Other**	Total
Dr K. Chetty (Chief Executive Officer)	2 653	231	-	42	29	2 955
Dr C.E.M. Oliphant (Chief Operations Officer: Strategic Initiatives from February 2023)	287	28	-	3	4	322
Mr M.J. Shai (Acting Chief Financial Officer up to 30 April 2022)	178	-	-	-	2	180
Ms P Mayekiso (Acting Chief Financial Officer from 01 May 2022, Chief Financial Officer from 01 January 2023	1 275	104	47	-	17	1 443
Adv M. M. Mphelo (Company Secretary)	2 150	187	-	-	26	2 363
Mr S.T. Hlongwane (Chief Information Officer)	1 894	175	165	-	23	2 257
Dr S.M. Kgalamono (NIOH Director)	2 169	238	82	3	27	2 519
Prof K.P. Mlisana (AARQA Executive)	2 388	222	158	3	30	2 801
Ms M. Mkhwanazi (Executive: Human Resources from 01 June 2021)	2 119	192	85	-	27	2 423
M. Saffer (SAVP Director up to 30 November 2022)	777	51	-	-	11	839
Prof A.J. Puren (NICD Director)	2 181	230	129	3	27	2 570
	18 071	**1 658**	**666**	**54**	**223**	**20 672**

** Other payments include company contributions for skills development, UIF, expense recoveries and long service awards.

37. Key Management and Board members' emoluments - R'000s (continued)

2022

	Salaries	Retirement Contribution	Medical Contribution	Expense Allowance	Other**	Leave Pay Out	Total
Dr K. Chetty (Chief Executive Officer)	2 456	215	-	40	26	-	2 737
Mr M. Sass (Chief Financial Officer)	2 290	167	68	-	2 287	452	5 264
Mr M.J. Shai (Acting Chief Financial Officer from 01 January 2021)	1 950	-	-	-	24	-	1 974
Adv M.M. Mphelo (Company Secretary)	2 034	178	-	5	25	-	2 242
Mr S.T Hlongwane (Chief Information Officer)	1 751	163	112	2	22	-	2 050
Dr S.M. Kgalamono (NIOH Director)	2 068	230	78	6	26	-	2 408
Prof K.P. Mlisana (AARQA Executive)	2 226	208	150	6	28	-	2 618
Ms M. Mkhwanazi (Executive: Human Resources)	1 644	152	88	-	21	-	1 905
Prof A.J. Puren (NICD Director)	1 600	154	91	-	20	-	1 865
Ms M. Saffer (SAP Director)	899	79	-	5	13	-	996
	18 918	**1 546**	**587**	**64**	**2 492**	**452**	**24 059**

** Other payments include company contributions for skills development, UIF, expense recoveries and long service awards.

Service contracts

Prescribed Officers are subject to written employment agreements. The employment agreements regulate duties, remuneration, allowances, restraints, leave and notice periods of these executives. None of these service contracts exceed 5 years.

37. Key Management and Board members' emoluments - R'000s (continued)

Non-executive board members

2023

	Committees fees	Total
Prof Eric Buch	183	183
Prof Jeffrey Mphahlele	116	116
Mr Jonathan Mallett	84	84
Prof Thanyani Mariba	108	108
Dr Siseko Martin	81	81
Prof Michael Sachs	105	105
Prof Tivani Mashamba - Thompson	81	81
Ms Tryphina Macanda	46	46
	804	**804**

2022

	Committees fees	Total
Prof Eric Buch	233	233
Prof Jeffrey Mphahlele	90	90
Prof Thanyani Mariba	126	126
Dr Siseko Martin	77	77
Prof Michael Sachs	88	88
Ms Sphiwe Mayinga	78	78
Prof Tivani Mashamba - Thompson	44	44
Prof Mary Ross	38	38
	774	**774**

*Other fees relate to travel re-imbursement, out-of-pocket expenses and other company contributions.

38. Risk management

Financial risk management

NHLS activities expose it to a variety of financial risks: market risk (including currency risk, fair value interest rate risk, cash flow interest rate risk and price risk), credit risk and liquidity risk.

NHLS's overall risk management program focuses on the unpredictability of financial markets and seeks to minimise potential adverse effects on the economic entity's financial performance. Risk management is carried out by a central treasury department under policies approved by the accounting authority. The Economic Entity's treasury identifies and evaluates financial risks in close co-operation with the NHLS's operating units. The accounting authority provides written principles for overall risk management, as well as written policies covering specific areas, such as interest rate risk, credit risk, and investment of excess liquidity.

38. Risk management (continued)

Liquidity risk

Prudent liquidity risk management implies maintaining sufficient cash and the availability of funding through an adequate amount of committed credit facilities and the ability to close out market positions. Due to the dynamic nature of the underlying businesses, NHLS treasury maintains flexibility in funding by maintaining availability of funds under short-term investments. At year end the investment in short-term deposits amounted to R5.1bn (2022: R3.5bn).

The economic entity's risk to liquidity is a result of the funds available to cover future commitments. NHLS manages liquidity risk through an ongoing review of future commitments and credit facilities.

The table below analyses the NHLS's financial liabilities into relevant maturity groupings based on the remaining period at the statement of financial position to the contractual maturity date. The amounts disclosed in the table are the contractual undiscounted cash flows. Balances due within 12 months equal their carrying balances as the impact of discounting is not significant.

Economic entity

At 31 March 2023	Less than 1 year	Between 1 and 2 years
Payables from exchange transactions	1 219 587	-
At 31 March 2022		
Payables from exchange transactions	1 474 199	-

Controlling entity

At 31 March 2023	Less than 1 year	Between 1 and 2 years
Payables from exchange transactions	1 212 103	-
At 31 March 2022		
Payables from exchange transactions	1 468 289	-

Credit risk

Credit risk consists mainly of cash deposits, cash equivalents, and trade debtors. The entity only deposits cash with major banks with high quality credit standing and limits exposure to any one counter-party.

Concentrations of credit risk with respect to trade receivables are limited due to the majority of receivables being owned by government departments. However, due to the current payment disputes with the KZN Provincial Department of Health and Gauteng Department of Health, a total doubtful debt allowance of R4.0bn (2022: R4.7bn) has been raised for these Departments. Trade receivables are interest bearing and are generally on 30 day payment terms. All interest on overdue debt has been provided for in full due to various communications received from the relevant government departments indicating they will not be in a position to honour the the additional interest owed to NHLS.

39. Irregular expenditure / Fruitless and Wasteful Expenditure

Incidents/cases identified in the current year include those listed below:

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Irregular Expenditure	705 007	1 290 542	705 007	1 290 542
Fruitless and Wasteful Expenditure	118	1 285	118	1 285
	705 125	**1 291 827**	**705 125**	**1 291 827**

Restatement of prior balance

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Previously stated	-	1 285 629	-	1 285 629
Restatement	-	6 198	-	6 198
	-	**1 291 827**	**-**	**1 291 827**

Criminal / disciplinary steps	705 125	-	705 125	-

No Criminal or disciplinary steps were taken as procurement was of essential goods and services and no loss was identified.

40. Prior-year adjustments

Presented below are those items contained in the statement of financial position and statement of financial performance that have been affected by prior-year adjustments, change in accounting policy and reclassifications:

Statement of financial position

Economic entity - 2022

	Note	As previously reported	Correction of error	Re-classification	Restated
Provisions	16	638 068	-	(334 793)	303 275
Employee benefit obligation	17	-	-	334 793	334 793
Deferred tax	18	359	(2 451)	-	(2 092)
Accumlated Surplus		3 922 342	928	-	3 923 270
Tax receivable/(payable)	32	424	(2 450)	-	(2 026)
		4 561 193	**(3 973)**	**-**	**4 557 220**

Controlling entity - 2022

	Note	As previously reported	Re-classification	Restated
Provisions [1]	16	638 068	(334 793)	303 275
Employee benefit obligation [1]	17	-	334 793	334 793
		638 068	**-**	**638 068**

[1] During the year it was noted that accrued leave obligation and bonus obligation were incorrectly classified as provisons, thus a re-classification was required to correctly classify them as employee benefits obligations.

40. Prior-year adjustments (continued)

Statement of financial performance

Economic entity - 2022

	Note	As previously reported	Correction of error	Re-classification	Restated
Cost of sales [2]	21	10 117 395	-	(4 620)	10 112 775
Operating expenses [2]	28	2 639 024	-	4 620	2 643 644
Taxation [3]	26	1 553	(4 034)	-	(2 481)
Surplus (deficit) for the year		**12 757 972**	**(4 034)**	**-**	**12 753 938**

[2] Rental expenses was incorrectly classified as cost of sales instead of operating expense.
[3] The adjustment is due to entries processed in the SAVP Trial balance that were not processed in the consolidation Annual Financial Statement.

Controlling entity - 2022

	Note	As previously reported	Re-classification	Restated
Cost of sales	21	10 099 073	(4 620)	10 094 453
Operating expenses	28	2 640 229	4 620	2 644 849
Surplus for the year		**12 739 302**	**-**	**12 739 302**

Rental expense was incorrectly classified as cost of sales instead of operating expense.

41. Segment information

General information

Identification of segments

The economic entity is organised and reports to management on the basis of nine major provinces within the country. The segments were organised around the the target market. Management uses these same segments for determining strategic objectives. Segments were aggregated for reporting purposes.

Information reported about these segments is used by management as a basis for evaluating the segments' performances and for making decisions about the allocation of resources. The disclosure of information about these segments is also considered appropriate for external reporting purposes.

Types services by segment

All the segments within the economic entity offer similar services namely laboratory testing, teaching and research services.

41. Segment information (continued)

Segment surplus or deficit, assets and liabilities Economic entity - 2023

	Laboratory Service	NIOH	NICD	FCL	SAVP	Total
Revenue						
Revenue from non-exchange transactions	260 083	91 608	282 430	138 400	-	772 521
Revenue from exchange transactions	11 000 590	23 601	34 019	-	11 979	11 070 189
Other income	487 374	1 122	1 826	18 520	-	508 842
Interest received	349 630	7 604	23 721	3 291	633	384 879
Total segment revenue	**12 097 677**	**123 935**	**341 996**	**160 211**	**12 612**	**12 736 431**
Entity's revenue						**12 736 431**
Expenditure						
Cost of sales	8 391 726	124 252	337 587	117 043	20 540	8 991 148
Operating expenses	317 395	10 991	27 315	15 110	3 727	374 538
Depreciation and amortisation	130 542	5 007	17 017	(3 780)	(181)	148 605
Interest paid	118	-	-	-	-	118
Taxation	-	-	-	-	(2 956)	(2 956)
Total segment expenditure	**8 839 781**	**140 250**	**381 919**	**128 373**	**21 130**	**9 511 453**
Total segmental surplus						**3 224 978**

41. Segment information (continued)

Segment surplus or deficit, assets and liabilities Economic entity - 2022

	Laboratory Service	NIOH	NICD	SAVP	Total
Revenue					
Revenue from non-exchange transactions	262 518	92 465	285 074	-	640 057
Revenue from exchange transactions	11 536 725	17 925	29 264	13 694	11 597 608
Other income	392 856	449	7 468	-	400 773
Interest received	173 017	6 510	21 416	461	201 404
Fair value adjustment	-	-	-	1	1
Total segment revenue	**12 365 116**	**117 349**	**343 222**	**14 156**	**12 839 843**
Entity's revenue					**12 839 843**
Expenditure					
Cost of sales	9 325 266	118 789	345 299	18 247	9 807 601
Operating expenses	2 588 398	12 065	36 052	(1 521)	2 634 994
Depreciation and amortisation	264 087	10 354	39 216	169	313 826
Interest expense	8 454	42	48	-	8 544
Taxation	-	-	-	(1 553)	(1 553)
Total segment expenditure	**12 186 205**	**141 250**	**420 615**	**15 342**	**12 763 412**
Total segmental surplus					**76 431**

Measurement of segment surplus or deficit, assets and liabilities

Basis of accounting for transactions between reportable segments

The accounting policies of the segments are the same as those described in the summary of significant accounting policies.

42. Budget differences

Material differences between budget and actual amounts

The budget was prepared on an accruals basis covering the financial year ended 31 March 2023. The variances between budget and actual which are numerically 10% and R100m above or below budget are explained below:

42.1. Rendering of services

The variance is caused by unanticipated change in the number of tests than the levels anticipated during the budget period.

42.2. Grant income

The grant income was more than anticipated during the budget due to the number of projects awarded to the NHLS.

42. Budget differences (continued)

42.3.Interest received

Interest received was more than antipated mainly due to the interest earned on the bank balances.

The increase is also attributable to the repo rate/interest rate increases by the Reserve bank.

42.4. Goverment grants and subsidies

Goverment grants were reduced and allocation of FCL was added to the total grant amount after the approval of the budget.

42.5.Personnel

The variance is caused by vacancies being mainly filled by internal candidates with a delay in their replacements.

42.6 Debt impairment

The variance is driven by the amount that is owed by the provinces for a prolonged period.

42.7 General expenses

The underspent is mainly attributed to a reduction in Covid purchases.

43. Going concern

The annual financial statements have been prepared on the basis of accounting policies applicable to a going concern. This basis presumes that funds will be available to finance future operations and that the realisation of assets and settlement of liabilities, contingent obligations and commitments will occur in the ordinary course of business.

NHLS management has considered all the consequences of all current circumstances/events and conditions, and it has determined that they do not create a material uncertainty that casts significant doubt upon the entity's ability to continue as a going concern. Based on management assessment the NHLS will continue to operate as a going concern for the foreseeable future.

44. VAT receivable

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
VAT	357	126	-	-

45. Lease rentals on operating lease

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Premises				
Contractual amounts	11 783	4 703	11 783	4 649
Motor vehicles				
Contractual amounts	6 172	(966)	6 172	(966)
	42 087	38 787	41 781	38 628
	60 042	**42 524**	**59 736**	**42 311**

46. Fair value adjustments

	Economic entity		Controlling entity	
	2023 R'000	2022 R'000	2023 R'000	2022 R'000
Biological assets	-	16	-	-

47. Change in estimate

Property, plant and equipment

The useful life of certain assets that were fully depreciated were adjusted by one to three years. The effect of this revision has increased the depreciation charges for the current and future periods by R81.6 million for the Controlling entity and R81.7 million for the Economic Entity.

Intangible assets

The useful life of computer software licenses that were fully depreciated were adjusted by one to three years. The effect of this revision has increased the depreciation charges for the current and future periods by R5.9 million for the Controlling entity and R5.9 million for the Economic Entity.

48. Events after the reporting date

NHLS continues to provide pathology services. The accounting authority is not aware of any significant matter or circumstance arising since the end of the financial year, not otherwise dealt within the annual financial statements, which materially affects the financial position of the group or the results of its operations to the date of approval of these annual financial statements.

Detailed Statement of Financial Performance

	Note(s)	Economic entity		Controlling entity	
		2023 R'000	2022 R'000	2023 R'000	2022 R'000
Revenue					
Sale of goods		11 979	13 694	-	-
Rendering of services		11 058 211	11 583 914	11 058 211	11 583 914
Government grants & subsidies		772 521	640 057	772 521	640 057
		11 842 711	**12 237 665**	**11 830 732**	**12 223 971**
Cost of sales	**21**	**(9 152 358)**	**(10 112 775)**	**(9 131 844)**	**(10 094 453)**
Gross surplus		**2 690 353**	**2 124 890**	**2 698 888**	**2 129 518**
Other income					
Miscellaneous other income		20 829	8 107	20 829	8 107
Fees earned		2 427	1 569	2 427	1 569
Royalties received		1 714	2 095	1 714	2 095
Discount received		1 288	1 365	1 288	1 365
Recoveries		60 700	59 484	60 700	59 484
Teaching Income		94 074	87 066	94 074	87 066
Sundry Income		3 512	833	3 512	833
Grant income recognised		286 254	188 855	286 254	188 855
Other income FCL take on		18 520	-	18 520	-
Other income - Land and Building		14 218	-	14 218	-
Interest received	24	384 878	201 404	384 246	200 943
Public contributions and donations		2 138	49 000	2 138	49 000
Exchange gains		3 170	2 399	3 170	2 399
Grant assets fair value adjustments	46	-	16	-	-
		893 722	**602 193**	**893 090**	**601 716**
Expenses (Refer to page 77)		**(352 868)**	**(2 643 659)**	**(358 363)**	**(2 645 069)**
Operating surplus	**23**	**3 231 207**	**83 424**	**3 233 615**	**86 165**
Interest expense	25	(118)	(8 546)	(118)	(8 546)
Surplus before taxation		**3 231 089**	**74 878**	**3 233 497**	**77 619**
Taxation	26	(2 978)	(2 481)	-	-
Surplus for the year		**3 234 067**	**77 359**	**3 233 497**	**77 619**

Detailed Statement of Financial Performance (continued)

	Note(s)	Economic entity 2023 R'000	Economic entity 2022 R'000	Controlling entity 2023 R'000	Controlling entity 2022 R'000
Operating expenses (by function)					
Advertising		1 026	543	1 026	543
Archiving and Storage		10 192	9 393	10 192	9 393
Auditors remuneration	29	10 363	8 710	10 363	8 710
Bad debts written off		279	2 139	279	2 139
Bank charges		14 375	13 217	14 333	13 172
Cleaning		5 815	3 293	5 814	3 293
Computer expenses		3 679	1 457	3 630	1 418
Conferences and seminars		1 084	564	1 077	545
Consulting and professional fees		48 834	48 918	48 832	48 674
Consumables		21 153	17 893	21 136	17 839
Debt Impairment		(880 846)	1 227 658	(871 945)	1 231 130
Debt collection		1 434	923	1 434	923
Delivery expenses		1 006	2 421	1 008	2 421
Depreciation, amortisation and impairments		(12 612)	4 051	(12 449)	3 938
Discount allowed		40 110	37 541	40 110	37 541
Employee costs		247 369	483 089	244 929	481 960
Insurance		14 526	9 306	14 526	9 306
Lease rentals on operating lease		50 620	40 924	50 328	40 882
Legal expenses		21 926	39 729	21 926	39 729
Loss on disposal of assets		4 997	4 283	4 993	4 283
Minor assets		7 700	5 092	7 676	5 092
Motor vehicle expenses		2 433	1 198	2 433	1 198
Other contract expenses		5	3	5	3
Other expenses		2 427	13	2 429	15
Packaging		10 070	10 456	9 985	10 338
Petrol and oil		21 391	17 946	21 391	17 946
Printing and stationery		50 734	55 203	50 688	55 181
Postage and courier		177	604	177	604
Project Management expenses		7	13	7	13
Promotions		78	40	78	40
Promotions and sponsorships		238	33	238	33
Repairs and maintenance		45 520	38 006	45 291	37 986
Research Trust		231	93	231	93
Royalties and license fees		1 314	1 607	1 314	1 607
Security		5 456	1 023	5 456	1 023
Software development expenses		67 800	19 557	67 800	19 557
Software expenses		136 208	178 967	136 154	178 950
Staff welfare		8 574	6 129	8 522	6 064
Subscriptions		6 427	4 137	6 278	4 078
Telephone and fax		52 882	90 944	52 805	90 876
Training		62 430	40 661	62 430	40 661
Travel - local		44 100	18 677	44 097	18 667
Travel - overseas		168	15	168	15
Utilities		221 168	197 190	221 168	197 190
		352 868	**2 643 659**	**358 363**	**2 645 069**

* See Note 40

The supplementary information presented does not form part of the audited group annual financial statements and is unaudited.

Awards and Recognition

The Internal Audit Function received a "Generally Conforms" outcome during the independent assessment for the quality assurance and improvement programme, in accordance with the International Professional Practice Framework of the Institute of Internal Auditors (IIA). Furthermore, **Mr Nkosinathi Khumalo** (NHLS Head of Risk Management and Internal Audit Department) received the Excellence in Internal Audit Leadership Award from the IIA in November 2022.

The late **Dr Elvira Singh** posthumously received the AG Oettlé Memorial Award as a fitting recognition of her extraordinary cancer registration and epidemiology efforts as a distinguished scientist who contributed to advancing cancer research and understanding a devastating disease, underscoring CANSA's recognition of the National Cancer Registry's efforts.

The Centre for Emerging Zoonotic and Parasitic Diseases (CEZPD) team, led by **Dr Givemore Munhenga**, received recognition from the International Atomic Energy Agency (IAEA). This leading intergovernmental organisation seeks to promote the peaceful use of nuclear energy. The IAEA recognised the team's work on the Sterile Insect Technique (SIT) project. As a result, the VCLR was nominated to host an insect control fellowship under Dr Munhenga through the agency's fellowship programme.

At the 11th TEPHINET Global Scientific Conference held in Panama City, **Dr Thendo Ndou**, a graduate of the Field Epidemiology Training Programme, made a significant impact with his research on "Epidemiology of ESKAPE Pathogens at a Tertiary Care Hospital in South Africa, January 2019-August 2021". Flying the SAFETP-DPHSR flag, Dr Ndou was recognised for the "Best Oral Presentation by a Frontline FETP Fellow or Recent Graduate" for his presentation.

The Benedyke Polak Award 2022 was awarded to **Prof Janusz Paweska**. This award is given to a Polish and a foreign scientist who have achieved outstanding achievements in exploration and research. The activities of these organisations strengthen the ties between Poland's science and culture and the international heritage of research, imagination, and thought.

The Centre for Tuberculosis's **Dr Shaheed Vally Omar** has received Global Health funding to continue the TB Surveillance Programme at the NICD and NHLS. During the Global Health Fund visit in Geneva, Dr Shaheed Vally Omar was seconded to assist the CEO with support from the NDoH.

Dr Arshad Ismail's appointment as a special category researcher at the University of Venda's Department of Biochemistry and Microbiology is a testament to his expertise in the sequencing field. Dr Ismail, the head of the Sequencing Core, has been recognised for his contributions to the area and appointed an adjunct Professor at the university.

Mr Zibusiso Masuku was instrumental in the designation of NICD's Regional Diagnostic Demonstration Centre (RDDC) as the first Regional Centre of Excellence for Biosafety and Biosecurity (RCoEBB) in Africa, which was conferred by the Africa Centers for Disease Control and Prevention.

The International Association of National Public Health Institutes (IANPHI) recognised **Dr Harry Moultrie** for outstanding success in building a collaborative modelling consortium for COVID-19 as the winning project of the African Network for the Recognition of Success in 2022.

NATIONAL HEALTH LABORATORY SERVICE

health
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