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Strengthening Laboratory Capabilities in Improving HIV/AIDS and Other Diseases Support in Zimbabwe

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ABSTRACT

Background: Laboratory services are always overlooked by the governments when it comes to funding, and they are mostly left behind in terms of newer testing technologies, however, in Zimbabwe, there has been a tremendous improvement in laboratory support through the partners and donors.

Aims: The objective of the study was to review the progress made in strengthening laboratory capabilities in improving HIV/AIDS and other disease support in Zimbabwe.

Methods: This study adopted a qualitative research method based on secondary data collected from laboratory documentation, including websites such as SADCAS. The study focused mainly on laboratories scattered around Zimbabwe, on the improvements made in support of HIV care in Zimbabwe.

Results: The results show that there has been a great improvement in terms of laboratory performance and management through support from various donors interested in HIV/AIDS, TB and Malaria. Furthermore, the results show that there are currently 13 public health laboratories accredited to SADCAS, several improvements in employee support, and new technologies are being employed throughout the Zimbabwean laboratories for both HIV and TB care. Additionally, the laboratory information system is functional and now helps to send laboratory results to clinics and patients for patient management by all the clinics and hospitals.

Conclusion: However, concerns regarding reliance on and the sustainability of these partnerships remain a challenge if they sever ties with the laboratory services, as the funding from the government is not adequate to support the laboratory's full independence. As for the policy makers, they can help to improve the funding gaps to enable sustainability in the long run so that the gains acquired will not go to waste if the donors and partners decide otherwise, as is happening with USAID and PEPFAR funding.

Keywords: *Laboratory; Testing; Governments; HIV/AIDS; Disease; Diagnosis*.

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1. Introduction

Laboratories are frequently overlooked by governments, development organisations, and other stakeholders in plans to improve healthcare systems in developing countries (Mayavo, 2023). Laboratories are fundamental and essential parts of healthcare systems, providing clinical staff and patients with test results that serve as the foundation for disease diagnosis and treatment (Adekoya et al., 2025; Gregson et al., 2021). Sub-Saharan Africa continues to experience the negative effects of working with some of the world's worst-equipped and under-resourced laboratories, notwithstanding the expansion of global health programs during the past ten years or so. As a result, by 2012, the World Health Organization (WHO), the United Nations Millennium Development Goals (UNMDG), and the US President's Emergency Plan for AIDS Relief (PEPFAR) Blueprint all called for strengthened national laboratory systems as an essential part of scaling up human immunodeficiency virus (HIV) and tuberculosis (TB) prevention and treatment programme (Hamel et al., 2015).

According to the Zimbabwe National HIV Sentinel Surveillance Surveys conducted in 2015, the country's overall HIV-1 prevalence has stayed around 14% (Zimbabwe National AIDS Prevalence Report, 2015). From 2004 to 2021, PEPFAR grants were given to the Centre for Disease Control to promote the creation of prevention, care, and treatment programs in Botswana, Nigeria, Malawi, Tanzania and Zimbabwe (CDC, 2012). To deliver evidence-based HIV prevention in these states, PEPFAR collaborated with the AIDS Prevention Initiative, a group established with financing from the Bill and Melinda Gates Foundation. Based on these HIV preventive initiatives, programmes began funding antiretroviral treatment (ART) operations at various hospitals and clinics, including the procurement of testing commodities in the laboratory (Elendu et al., 2025; Howard et al., 2012). By 2009, CDC and Zimbabwe National Quality Assurance Programme (ZINQAP) signed a contract with CDC, where ZINQAP managed funds for the laboratory services in Zimbabwe which included procurement of commodities, equipment, provision of fuel on quarterly basis and support and supervision as a way of increasing laboratory efficiency in support of HIV/AIDS care (Mayavo, 2023; Mayavo & Saruchera, 2024). This arrangement minimised laboratory stock-outs, key members of staff were retained in critical positions such as Coordinator, Logistics Officer (LO), Information Manager (IT), and the Chief Medical Laboratory Scientist. These were stationed at the National Microbiology Reference Laboratory, which is one of the key pillars of laboratory services in Zimbabwe.

It was decided from the start of the Centre for Disease Control (CDC), Clinton Health Access Initiatives (CHAI), John Snow Inc. (JSI) and (Chemonics have taken over from JSI), President's Emergency Plan for AIDS Relief (PEPFAR) initiatives that a crucial part of the capacity-building efforts would be devoted to laboratory infrastructure, with a matching growth in logistics management for supply, procurement and laboratory staff training to ensure sustainability. In order to achieve long-lasting improvements in laboratory capacity and infrastructure, they integrated lessons learned from previously established ART laboratories in other countries when creating the program frameworks and plans (Dacombe, et al., 2016; Safi et al., 2020). In this paper, I describe the organisational framework that resulted in the establishment of continuous quality improvements to increase laboratory capacity in Zimbabwe over the years of programme funding (2007–2024). Additionally, I emphasise teamwork and provide information on specific techniques and methodologies that have been proven to be crucial for significant laboratory progress in a setting with limited resources, especially in Zimbabwe.

2. Literature Review

Historical neglect of laboratory services and impact on Health Outcomes

The errors occur when the laboratory is neglected, which impacts negatively on health outcomes as 80% of medical decisions are influenced by the laboratory information or data (Kane, 2009). Additionally, the laboratory is a critical component of the modern healthcare system, providing essential diagnostic capacity to inform treatment decisions and health interventions. However, in the low to middle-income countries, laboratories have been historically underfunded and neglected. This stems from many factors such as poor investment in health infrastructure, lack of trained staff and limited access to more advanced equipment and technology (Robert et al., 2022). Historically, laboratory services were relegated to a secondary role in health services delivery, overshadowed by other health priorities such as patient care and vaccination programmes. Furthermore, in Africa, the emphasis on the primary health care system contributed to the marginalisation of laboratory services. Additionally, resources were being allocated to clinical areas, which led to poor investments in the laboratory infrastructure, trained personnel and modern equipment (Chihaka & Dhlakama, 2009). In Zimbabwe, due to political and economic crises from 1990 to around the 2000s, degradation of health services, including laboratory services, eventually, the laboratory services becoming dysfunctional, relegating their capacity to provide accurate and timely diagnostics services. However, the impact of neglect of laboratory on disease outcome, according to the World Health Organisation (2018);

1) Delayed treatment and diagnosis: HIV/AIDS is an example where failure to have functional laboratory, timely and accurate diagnostic tests would not be achieved, and there is also a misdiagnosis.
2) Increased Mortality and Morbidity rate: In low to middle-income countries, HIV/AIDS, TB need precise laboratory testing for effective treatment and management. In Zimbabwe, historically, weakened laboratories contributed to the rise in preventable deaths from various diseases, adding to health inequalities.
3) Ineffective health surveillance: Failure to have reliable laboratory data generated means diseases would go untreated or poorly managed, especially in resource-limited settings

The neglect of laboratory services has severe consequences on diseases outcome in LMIC. Addressing the neglect of laboratory services, will strengthen the laboratory infrastructure and ensure proper funding and integrating laboratory services into broader health policies and programmes. Additionally, laboratory services enhance disease detection, improve treatment accuracy and eventually save lives and providing a good foundation for a better and healthier future**.**

Global and Regional Context of Laboratory Services

The global context is that laboratory services' recognition has grown over the years, and thanks to COVID-19, that has amplified the need for a strong laboratory system. Globally, the laboratory's role has been recognised and a need to have a robust system for improving the public health and disease control system (Mayavo, 2024). The global context now recognises the strengthening diagnostic capacity, ensuring the promotion of quality assurance and biosafety. At the regional stage, it is said that World Health Organisation and Centre for Disease Control (CDC) are working hard to strengthen laboratory system in the African continent such as 1) capacity building through training of laboratory staff and provision of technical assistance, 2) they are promoting quality control and accreditation and 3) they are promoting regional networks of laboratory for increased resource sharing and collaborations. However, COVID-19 played a key role in Zimbabwe to bring a turnaround of laboratory services as they managed the pandemic (WHO, 2020), and the laboratory system now can-do molecular diagnosis with real-time RT-PCR. Additionally, the laboratory services can do testing using GeneXpert technology, which has improved laboratory testing at the provincial level, and they have also improved on quality assurance and are being established to strengthen laboratory services through trainings.

Similarities of African countries

There are similarities in terms of challenges faced by Zimbabwe and other African countries (Lingg et al., 2016; Ondoa et al., 2017) in terms of laboratory services, and they are as follows:

1. Lack of funding: The impact of lack of funding is poor laboratory performance, lack of current and modern equipment for testing, impacting laboratory supplies as well as personnel.
2. Human Resource shortage: African countries face brain drain, and most of the laboratories operate without trained and experienced personnel, a lack of opportunities, including low pay, which leads to migration to NGOs and other non-African countries.
3. Poor laboratory infrastructure: Most African medical laboratories are poorly equipped, with poor safety adherence and infection control mechanisms.

4. Lack of coordination: This leads to duplication of activities and causes inefficiencies (SADC Report, 2009)
5. Quality Assurance: This is one area that is lacking across the continent in ensuring the quality and reliability of laboratory tests.
6. Biosafety is often weak, without protocols, posing a risk to laboratory personnel and the general populace.

However, the same African countries differ in the way they approach health services, such as laboratory as some have progressed while others have not. For example, Zimbabwe have implemented a national laboratory policy and strategic plans as a guide to laboratory system development. Other countries focused on strengthening district and primary health systems and accordingly, some established regional and international networks to facilitate resource sharing and collaborations (Nzombe et al., 2014; Ondoa et al., 2020).

Laboratory facilities

The process of choosing a clinic or hospital for the development of laboratory capacity to support HIV care, including Early Infant Diagnosis (EID), necessitated considering a variety of factors, including the patient load, existing infrastructure, location compared to other program facilities, and local politics. To find potential clinics, the laboratory services' (NMRL) initiatives coordinated and conferred with local partners and funding agencies, since there were some who were already on the ground, their experiences were key in decision making (Kruk et al., 2018). After an identification of a hospital or any suggested, a site inspection was carried out to evaluate the infrastructure for the laboratory, and the staff that was already in place. Because of the subpar infrastructure that was already in place, such as the absence of reliable electricity service or running water, there were frequently significant barriers to laboratory development (Aluttis et al., 2013; Elendu et al., 2025). Utility dependability was crucial because the laboratory testing protocol required substantial use of electricity-driven instruments. Where electricity was in short supply, the funders would provide funding for the procurement and installation of solar systems and generators including renovations where necessary. Where uni-directional was possible, the renovations would provide for such, or recommendations were put forward for consideration with the full committee responsible for such activities.

Provision of laboratory equipment

A needs analysis was the first step in the preliminary laboratory modifications, which also included guaranteeing a dependable supply of water and energy, a backup generator, security, and enough air conditioning capacity. While there was already a patchwork of HIV diagnostics, clinical chemistry, haematology, and CD4+ cell count analysers in situ at national, central, provincial and district hospital laboratories, the programmes expanded and improved access to these essential technologies. We made an effort to supply the same equipment manufacturer and type for all laboratories in compliance with the WHO's Maputo Declaration (2008), promoting platform standardisation across facilities. The standardisation of laboratory equipment made it easier to acquire spare parts, expedite training and maintenance, and lower costs overall through larger orders (Olalere, Gatome-Munyua, 2020). The selection criteria also included the availability of in-country servicing and the expected sustainability of manufacturers, vendors, and platforms. Following the national rapid test algorithm guidelines adopted in Zimbabwe in 2020, HIV tests using Chembio and Syphilis tests were offered for HIV testing (Figure 1). The tie-breaking factor for inconsistent results is INSTI.

The Cyflow Counter or Cyflow II platform for flow cytometry was used to undertake immunologic monitoring of patients' CD4+ cell counts. The manual COBAS Amplicor HIV-1 Monitor test and the automatic were used for EID testing at the NMRL, Mutare and Bulawayo sites and were used to assess HIV VLs in order to track the effectiveness of virologic treatment. Provincial and central hospital laboratories carried out Haematology testing using the Mindray BC-3200 or any other machine similar to that, where a buffer stock would be kept. Unfortunately, due to a lack of funding or commitment from the partner, where drug resistance was supposed to be assessed using the Version 2.0 of the Viroseq Genotyping System (ABI Genetic Analyser 3130) (see Figure 2 below), no reagents were procured for the operationalisation of the machine until it developed some problems.

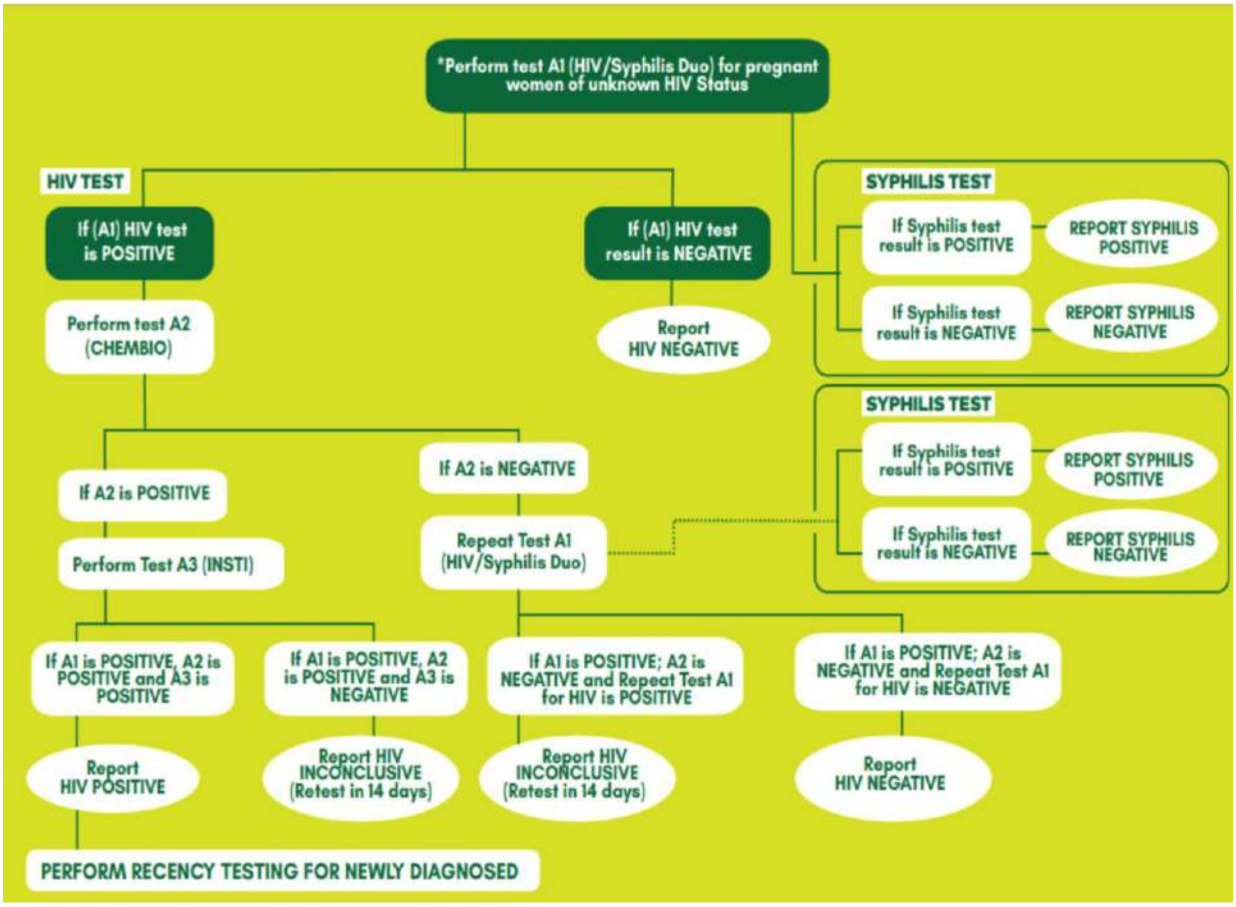

Figure 1. HIV Testing National Algorithm used in Zimbabwe
Source: (Gregson et al., 2021); Quantification Report, (2022)

Figure 2. ABI GENETIC ANALYSER 3130
Source: University of Delaware (2023)

Improvement of the laboratories in Zimbabwe

In many laboratories, improving efficient, logical sample processing requires physical changes to pre-existing buildings or reconfigurations. The ideal sample flow for a laboratory was defined, starting at the arrival bench where samples were logged and divided as required. Aliquots of the sample were then moved to laboratory stations for standard testing such as EID, Bacteriology, Serology, where such names exist, for example at NMRL. Following this, the samples were moved to storage and finally to a station where the results were recorded and delivered to the data entry personnel so that they could be entered into the patients' database in the laboratory information management systems (LIMS). Different parts of the assay process were carried out in separate rooms for more complex tests, such as deoxyrobinucleic acid polymerase chain reaction (DNA PCR), with access limited to trained laboratory personnel in order to reduce the possibility of contamination. The proper handling of biohazard waste was ensured, for example, at NMRL, where one of the VL machines (Biomeriux) was producing cyanide and biosafety and fire preparedness procedures were reviewed and updated. Laboratory security was improved by both physical and signs as provided for in the quality management system, staff trainings were provided for all who work in the laboratory. Laboratory data were kept up to date in accordance with national requirements and kept secure in places with stringent access controls.

The commodity supply perspective

In order to maximise the efficiency of purchasing equipment and consumables, procurement procedures were developed from the government level (Procurement regulations) and the funders' level (SOPs). These procedures ranged from increasing the use of cold chain and non-cold chain reagents and holding regular meetings with local laboratory logistics and to collaborating with Supply Chain Management Systems (SCMS) and the Clinton Health Access Initiative (CHAI) and other funders in order to obtain the necessary test kits. 5 National Pharmaceutical Company (NATPHARM) warehouses were used, two in the south (Bulawayo and Masvingo) and one in the central (National Pharmaceutical Council HQ, Harare) and one in the Western part of the country (Chinhoyi), to keep all the materials for distribution to the laboratory sites. To organise and accelerate the distribution of supplies to the sites, a laboratory logistics manager and a deputy were employed through JSI, and then currently Chemonics, and their offices are situated at the NATPHARM HQ in Harare, where they provide guidance and distribution of all the commodities. They collaborated to do this with NATPHARM, and the transport system is from the NATPHARM side, which sees the other general employees, such as the driver and the assistants, including the warehouse employee and the servicing of the fleet. Recently, due to cold storage commodities for VL and other tests, the Global Fund acquired more cold chain trucks to support the Zimbabwe Laboratory Commodities Supply System (ZiLACoDS).

Training for laboratory personnel

The initial training and mentoring of the central, provincial and district satellite laboratories was largely the responsibility of the national reference laboratory. The national reference laboratory is charged with the responsibility of conducting training for all laboratory staff and reporting issues that require attention to either local site management or higher levels of program management (SADC Secretariat, 2015). The workshops vary depending on the availability of funding for such activity. In the case of the laboratory work, trainings were conducted within a specific laboratory and other workshops were conducted at a chosen central place or two workshops were conducted, one in the northern and the other in the southern region. Trainings on quality issues was done at each laboratory, no matter how far they are with accreditation process, mentors were employed per province and one at the national level. Additionally, other workshops were conducted in different locations (s) and normally had 40 to 50 participants. This kind of gathering was perfect for enhancing laboratory quality overall, discussing modifications to program policy, reaching consensus on decisions, and enabling smaller laboratory groups to work closely with more seasoned peers. Furthermore, funders also helped the laboratory to conduct workshops on a strategic plan where key stakeholders are gathered mainly for one week out of station planning for the laboratory's way forward, and normally this happens at the beginning of the year, guided by a Technical Advisor or Laboratory Services Directorate.

Bioengineering

A good laboratory infrastructure requires regular equipment maintenance, especially in environments with restricted resources. The Global Fund has been responsible for the service contract management of the laboratory equipment, where they would advertise for the local companies representing the various equipment on the ground to provide quotations for the services (Global Fund, 2013). After the approval, the engineers from various companies would go around the country servicing the machines, and the logistics officer has been responsible for overseeing such activities, and the same office confirms whether the machines were serviced or not from the laboratory staff on the ground. Additionally, where equipment parts became an issue, the engaged companies were responsible for sourcing such parts and a duty-free was provided by the Ministry of Health and Child Care, through the logistics office or NMRL (Ministry of Health and Child care, 2022). However, the companies were responsible for making sure that their bioengineers are trained thoroughly by their parent company, such as Becton Dickinson (BD), etc. Most laboratories featured on-site engineers with various levels of specialisation. The engineers were travelling to other sites for predetermined repairs as well as regularly planned periodic preventive maintenance. Furthermore, these companies have been responsible for making sure that they retain and train the engineers to be able to service and maintain the laboratory equipment.

Laboratory information management system

Using LMIS data management team led by the IT Manager, they created an intuitive electronic medical records system that allowed for the consolidation of all laboratory data from the provincial, central and national levels. These important program areas were, whenever possible, connected by local computer networks within each location. Senaite utility software tools were designed to import electronic laboratory results directly into databases when possible or man-made entered using the Data Entry Officers recruited through the Global Fund at the national level, EID centres such as Mutare and Mpilo laboratories, and then scientists in other laboratories (Kruk et al., 2018; Zimuto et al., 2016). The Senaite is an open-source system which is as good as CRM, it can help the laboratory to record laboratory results, to store and management of the same. However, the laboratory in Zimbabwe only uses it for laboratory information systems. Additionally, laboratories are equipped with state-of-the-art computers desktop computers with an internet connection so that laboratory data entered can communicate with the program and use it as a resource.

3. Methods

Laboratories were set up utilising a top-down paradigm, with the National Microbiology Reference Laboratory (NMRL) at the centre supporting Central and Provincial laboratories and basic health clinics (Figure 1). This study adopted a qualitative research method based on secondary data collected from laboratory documentation, including websites such as SADCAS (Butcher, 2022). The study focused mainly on laboratories in districts, provinces and central within Zimbabwe, on the improvements made in support of HIV/TB care in Zimbabwe. The inclusion criteria were that the laboratory is participating in the accreditation process and are at district, provincial and central levels (see figure 3) and is a public health facility. However, the exclusion was that the laboratory is not participating in the accreditation process and the lower-level laboratories such as those stationed at clinics. Additionally, private laboratories were not included in this study. The central and core laboratory is the National Microbiology Reference Laboratory (NMRL) and logistics department are responsible for overseeing these other laboratories, logistics is responsible for the provision of equipment and testing reagents and other supporting commodities, and the NMRL oversees the testing side of these other laboratories and related research institutions that have extensive HIV ART programs (Ministry of Health and Child care, 2022). Haematology, clinical chemistry, and HIV serology tests were all offered by Central and Provincial laboratories under hospital management. Additionally, they may hold plasma samples for viral load (VL) testing and dried blood spot (DBS) samples for early baby diagnosis for up to two weeks before being transported to a related national laboratory. Primary health clinics are smaller medical facilities that offer primary care, test people for HIV quickly, take blood samples for further testing, and refer patients to central or provincial health care institutions (Ministry of Health and Child Care, 2021).

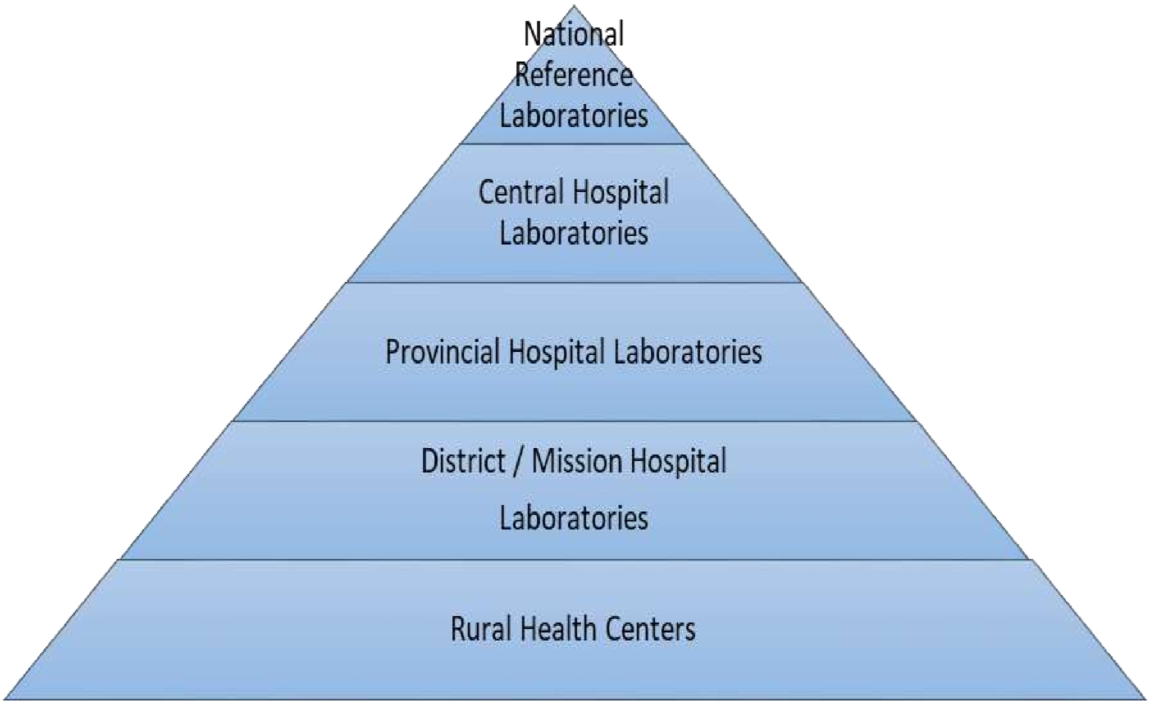

Figure 1: Integrated laboratory Tier System

Source: Adapted from National Health Laboratory Strategic Plan (2021)

4. Results

By 2017, only one public laboratory had been accredited by SADCAS due to great support from various funders (GF responsible for scientists and data officers), SCMS responsible for procurement of commodities to avoid stockouts. Currently, as I write this paper, Zimbabwe is seated at 13 public health medical laboratories accredited to SADCAS and still maintaining their statuses after the assessments and reassessments by the statutory board (Guzel & Guner, 2009). The accredited laboratories are a mixed bag, i.e. the central, provincial and national laboratories (see SADCAS website). All laboratories are housed in permanent structures with running water, electricity, backup generators and solar systems, and other necessities; NMRL and other public medical laboratories underwent significant improvements to ensure smooth operation and long-term sustainability, with funding from various donors. The logical workflow re-modelling of the molecular and level 3 laboratories are two notable examples of successful laboratory reorganisation.

Rapid test methods, automated haematology, clinical chemistry, laser-based CD4+ cell enumeration, VL quantification, and baby DNA PCR diagnosis were and are all used at the provincial and central laboratory sites to offer HIV sero-diagnosis. HIV fast testing, haematology, clinical chemistry, and CD4+ cell count enumeration were all accessible through the central, provincial and district laboratories. With the COBAS AmpliPrep/TaqMan HIV-1 test, version 2.0, the laboratory (NMRL) began switching to automated VL equipment in late 2017. For TB, only two sites had a Hain machine for testing, that is, Bulawayo TB Laboratory and the NMRL, and dedicated scientists were employed through the Global Fund and TB programme (Global Fund, 2013). "We started screening particular groups at two locations for MDR-TB using MTBDRplus test and suggested the Nationwide TB Control program use this test for broader national surveillance", one scientist said. This statement was in connection with TB related scale-up where they started with only two sites which were funded by various donors, but they have since increased to many TB testing sites using current technologies. With the assistance of CHAI and the US Centres for Disease Control and Prevention (CDC) office, laboratories with PCR testing capacity were also able to perform EID testing of DBS samples in support of the national early infant diagnosis (EID) program (Haeri Mazanderani et al., 2017; Sirirungsi et al., 2016). Greater security measures were also added to stock management as reporting to the national logistics is done every first week of the month electronically, the reporting is taken as a consumption monitoring tool, and where an anomaly appears, the responsible laboratory should explain such. Stock cards are in use for every commodity supplied to the station, whether from the donor or the government (Bendavid, 2016; Rechel & McKee, 2012). Test costs were decreased for VL testing performed with manual Roche Amplicor kits and other platforms from as high as USD50.00 to as low as USD14.00, depending on the test performed and the platform (Elsbernd et al., 2022).

5. Discussion

The aim of providing the best possible healthcare was enlarged by the training and mentorship activities beyond enhancements of certain laboratory services to support the ongoing ART programmes. The programmes aimed to go beyond ART delivery and include the advantages of new equipment technologies and procedures throughout the hospitals and clinics. For instance, different hospital departments were allowed to employ portable TB-diagnostic X-ray equipment because of the donor support. We discovered that using training-of-trainer and step-down training methods was a very cost-effective method of distributing training throughout program laboratories and local laboratory systems and this was a similar approach taken in quality management systems, which have seen many laboratories being accredited to SADCAS.

Centralised laboratory conferences improved communication between laboratory staff and program administration. The program personnel had continuous assurance of standardisation across all program laboratories thanks to these central administration and partners who continuously fund the laboratory sector (Church & Naugler, 2019). Now with the coming in of social media technology, the staff in the set-up can share the success story and challenges, easily assist each other with problem solving, which has seen an upward performance of the laboratory services and the programme managers.

These regional trainings covered a wide range of topics, including reorganizing the laboratory staff, beginning a trial of a new diagnostic point-of-care platform, and troubleshooting an assay that was performing outside of expectations, coordination with clinical and pharmaceutical training teams was sought in order to increase and inform laboratory members of any updates to other program areas that could have an influence on laboratory operations, such as the introduction of new medications or drug regimens with a special toxicity concern, and to incorporate laboratory issues into their trainings (Ferrando & Lorenzo-Seva, 2018; Hamel et al., 2015b; Kruk et al., 2012). Laboratory logistics unit always make sure that the breakdowns are kept to a bare minimum as a way of avoiding expiries, which means they are actively engaging the suppliers who are responsible for the equipment dotted around the country. This makes sure that sustainability is always maintained, as well as a cost-cutting measure. Where there are concerns, the Directorate of Laboratory Services and the partners work together to find lasting solutions.

Both computerised data capture and better test results distribution to clinical staff and patients saw notable improvements. The possibility of transcription errors was reduced through the employment of data capturers funded by the Global Fund (Global Fund, 2013). When compared to the previous technique, which exclusively used handwritten logs and was done by the scientists, the inclusion of data captures decreased the turnaround times for laboratory results by a good number of days. The ability to make changes quickly as laboratory technology advanced was one benefit of developing a laboratory-specific database system called the laboratory information system. The creation and implementation of an electronic database for gathering patient laboratory information and then sending reports across local networks to the clinic was one of the benefits of a laboratory information system (Ajzen, 1991; Ferrando & Lorenzo-Seva, 2018; Hamid et al., 2022). The tools provided quick results transmission from the laboratory to clinics, as well as to the patient is also advised to visit the clinic through an SMS stating that your results are out visit the clinic for assistance. The communication of laboratory results to the clinical decision-making team and the patient was one of the missing links in HIV, and therefore, the patient will be helped to maintain adherence to the treatment regimen.

6. Conclusion

The laboratory performance system in Zimbabwe has improved so much compared to the early 2000s years when it was difficult to find HiV/AIDS/TB testing centres and a lack of personnel (Dupwa et al., 2019; Elendu et al., 2025; Isah, 2025). Currently, the workload is being shared with the help of partners and donors who have managed to maintain the procurement of commodities and services, recruitment of qualified personnel from scientists to support staff. Several public health medical laboratories are accredited to international standards (ISO 15189). This progress has a positive influence, and this research would encourage the policy makers to look at the whole health system to move in the same direction with the laboratory services. The study concluded that improving laboratory performance assists the government as it moves closer to meeting its 2030 agenda, mainly SDG 3. Additionally, the study has concluded that the government of Zimbabwe should not fold hands, but should take the gesture by the donors to improve their funding capacity such that when some of them pulls out like what happened with USAID and PEPFAR, the government would be in a position to take over the whole system and maintain the standards set up by the donors and partners.

Study Limitation

The study did not collect data from the users of the laboratory system but used various websites and documents available to support the objective of this study. I would think that maybe if the data were collected from the laboratory service employees and users of the services, the results may be a bit different, however, the websites used are well-trusted sources across the African region. The paper is limited to the current settings with the Zimbabwe laboratory landscape considering that some donors such as PEPFAR, USAID were disbanded by the United State of America President recently. This may have implications on the gains laboratory had gained through the years (Akingbola et al., 2025; Meyer-Rath et al., 2025). Additionally, this paper is not a systematic review or meta and may not capture the full landscape of the laboratory services in Zimbabwe and around the world.

Conflict of Interest

I declare that no conflict of interest regarding this paper.

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