

Challenges and trends facing medical labs in Africa in 2023

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Amid rapid urbanisation on the continent, medical laboratories have struggled to meet the growing demand for healthcare services. This is often due to a lack of resources and inadequate diagnostic services that exacerbates healthcare challenges such as misdiagnoses, and the under or over-treatment of diseases.

Inadequate Public Funding and Infrastructure for Healthcare System

South Africa's healthcare system faces challenges from inadequate public funding and poor infrastructure, particularly in rural areas. These issues limit the efficiency of healthcare delivery and contribute to a shortage of medical personnel. Economic segregation and persistent social inequality exacerbate these problems, with a significant portion of the population not enjoying adequate access to healthcare services.

Collaboration between government and non-state actors is crucial to address these challenges.

Need for Unique Patient Identifiers

Despite advances in laboratory medicine, data quality and patient demographics remain a challenge in Africa, according to South Africa's National Health Laboratory Service (NHLS). Inaccurate capturing of patient demographics, especially for infants and children, hinders the monitoring of routine health programs.

A unique national patient identifier, distinct from the national ID number and available at birth, has been proposed as a solution.

Supply Chain Disruptions in Laboratory Medicine

Supply chain disruptions pose severe risks to the laboratory medicine sector, affecting the delivery of essential diagnostic tools, reagents, and equipment. These challenges may lead to increased emphasis on local production and sourcing, as well as the development of innovative solutions to minimise the impact of disruptions on laboratory services. Actors in this sector will need to be agile and adaptive, implementing

robust contingency plans to ensure continuity of services during periods of supply chain instability.

Advancements in medical technology are significantly influencing laboratory medicine, potentially transforming diagnostics, research, and treatment processes.

The advent of technologies like 5G, artificial intelligence (AI), big data analysis, and algorithm development, are enabling greater focus on personalised care. These developments offer many potential benefits for communities in Africa.



Key technology trends impacting the laboratory medicine sector in 2023 include:

AI and ML Expansion: Artificial intelligence (AI) and machine learning (ML) are revolutionising laboratory medicine by streamlining diagnostic processes, improving accuracy, and reducing errors. These technologies enable the rapid analysis of large datasets, assisting in disease prediction, personalised medicine, and treatment planning.

Connectivity in the Medical Technology

Space: The Internet of Medical Things (IoMT) is driving innovation in laboratory medicine by connecting medical devices, enhancing data collection and analysis and improving remote patient monitoring. This connectivity allows for real-time data sharing among healthcare providers, laboratories, and patients, ultimately contributing to more efficient patient care.

Big Data in Laboratory Medicine: The increasing availability of large-scale datasets in healthcare is driving innovation in laboratory medicine. By leveraging big data, Medical laboratories can optimise patient therapy, lower diagnostic costs, and enhance patient welfare through predictive analytics and personalised medicine.

Promising research is underway to reduce manufacturing and marketing expenses, with local production showing potential. While South Africa currently lacks commercial-scale production capacity for

protein therapeutics or vaccines, academic research groups such as the University of Cape Town have made progress. The Council for Scientific and Industrial Research (CSIR) is actively working on developing new technologies and capabilities to improve manufacturing competitiveness and productivity in South Africa. The CSIR's initiatives in advanced materials engineering, industrial sensors, and photonics look set to contribute to the growth of the country's biopharmaceutical manufacturing capabilities.

As in previous years, Africa Health Exhibition 2023 - as well as the co-located Medlab Africa conference - will highlight the importance of laboratory medicine; foster innovation and collaboration; and showcase cutting-edge methodologies and technologies. More information at: africahealthexhibition.com/medlabafrika



To learn more about the African medical laboratory industry, **join us live, in-person in Johannesburg, South Africa from 17-19 October 2023**

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