

UGANDA'S DIGITAL HEALTH REVOLUTION

By John Musenze

When Christine Nakaayi was diagnosed with diabetes three years ago, her most important medical document was not a lab report or prescription, but a small exercise book she carried everywhere. Every hospital visit meant pulling it out for doctors to read her handwritten history if the book had not been lost or replaced along the way.

"Sometimes the book would go missing and they would give me another one. Doctors would ask me to explain my past treatment again, but some did not understand what I was saying and others could not read what was written. Now they know my history by just checking in any computer in any department I go to. I don't have to explain everything again," Nakaayi, a 55-year-old resident of Kisaasi, said.

ELECTRONIC TREATMENT HISTORY

Today, Nakaayi, just like millions of Ugandans, no longer carries that book. Her medical records are now on a computer system that alerts health workers when she misses an appointment and allows clinicians to see her treatment history instantly. For her, the shift has meant fewer explanations, fewer delays, and more confidence that her care is consistent.

Nakaayi's experience reflects a broader, largely quiet transformation underway in Uganda's health sector, the move from paper-based records to a national digital health infrastructure that allows patient data to be captured, stored and accessed electronically across health facilities.

For decades, a visit to a public hospital in Uganda meant piles of manila files, worn-out patient cards and clinicians relying on memory as much as documentation. Today, across referral hospitals, general hospitals and selected primary health centres, computers are steadily replacing exercise books as patient information begins to move at the speed of a click.

DIGITAL PUBLIC INFRASTRUCTURE

The roll-out of Electronic Medical Records (EMRs) launched in 2023 as a core component of Digital Public Infrastructure (DPI) in the health sector. DPI refers to foundational digital systems such as digital identity, data registries and interoperable platforms that support the



Nurses in hospital working on a patient by looking at the data in their electronic system. Today, across Uganda's general hospitals and selected primary health centres, computers are steadily replacing exercise books where medics relied for handwritten treatment history for patients



Naguru National Referral Hospital executive director Dr Irene Nayiga

delivery of essential public services.

"An EMR is simply a digital system for managing patient records instead of paper," explained Jamiru Mpiima, a digital health specialist and head of department at the Ministry of Health.

"But its impact goes far beyond record keeping. It affects patient care, medicines management, accountability, planning, and future reforms like national health insurance."

NATIONAL ROLL-OUT

According to the Ministry of Health, EMRs have already been deployed in most high-level public hospitals.

Out of 84 targeted facilities, including national referral, specialised, regional referral, and general hospitals, 80 are currently using the system.

All 16 regional referral hospitals are live, alongside four national referral hospitals, such as Kiruddu, Naguru, and Kawempe, as well as specialised institutions including the Uganda Cancer

GAINS OF DIGITALISATION

Naguru National Referral Hospital, is one of Kampala's busiest medical facilities. This hospital's executive director Dr Irene Nayiga, said one of the most immediate gains from health digitalisation has been in medicines management.

"If I give a patient five Panadol tablets, the system deducts them immediately from the store inventory," Naiga said. "At any point, we know what is in stock, what is moving fast and what needs restocking. That helps us control stock-outs."

Nationally, the Ministry of Health reports that 99% of prescriptions are now electronic, with 94% of dispensed medicines matching the original prescription which helps the National Medical stores to supply hospitals that are soon stocking out.

Naiga also highlighted that the new systems are also changing how health workers are monitored. "You can log in, but the system shows how many patients you actually saw," Naiga noted, adding that it improves performance management and fairness.

Ministry data shows that digital tracking has reduced patient length of stay by up to 60% in some hospitals, cut paper-based laboratory requisitions by 90% and increased patient satisfaction from about 20% to 60%.

Institute.

The digital footprint is now extending beyond hospitals. At the primary healthcare level, 51 Health Centre IVs and five Health Centre IIIs are already using EMRs. By 2028, the Government plans to cover all 15 health regions, bringing more than 1,400 facilities onto the digital platform.

"This is a phased approach. We started with referral facilities because of their complexity and patient volumes, and we are now scaling downwards," Mpiima said.

VISIBLE TRANSFORMATION

At Naguru National Referral Hospital, one of Kampala's

busiest facilities that serves four million people, the transformation is already visible.

"When a patient arrives, they are registered digitally, their biodata is captured, and they are directed to the appropriate clinic," Dr Irene Nayiga, the hospital's executive director, said.

"From the nurse to the doctor, the lab and the pharmacy, everything happens within the system."

PATIENTS' DATA CONFIDENTIALITY

Each patient is assigned a unique hospital identification number, which health workers use to document medical history, examinations,

laboratory requests and prescriptions.

"Access to patient data is tightly controlled," Dr Naiga explained.

"A nurse only sees nursing information. A lab technician only sees lab requests. Not everyone can see everything, and that protects patient confidentiality."

Beyond individual hospitals, EMRs are strengthening national health planning by feeding real-time data into central dashboards.

"With accurate, timely data, we can make evidence-based decisions," Mpiima said.

"You can see disease patterns, service utilisation, and workforce performance across facilities."

This digital data backbone is also expected to support broader reforms, including the long-awaited National Health Insurance Scheme, which will depend heavily on reliable patient records and service data.

In the long term, officials say the system is being designed to link with other public digital systems, including national identification databases, allowing for secure patient identification while reducing duplication and fraud, a key principle of DPI.

CHALLENGES

Dr John Kauta, the Commissioner for Health Services in charge of Health Information Systems at the Ministry of Health, said limited digital literacy is a major barrier.

"Some health workers and patients are still not comfortable with digital systems, especially

in rural areas," Kauta said.

A number of facilities also lack dedicated staff, making it difficult to troubleshoot system failures. Infrastructure gaps, including unreliable electricity and weak internet connectivity, continue to disrupt services in parts of the country.

"Sometimes you have more staff than computers," Naiga said. "Everyone must in with their own credentials, so sharing hardware can slow work."

Privacy and data protection concerns also remain central, particularly as sensitive health data becomes digitised.

ADDRESSING THE GAPS

Experts warn that strong governance, clear accountability, and public trust are essential to ensure that digital health systems serve patients without exposing them to harm.

Dr Kauta said they are addressing these gaps through staff training, recruitment of ICT officers, investment in solar power and backup systems, and EMR designs that can function offline when internet connectivity fails.

"We are building a resilient, interoperable, and sustainable digital health ecosystem," Kauta said.

"The goal is that a patient walk into any public hospital in Uganda, and their medical history can be accessed securely by just having their hospital number."

This year alone, additional primary health facilities are expected to join the system, with hundreds more to follow subsequent