



U L W E M B U
Business Services



Data-driven healthcare: Enhancing the wellbeing of South Africa's people

Digital health technology might not necessarily be a cure-all for COVID-19 or other pressing health issues, but it has certainly proven its worth during the pandemic. Many countries across Africa have seen a tremendous increase in people engaging with digital health services via their smartphones over this time, with 41 percent of African internet users regularly using their mobile phones to search for health information.

And this trend is set to continue, as smartphone reach in sub-Saharan Africa, in particular, is expected to increase by almost 70 percent by 2025.

“Digital health holds great promise for South Africa, and we've already seen several local municipalities getting on board with the National Department of Health's National Digital Health Strategy for South Africa 2019 – 2024,” states Palesa Motsamai, Project Manager at Ulwembu Business Services, a South African black-owned ICT services company.

According to the National Department of Health, its digital health strategy will “benefit patients seeking access to healthcare services, healthcare workers to provide better services, and health systems managers to fulfil their role, empowering all citizens to better navigate their personal health journeys using digital technologies.”



Not only is uHMS the most cost-effective eHealth solution available in the market, but it is the first open source eHealth application for clinics in South Africa, in line with government's mandate on using free and open source software. It is also the first eHealth application that can operate offline.

The plan's objectives include:

- the development of a complete electronic records management system;
- digitisation of health systems business processes to improve efficiencies and quality at an institutional level (such as human resource, medicine access and so on);
- the establishment of an integrated platform and architecture for health sector information system which will also ensure interoperability and linkage of existing patient-based information system;



Unlike all major healthcare systems, uHMS can be configured to work either online or offline, offering functionality to areas where connectivity is challenging. Health districts with a mix of rural and peri-urban facilities can select from either offline or online capabilities, or a combination of both deployment options.

- scaling up high-impact mHealth (mobile health) for community-based interventions;
- the expansion of health promotion coverage to vulnerable groups such as the children, the elderly and women;
- and the development of digital health knowledge workers working to support digital health as well as economic development.

“Ulwembu has been working closely with two municipalities to help them to navigate health software development and the integration of ICT devices, medical devices and wearables; all the while working towards achieving prescriptive health informatics and total management of patients in anticipation of the rollout of National Health Insurance (NHI),” says Motsamai.

The Ulwembu Health Management System (uHMS) is an end-to-end system for both primary and tertiary healthcare, offering interoperability with other health solutions and devices in line with the international health normative guides.

“Not only is uHMS the most cost-effective eHealth solution available in the market, but it also delivers on two other keys advantages. Firstly, it is the first open source eHealth application for clinics in South Africa, in line with government's mandate on using free and open source software.



Palesa Motsamai, Project Manager at
Ulwembu Business Services

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The full uHMS solution comprises:

- eHealth consulting, where districts are advised on the development of an eHealth strategy, as well as an eHealth business architecture;
- Core clinics eHealth application;
- Mobile clinics application for municipal ward-based outreach teams;
- Ward-based outreach teams (WBOTs) application;
- Integrated schools health team (ISHT) application to bridge the gap between school health interventions and clinic health problem management;
- A full pharmaceutical stock management and dispensary module;
- Automated district health information software (DHIS) reporting functionality;
- Integration to wearables; and
- eHealth on the cloud and operational support.

uHMS encompasses a full technology assessment of the client's existing ICT infrastructure through its eHealth Infrastructure HealthCheck tool. This includes end user devices, networking/connectivity of facilities, existing data centre capabilities, integration services, and ICT operations support for the primary healthcare facilities.

“And with clinic nurses often working with both digital and paper-based files in environments that may not offer end-to-end functionality, our system is also able to cater for both digital and paper-based operations where information is transcribed onto the system using smart pens and Livescribe technology. Paper-based information is digitalised and integrated directly into the system. As a result, nurses can continue working on paper; they can make notes on electronic files without needing to use a keyboard and don't require extensive training to use the system.”

“Ulwembu's ongoing eHealth solution development will result in an information-driven system that will help make district health predictions possible, map the clinic catchment population disease profile, enable stock

consumption prediction, and enhance health workforce capacity planning through tabulating visit trends,” Motsamai continues.

“It will integrate with hospitals, the NHLS (National Health Laboratory Service) and the Department of Home Affairs, facilitating the rapid communication of medical information such as test results, patient verification, and ultimately sharing patients' health electronic record (HER) through an open source driven HL7 (Health Level Seven International) engine.

“The advantages of an integrated healthcare system are extensive, ranging from reduced turnaround and queuing times, more accurate diagnoses and treatments using a CDSS (clinical decision support system), and an enhanced and more positive patient experience.

“It has been proven over time that digital health can potentially help prevent disease and lower healthcare costs, while increasing patient empowerment. Ulwembu fully supports the National Department of Health in its objectives of creating a healthier, more digital-savvy nation,” she concludes.



For more information on the Ulwembu Health Management System, please visit
<https://www.ulwembubs.com/ehealth.html>

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