



SOUTH AFRICA



2015 Statistics

- » Life expectancy: 49.6
- » Population: 53.3 million (2014 est.)
- » GDP per capita: US \$11,500 (2013 est.)
- » Mobile penetration: 141.4% (2015 projection)

Sources: CIA World Factbook (<https://www.cia.gov/library/publications/the-world-factbook/>); Mobile penetration data provided by Ovum World Cellular Information Service and based on market intelligence.

I work on antenatal care, but when I make physical diagnosis, patients with other conditions such as herpes zoster come. I find information from the mobile phone about managing such conditions. I recommend that it should be extended to other facilities especially rural areas.

— **Khuluma Mnanzwa, Nurse,**
Port St. John Health Clinic

Mobile Health Information System: Access to Information for Health Care Workers

In South Africa, access to relevant health literature and broadband Internet access is limited. To address this problem, nurses and doctors in the Eastern Cape were able to use 3G wireless technology to overcome access-to-information challenges, thereby providing better care to their patients. With the help of the Mobile Health Information System (MHIS) — Internet-capable, commercially available smartphones and tablets pre-loaded with a locally relevant, reliable clinical library — nurses and doctors were able to access much needed information at the point of care. Doctors in tertiary and district hospitals were equipped with tablets and nurses in rural community health centers used smartphones for information access.

Challenge

- » Every day, people in Sub-Saharan Africa die unnecessarily from infectious diseases, including malaria, tuberculosis, HIV/AIDS, pneumonia and diarrhea. Chronic lifestyle diseases can also burden fragile health systems.
- » In South Africa, a small amount of the population has Internet access. Prior to the MHIS project, many doctors and nurses, particularly those in rural areas, could not access the Internet for life-saving information and clinical content for patient management. They were isolated from the global conversations on health, not able to keep abreast of the latest information on epidemics or access clinical content for patient management.
- » Enhancing health care workers' access to relevant clinical information was vital to improving health service delivery.

Solution

- » MHIS tapped into the power of mobile technology to overcome barriers to Internet access and information.
- » Designed to support the delivery of comprehensive and improved patient care, the mobile library included digitized medical guidelines, protocols, diagnostic tools, and drug formularies.

Impact

- » A research study of the MHIS project was conducted by Nelson Mandela Metropolitan University/School of Clinical Care Sciences to investigate the impact of accessing health information at the point of care via mobile devices.
- » The information obtained was used to make recommendations to the Eastern Cape Department of Health (ECDOH) about further expansion of the use of mobile devices in health care practices.
- » Of the surveyed nurses and doctors, being able to access health information at the point of care assisted:
 - ° All nurses and more than 80 percent of doctors in making an accurate diagnosis;
 - ° All nurses and more than 92 percent of doctors in prescribing the correct treatment

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- for their patients;
- 96 percent of nurses and more than 80 percent of doctors in prescribing the correct medication dosage;
- All nurses and approximately 81 percent of doctors in reducing patient mortality.
- » Nurses and doctors used information in the mobile library to empower patients, provide correct and up-to-date information use regarding their health conditions and treatment, update their own knowledge regarding the management and treatment of various conditions and provide colleagues and peers with correct information upon request.
- » Information provided in the mobile library was used by:
 - More than 97 percent of nurses and 81 percent of doctors to provide relevant information to patients with regard to their health conditions and treatment;
 - More than 97 percent of nurses and 76 percent of doctors to provide up-to-date information to patients;
 - 96 percent of nurses and more than 76 percent of doctors when they were not sure of what treatment to give their patient;
 - All nurses to update their own knowledge regarding the management and treatment of various conditions.
- » At a project showcase event in 2013, project stakeholders announced that the MHIS program would be sustained with the ECDOH by providing up to 1,000 new devices to future users after the completion of Wireless Reach's grant funding.
- » MTN South Africa also committed to continue adapting their services to meet the needs of the MHIS users by offering discounted devices and airtime to help expand the base of participating health care providers.

Project Stakeholders

- » Eastern Cape Department of Health developed a Business Case for the project, provided project coordination and technical support for the nurses and doctors, and now manages the MHIS project, including user management and content management of the mobile health library.
- » FHI 360 TechLab, conceptualized the project, led its implementation, created the mobile library, trained participating nurses and doctors in the use and application of the mobile devices for improving quality of health care delivery and transferred technical skills to ECDOH staff to maintain the system.
- » MTN South Africa, as the wireless network provider, offered technical expertise for wireless communication services throughout the project. They were also a co-funder through in-kind donations and by offering equipment and services at below-market costs.
- » Nelson Mandela Metropolitan University/School of Clinical Care Sciences conducted the initial information needs assessment and a comprehensive evaluation study. After the positive pilot phase results, they also incorporated the mobile devices into their nursing curriculum.
- » South Africa Partners provided logistical and administrative support to the project.
- » Qualcomm Wireless Reach co-funded the project and provided management and technical support for the project's first and second phases.



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