



Partners

- Axesstel, Inc.
- Communications Commission of Kenya
- Dell
- Nairobi Provincial Medical Office, part of the Ministry of Medical Services of Kenya
- RTI International
- Telkom Kenya

2010 Statistics

- Life expectancy: 58.82 years
- Population: 40,046,566
- GDP per capita: USD 1,600
- Internet penetration: 10%
- Mobile penetration: 55.13%

Sources: CIA World Factbook (<https://www.cia.gov/library/publications/the-world-factbook/>); Mobile penetration data provided by Informa UK Limited and based on market intelligence. Internet penetration data provided by www.internetworldstats.com and based on data published by Nielsen Online, the International Telecommunication Union, GfK, and local regulators.

Case Study

Using 3G Wireless Technology to Provide Timely Medicine to People with HIV/AIDS

HIV/AIDS is one of Kenya's most pressing health concerns and offering Antiretroviral Treatment (ART) is a key component of the government's strategy to reduce HIV/AIDS-related morbidity and mortality. The delivery of ART for HIV/AIDS patients is compromised by ineffective pharmaceutical and patient records management. Qualcomm's Wireless Reach[™] initiative in collaboration with Telkom Kenya, Communications Commission of Kenya, Dell, RTI International and the Nairobi Provincial Medical Office, is executing a project to reduce the administrative burden on health care workers and improve patient care by strengthening pharmaceutical management systems for ART utilizing 3G technology.

Challenge

- Recent data show that the rate of HIV in Kenya is 6.3 percent. This translates to approximately 2.6 million Kenyans living with HIV.¹
- Public health facilities in Nairobi face challenges such as human resource constraints, tedious manual reporting, and time-consuming physical delivery of monthly reports and medication orders to the Logistics Management Unit (LMU) and the Kenyan Medical Supplies Agency (KEMSA). Prior to project implementation, it took an average of 11.6 hours to compile three monthly reports, and eight hours to deliver these reports.
- Information and telecommunications capabilities at the health centers providing ART are limited to VHF radios with no official telephone line connections. This hampers the ability of health workers to communicate with KEMSA and consult with other health workers, particularly pharmacists, at district and provincial levels.

Solution

- In the past, health workers needed to hand-write inventory on paper, calculate the orders each month and spend time traveling to KEMSA to drop off orders of antiretroviral (ARV) drugs.
- The Wireless Reach project uses 3G wireless connectivity to provide efficient ART tracking and adherence monitoring, as well as reliable information for tracking ARV inventory. This improves patient care for underserved, resource-constrained communities by incorporating an appropriate information and communications technology system.
- Twelve participating health care sites that receive their ARTs exclusively from KEMSA in Nairobi have been provided computers, software and support equipment for wireless connectivity on Telkom Kenya's 3G CDMA EV-DO Rev. A network.
- The Zcore-DAR software developed in the project automates the manual reporting system and the newly converted electronic reports can now reach KEMSA quickly via email.
- With the immediate improvements in efficiency and accuracy of reporting, pharmacists are able to concentrate on more in-depth tracking of ART adherence and patient care.



The Technology

- Mobile broadband connectivity via Telkom Kenya's 3G CDMA EV-DO Rev. A network.
- Computers supported by an uninterrupted power supply and Axesstel wireless routers, which use Qualcomm's 3G wireless technology.
- Zcore-DAR Software – an open source antiretroviral reporting software system based on the Kenyan Government's existing paper-based ART management tools, the software allows real-time collection of drug dispensation data, automated reporting and email reports to KEMSA, the District and Provincial Pharmaceutical Officers.

Results

- The timely submission of reports increased by 50% and the percentage of facilities completing reports at the time of dispensing increased 70%.
- The average time taken to complete the data entry per patient decreased from 7.5 minutes to 2.8 minutes.
- The average time taken to compile three monthly ART reports decreased from 11.6 hours to 29 minutes.
- The percentage of facilities delivering reports by hand decreased 100% and average transportation costs incurred by the health worker to deliver the reports was reduced from 140 Kenyan shillings to zero.
- The average time spent on delivery of reports to KEMSA was reduced from eight hours to five minutes.

Project Partners

- **Axesstel** donated 3G wireless routers.
 - **Communications Commission of Kenya** facilitated the donation of computing equipment.
 - **Dell** donated computers.
 - **Nairobi Provincial Medical Office, part of the Ministry of Medical Services** is the project beneficiary and helps with project implementation and training of the pharmacists.
 - **Qualcomm's Wireless Reach™ initiative** acts as the primary funder and provides project management support.
 - **RTI International** developed the Zcore-DAR software and worked with the Ministry to identify project sites and complete staff trainings.
 - **Telkom Kenya** provides the 3G mobile broadband connectivity.
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Pharmacists working on the new 3G enabled system.

¹ CIA World Factbook: <https://www.cia.gov/library/publications/the-world-factbook/geos/ke.html>

Qualcomm's Wireless Reach™ Initiative

Qualcomm believes access to 3G and next-generation mobile technologies can improve people's lives. Qualcomm's Wireless Reach initiative is a strategic program that brings wireless technology to underserved communities globally. By working with partners, Wireless Reach invests in projects that foster entrepreneurship, aid in public safety, enhance the delivery of health care, enrich teaching and learning and improve environmental sustainability. For more information please visit www.qualcomm.com/wirelessreach.