



Zambia



Describe a successful or challenging e-health initiative your country has taken.

The e-health initiative in the country is that of putting personal information on a very secure credit card appearing device and giving it to the patient to present to the clinician the next time they seek care. The Patient Information System involves making a touch screen computer tool for the clinician to use in viewing and recording patient data. This data is the patient's Electronic Medical Record (EMR), and a client database is kept at facilities visited.

SmartCare as it is known, is a joint project, funded mostly by the Government of the Republic of Zambia and the U.S. Centers for Disease Control and Prevention (CDC), to create an electronic medical record system for the people of Zambia. SmartCare's vision is that "each person in Zambia has a complete electronic health record that is used to assure them of a continuity of high quality confidential care, by providing timely information to caregivers at the point of service and to health policy makers through integration with the national Health Management Information System (HMIS).

"SmartCare is working through its cooperating partners to improve service delivery, patient care, and health data accuracy and reliability." The project has entered its sixth year of operations.

A critical milestone for the project, the Ministry of Health (MoH) designated SmartCare as the national Antiretroviral Therapy (ART) care system in April 2006. From this point forward, SmartCare has intensified its efforts to integrate parallel health information management systems and scale up operations nationwide.

What were the financial challenges and costs associated with implementation of this programme?

The sustainability of this project is based on its capacity to make paying the high cost of ARV's more sustainable than it would be without the card. A card currently costs about \$1.50, and will last many years or until lost or destroyed. One can discourage loss or destruction by a replacement fee. (Currently the replacement fee for the UTH ART ID card is about \$5.) The card costs are significantly larger than the touch screen computer, UPS, and printer costs.

A person on ARV's may use \$200/year of drugs alone, on a first line regimen, and as much as \$1,800/year on a second or third line regimen, and failing that, may have no further recourse. If only one out of 100 issued cards delays the development of line 1 resistance by only 1 year, the \$1,600 savings would easily make the issuance of cards a major money saving strategy.

And it would also be saving lives by delaying progression to full resistance.

Resources were placed in a JHPIEGO Cooperative Agreement that can support training, travel, and other related special costs for Phase I effort, including hiring people to minimize or eliminate any net burden on current clinical operations or to assist with early monitoring and evaluations.

If this effort appears to contribute significantly to Zambia's need, USG has budgeted additional monies that would support the implementation.

Implementation partners are deploying and are providing resources such as equipment and personnel.

What have been the main technological challenges to implementing e-health in your country?

The main technological challenges have been:

- ✦ *Relatively low technology requirements: SmartCare only requires intermittent electricity and no telecommunications infrastructure to function.*
- ✦ *The deployment of computer equipment in health facilities, training of DHMT management, District Health Information Officers, Hospital Information Officers and the health facility staff such as the nurses, with the latter personnel being made computer literate.*

- ✦ *Maintenance of computer equipment and the provision of computer virus software updates in a non WAN environment.*
- ✦ *Introducing a lock-down policy so that misuse of computer equipment is addressed, for example disabling media player.*

Have any ethical issues been raised during the design and implementation of e-health programmes?

Ethical issues have been raised, and among others have been the introduction of a pledge of confidentiality form, which must be filled in by all users of the application and signed upon reading its contents. This must be filled by developers as well. For example, pledging the following:

- ✦ *Accepting the responsibility to maintain and protect the confidentiality of all information and data collected and processed for the Health Facility.*
- ✦ *I understand my role in ensuring the right to privacy of persons and institutions cooperating with the health facility and the Ministry of Health as a whole.*
- ✦ *I understand that the Ministry of Health has and will enforce policies that protect patient rights to privacy regarding their personal and medical information.*
- ✦ *I understand that I must not reveal any confidential information to anyone except another staff member authorized to receive such information, and will not discuss patient information in public.*
- ✦ *I understand that there are legal and ethical obligations to protect the privacy of patients and their personal and medical information.*
- ✦ *I understand that failure to protect the confidentiality of patients, personnel and medical information will result in disciplinary action up to and including dismissal.*
- ✦ *I understand that any willful violation of the confidentiality policy may subject me to legal action beyond my association with the Ministry of Health.*
- ✦ *I have read and understand the above confidential policy and procedures and pledge to act in accordance with these policies and procedures.*

Has the implementation of e-health programmes required any legal or regulatory changes?

The Ministry has issued policy guidelines to cooperating partners and implementation partners regarding;

- ✦ *Ethics and confidentiality*
- ✦ *Resource leveraging*
- ✦ *Capacity building for sustainability*
- ✦ *Software version harmonization*
- ✦ *Data sharing*

What have been the outcomes of your e-health initiatives

The outcomes for this initiative have been:

- ✦ **Reduced Staff Workload:** *With less time spent on looking for old or misplaced paper files and trying to read bad handwriting, doctors and nurses have more time to focus on what is most important, the patient.*
- ✦ **Improved Confidentiality of Patient Medical Records:** *A 'CareCard' being carried by a patient is significantly more secure than them carrying around paper records. Other role-based security controls have been put in place within the SmartCare system to restrict access to individual patient data to those who truly require it.*
- ✦ **Reduction in Paperwork:** *SmartCare eliminates the need to maintain patient identifiers and HMIS tally sheets:*

- ✦ *As of 31 December 2007, about 15,000 patients are carrying 'CareCards' nationwide.*
- ✦ *As of December 2007, there are 45 sites treating 15,000 patients using the ANC/PMTCT, Delivery, and VCT SmartCare modules.*
- ✦ *As of December 2007, there are more than 84 sites serving more than 120,000 patients using the ART modules.*