



SPOTLIGHT: MHERO AS A DATA COLLECTION TOOL FOR HEALTH INFORMATION SYSTEMS STRENGTHENING

December 2015 | Amanda Puckett BenDor

West Africa's 2014 Ebola outbreak highlighted the fragility of the health systems in Liberia, Guinea, and Sierra Leone. Specifically, the countries' health information systems (HIS) lacked the sophistication and power to sufficiently support robust disease surveillance, management, and response.

One of the greatest HIS challenges during the Ebola response was the lack of platforms and tools to support data collection and data for decision-making. If more information had been available faster, such as if health workers needed more personal protective equipment and testing supplies, perhaps the response could have taken place faster and more lives could have been saved.

The global community and national leaders are eager to learn from what went wrong and to improve HIS going forward. Through careful coordination, innovative thinking, and responsible planning, there is now a strong agenda to support an HIS architecture that will be robust and sustainable as the Ebola-affected countries rebuild and recover.

A MORE RESILIENT HEALTH SYSTEM

As Liberia and the other affected countries transition into the recovery phase, the US Agency for International Development (USAID) is aiming to build more resilient health systems, ensuring they are stronger and more robust than before the outbreak. USAID engaged the MEASURE Evaluation Project to provide technical assistance to the Ministry of Health in Liberia in August 2015 to strengthen their health informatics capacity. The goal was to develop an HIS strategy as well as outline processes for HIS integration.

In order to determine what should be built, it is necessary to understand what currently exists. Knowing just what systems are in place, which ones work and how these systems are used can help define limitations and articulate strategies for improvement. As part of the MEASURE technical assistance, a group of stakeholders were embedded in the Ministry of Health to thoroughly assess Liberia's health information systems and information and communications technology (ICT)



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infrastructure. The assessment, conducted at the national and subnational levels, was designed to help the government develop and realize its ideal HIS strategy.

The assessment designers worked hard to create data collection tools, identify data collection points, and systematically collect data. Romain Tohouri, a health management information system (HMIS) developer who has worked with the Ministry of Health in Liberia since before the Ebola outbreak, was one of the technical advisors embedded at the ministry to support the HIS strengthening activities and assessment. His wealth of experience working with stakeholders to implement DHIS 2 and better utilize health information system interoperability made him a valuable partner.



“mHero is a great tool and there is great potential here.” —Romain Tohouri

To initiate the assessment, Romain and his colleagues evaluated existing tools, but nothing was quite detailed enough to capture the information they needed for the ICT part of their assessment. “So we set out to design something,” he says. “We created something to assess what infrastructure was in place to handle different applications and services the MOH provides for HIS.

We also created a set of questions to assess the county- and facility- level ICT landscape.”

The team was able to utilize DHIS 2 and other tools for most parts of the ICT assessment, but with little time and a lot of information to capture they needed a solution that could quickly connect them with stakeholders at facilities. This led Romain and his colleagues to try mHero as a lightweight tool to assist in collecting some of the information at the facility level.

mHero is a two-way, mobile-phone-based communications system that uses basic text messaging, or SMS, to connect ministries of health and health workers

“We decided to use mHero because it is a fantastic tool,” he says. “We only had three months and to go across the country to all of those facilities would be something that would take a lot of time and money. We had to be innovative and think of a way to get the answers we needed.”

MHERO: A QUICK CONNECTION TO HEALTH FACILITIES

Romain and the ministry team identified data managers and monitoring and evaluation officers to receive the messages through mHero for the assessment. “We’d met them at a workshop in Golden King Key in Monrovia,” he says. “We knew whom to contact and they knew we’d be reaching out to them with the survey.”

The HMIS and ICT units at the ministry worked with Romain and his colleagues to write the questions—called workflows—that would be sent to health workers using mHero. They wanted to be precise and efficient in their messages. Asking too many questions would likely reduce the response rate. Asking too few would limit the information they would receive. The team prioritized questions about whether facilities had power, internet, and

computers. The team also asked if the individuals working there had tablets or smart phones.

Once they finalized the content, the mHero team input the workflows into RapidPro, an interactive messaging system that allows users to send and receive data through simple talk and text mobile phones. "First we wanted to identify the name of the facility the message went to," Romain says. "If that was correct, then we'd send the rest of the questions. We tested all of them before sending them out."

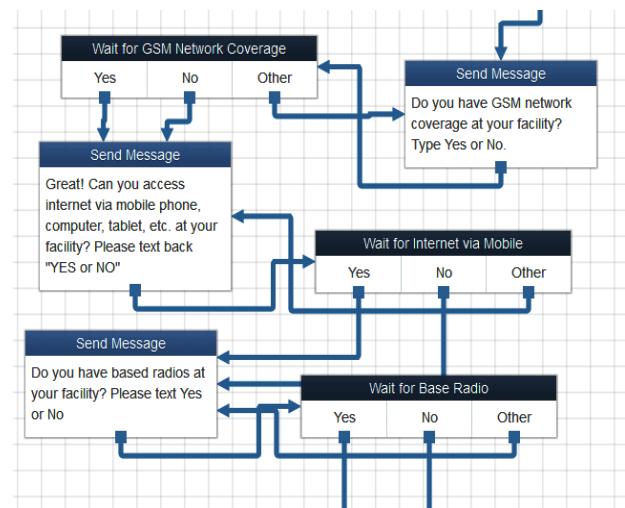
In total, 35 responses were submitted from a total of 138 surveys, an acceptable rate considering mHero is a new platform. Once the workflows were complete, Romain and his team downloaded the data from RapidPro into Excel to analyze for their final report.

OPPORTUNITIES FOR LEARNING AND IMPROVEMENT

Utilizing mHero for the ICT assessment presented an opportunity to quickly collect information from health facilities in Liberia. Perhaps even more salient was the exercise of using mHero to connect with health facility managers. One of mHero's benefits is saving time and resources to collect and share information between central-level stakeholders and health facilities. This was clearly a priority for the ICT assessment.

Still, when implementing something new there are always things to learn and areas to improve. Romain learned during the mHero ICT assessment activity that some staff didn't receive messages because their phones were off. Another issue was that messages came through out of order, making it challenging for recipients to accurately respond.

Many such challenges can be attributed to network coverage gaps—when mobile service was unavailable, it disrupted the flow of messages coming through mHero. These challenges are not unique to mHero and are among those that USAID and other donors are aiming to address through coordinated HIS investments throughout West Africa.



Screenshot of the ICT assessment in RapidPro.

"mHero is a great tool and there is great potential here," concludes Romain.

One of IntraHealth's goals is for mHero to help improve data-sharing and provide better communication with other HIS subsystems, streamlining interoperability. With the ministry at the helm, we are supporting efforts for data to be more strategically collected, holistically managed, and used.

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