MOBILE PHONE SURVEY SOFTWARE FOR END-USE

BRIEF OVERVIEW

For developing countries affected by malaria, cost-effective, reliable, secure, and sustainable supply chains can save millions of lives. Shortages and stockouts of health commodities can cause dangerous treatment gaps for patients. Unplanned emergency orders waste money on rush fees and high freight costs. Lack of inventory control wastes valuable commodities due to expiry, improper storage, and theft. Poor coordination leads to redundancies and gaps in service.

The goal of a health logistics system is much larger than simply making sure a product gets where it needs to go; it seeks to ensure that every person is able to obtain and use quality essential health supplies whenever he or she needs them. To determine if malaria commodity needs are met, the U.S. President's Malaria Initiative (PMI) implements quarterly surveys that capture information about the malaria supply chain and malaria diagnosis and treatment at public health facilities in focus countries in sub-Saharan Africa. Results from these quarterly End-Use Verification Activity surveys provide rapid, actionable findings for decision makers.

After piloting paper-based End-Use Verification Activity surveys in 2009, the USAID | DELIVER PROJECT began conducting mobile phone-based End-Use surveys. These quarterly surveys use DataDyne's EpiSurveyor (now Magpi) platform, which facilitates the creation of data collection forms online, and eases the collection and analysis of survey data.

ABOUT SURVEY SOFTWARE FOR END-USE VERIFICATION

The PMI End-Use Verification Activity is a quarterly survey that captures information about the malaria supply chain and malaria diagnosis and treatment at public health facilities in focus countries in sub-Saharan Africa. The USAID | DELIVER PROJECT conducted a pilot of the End-Use Verification Activity in 2009 in Tanzania. The pilot used paper surveys and revealed that implementing the survey across all focus countries would be too time-intensive and prone to producing poor quality data.

To address these challenges, the project conducted a pilot in 2009 of mobile phone survey technology to implement the End-Use survey in Ghana. Following the success of that pilot, PMI adopted the use of mobile technology for regular implementation of the activity. The use of mobile technology enables the rapid analysis of data and the quick and widespread dissemination of findings useful for strategic and programmatic decision-making. JSI used DataDyne's EpiSurveyor (now Magpi) platform that enables any computer literate user to freely create data collection forms online, download these forms to a wide variety of mobile phones, upload the captured data, and make use of general analysis tools.

With the mobile-phone based End-Use Verification Activity, digital data collection and entry occurs in the field at the point which data is gathered, removing an extra step of inputting data, which leads to less error and greater efficiency. Importantly, decision-makers have access to real-time data for decision-making, increasing their ability to respond to critical problems in the supply chain.

EVALUATION AND RESULTS

After the pilot in 2009, data was collected to measure the efficiency of mobile data collection, data quality, and ease of use. Results indicated that data collection is quicker using digital means rather than paper. The time required to conduct the End-Use survey at a health facility using EpiSurveyor was, on average, 27 minutes less than the time required to gather the data on paper. Results from a comparison of the data in the EpiSurveyor database with what was collected on paper indicate that there was very close parity between the EpiSurveyor database and the data gathered by paper and input by hand. From the 412 different fields compared, 6 discrepancies were discovered, which represented a 1.5% difference between the two methods, with the differences indicating better quality data in those collected via mobile phone.

Ease of use of the mobile phone-based survey program was researched through a short questionnaire, where every respondent asked to be able to use EpiSurveyor again. Despite any perceived limitations of the hardware and software, the ability to automatically perform analysis and eliminate the need to manually enter data after the data collection period made replacing paper-based data collection with mobile phones desirable.

LESSONS LEARNED

- To ensure that data could be secure in the field, even when mobile upload to the remote server was not possible, data collectors needed the ability to back-up data from the mobile phone to a laptop. JSI worked with DataDyne to create this feature, allowing for data transfer via cable or Bluetooth to the user's laptop as a .txt file (compatible with Excel, Word, Notepad, etc.)

CONCLUSION

Coordinating and implementing large scale surveys is a complicated, time consuming process. Using mobile phones for the End-Use Verification activity has reduced the time needed to implement the activity and produce actionable findings, by streamlining the database creation, data entry, and analysis steps. In 2012, End-Use Verification was initiated in two new countries, Nigeria and Zimbabwe, and continues in Ghana, Mozambique, Malawi, Tanzania, and Zambia. It is also implemented regularly in Angola, Burundi, DRC, Ethiopia, Kenya, Liberia, and Mali by USAID's Systems for Improved Access to Pharmaceuticals and Services (SIAPS) program.

GEOGRAPHIC COVERAGE

More than 5,000 health facilities in Ghana, Malawi, Mozambique, Nigeria, Tanzania, Zambia, and Zimbabwe.

IMPLEMENTATION PARTNERS

John Snow, Inc. (The USAID | DELIVER PROJECT); Country-specific partners: **GHANA**: Stores, Supplies and Drugs Management (SSDM), National Malaria Control Program (NMCP), Pharmacy unit, Disease control unit, Family Health Division (FHD), National Tuberculosis Control Program (NTCP), National AIDS Control Program (NACP) and the Centre for Health Information Management (CHIM) | **MALAWI**: NMCP | **MOZAMBIQUE**: NMCP and Central de Medicamentos e Artigos Medicos (CMAM) | **NIGERIA**: NMCP, Targeted States High Impact Project (TSHIP), Malaria Action Program for States (MAPS) | **TANZANIA**: NMCP and Pharmaceutical Services Section (PSS) | **ZAMBIA**: Ministry of Health | **ZIMBABWE**: Ministry of Health Child Welfare (MOHCW), MOHCW Directorate of Pharmacy Services

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