International Quality Short Message Services (IQSMS)

Brief Overview

The LEAD project, led by CRS, provides high-quality care and antiretroviral therapy to people living with HIV in four regions of Tanzania. One of the primary objectives is to strengthen the capacity of local partners to provide quality services. In collaboration with 126 government and faith-based Care and Treatment HIV facilities and 787 PMTCT sites, LEAD supports antiretroviral therapy, prevention of mother-to-child transmission and tuberculosis services.

The project aims to increase access to the full continuum of care for PLHIV and their families and envisions a Government of Tanzania healthcare system linking care across community services, healthcare workers, local facilities, and government.

In 2010, AIDSRelief (the predecessor to the LEAD project) introduced International Quality Short Message (IQSMS) to 100 facilities. IQSMS tracks routine aggregate PMTCT indicators using basic SMS mobile phone technology to meet donor and Tanzania Ministry of Health reporting requirements. Reports are submitted monthly to the district and regional levels for program monitoring and decision making.

- **Geographic Coverage:**
  - Afghanistan, Angola, Bangladesh, Benin, Brazil, Burundi, China, Dominican Republic, DR Congo, Ethiopia, Guatemala, India, Indonesia, Jordan, Kenya, Lesotho, Liberia, Mali, Namibia, Philippines, Rwanda, Senegal, South Africa, South Sudan, Swaziland, Tanzania, Ukraine, Vietnam

- **Implementation Partners:**
  - Catholic Relief Services (CRS) leads a team of partners which includes:
    - Futures Group International (Futures) | Interchurch Medical Assistance World Health (IMA) | University of Maryland School Of Medicine – Institute of Human Virology

- **Funder:**
  - CDC

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About IQSMS
IQSMS was developed by Futures Group as freely available, open source software, under the creative commons license. This allows IQSMS software to be used by local implementing partners, NGOs and local ICT groups in Tanzania. By taking an open approach to designing ICT solutions, it enables the Ministry of Health and the Government of Tanzania to have country ownership and ensure sustainability of this innovative ICT mHealth solution. IQSMS is an application that uses mobile phone SMS to report data in a predetermined format to a centralized server. The SMS is transformed into an integrated database.

The software uses SMS data in a predetermined format, sent to a dedicated central server (can be a basic desktop) connected to a modem or 3G connection. IQSMS records incoming SMS and reports into a SQL database. Automated data quality checks, business rules and immediate notifications are sent to users ensuring that only validated data is added to database. IQSMS was implemented at rural and hard-to-reach sites in areas with network coverage. Messages were received by a modem connected to a server which performed data quality checks and responded to sender. After data verification, the data was automatically integrated into the database. The user was notified about any inaccurate reports rejected by server. PMTCT staff participated in a four-hour training session on using IQSMS. The application is very flexible and reports, data validation and business rules can be updated by an administrator without the need to engage a software developer. The tool can be used for reporting other program areas with no further development.

Results
IQSMS has made reports available on time at the district, regional and national level from facilities. It has reduced the travel frequency of facility staff and field officers since data is sent electronically rather than submitting hard copies. Staff at the district, regional and national level no longer need to aggregate data manually from the facility level and time in error checking has been reduced as the system checks automatically for errors. Wait time on feedback of the quality of reports is significantly reduced. IQSMS has also helped the district and regional offices to be able to compare their reports with other regions for improvement.

By October 2012, 558 sites were sending their reports to a centralized project server in Dar es Salaam. The reports include: PMTCT Antenatal Clinic (ANC) monthly summary form; PMTCT care monthly summary form; PMTCT mother-child follow-up monthly summary form; and labor and delivery monthly summary form. Complaints about the accuracy of the transcription of paper-based reports have been reduced. There is also reduced time in error checking as the system checks automatically and final results are posted within 20-30 seconds.

Lessons Learned
- 558 PMTCT facilities have been reached.
- No paper based reports leading to minimal storage and office space need.
- Reduced travel costs and increased productivity at the facility since monthly travel to deliver reports is no longer required.

IQSMS supports the government to ensure continuity of reports between partners and the Tanzanian Ministry of Health and Social welfare. IQSMS is implemented without any significant investments in data collection labor, transportation and storage costs.

Conclusion
IQSMS is an easy to use and effective tool for aggregate reporting of health and development information. IQSMS reduces the time required to provide feedback to the reporting facilities and can lead to improved efficiencies by reducing travel time to submit reports. The software does not require Smartphones or a specific operating system; a simple feature phone with SMS enabled is the only mobile phone requirement. The system improves data quality and requires to facilities to submit validated reports.

Information was excerpted from:
AIDSRelief Marks Lifesaving Milestones - http://crs.org/united-states/aidsrelief-landmark-event/;
http://www.stockholmchallenge.org/project/2010/international-quality-short-message-services; Futures Health Informatics Presentation Bobby Jefferson, Senior Health Informatics Advisor; http://www.iqstrategy.net/frmiqsms.shtml;