

Reaching the Third 90:

Lessons learnt in the early phases of implementing an m-health platform for the notification and retrieval of viral load test results in a limited resource setting.

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1. Country Context

Swaziland is a landlocked country covering about 17,000 sq with a mainly rural, mobile population of 1,215,000. Swaziland has one of the highest HIV prevalence rates among adults aged 15-49 years in the world at 31% and at 41% among pregnant women.

Swaziland has a centralized laboratory which performs diagnostic tests for viral load and Early Infant Diagnosis (EID). However, the results notification system is weak and increases the turnaround time for results delivery and linkage into care and treatment with resultant high rates of lost to follow up of patients. PMTCT reports 2014 show that 35%-40% of pregnant women are lost to follow up after the first ANC visit, only 30% of HIV negative women get retested during pregnancy and about 68% of exposed infants who are tested receive their results in a timely manner. With a sole cellular network provider with GSM coverage of 86%, 5% fixed connectivity and an estimated 75% access to a cellular phone, URC is implementing m-health interventions to improve some of the patient outcomes such as: increased retention of HIV patients in care, improved results delivery for pregnant women and exposed infants as well as improved retention in care of mother and baby pairs.

2. Background

Viral load monitoring (VLM) for HIV infected persons receiving ART is a critical tool for enabling earlier and more accurate detection of treatment failure before the immunologic decline. In 2015, Swaziland scaled up access to HIV VLM in response to the revised 2015 integrated HIV management guidelines. As part of phased implementation the country has identified strategic priorities, including optimizing clinic- laboratory interface processes, results delivery and information management – a critical component for improving the quality of patient care, and ART program monitoring. Optimizing viral load result chain of custody and Turnaround Time (TAT) in a centralized testing set up is a challenge for effectively implementing routine viral load monitoring in resource limited settings. The m-health intervention addresses five major objectives:

1. To provide notification of patients of the availability of test results;
2. improve results retrieval by providing a platform HCWs to lookup test results;
3. Improve the enrolment of HIV infected persons and keep them engaged in care;
4. Flag overdue test results and patients who have missed their appointments by two days and collect feedback;
5. To enable HIV infected infants to be linked to care through tagging of the mother and baby pair for up to 24 months after delivery.

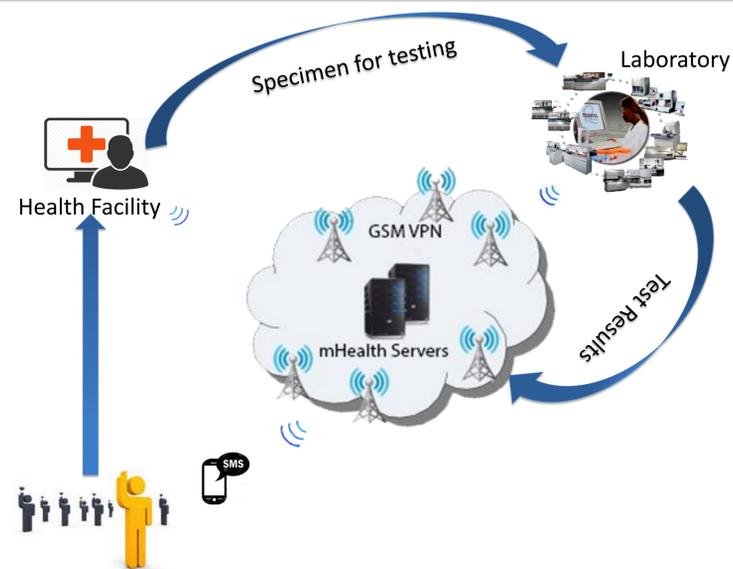
We demonstrate initial successes and lessons learnt in setting up an electronic m-health platform for the enhanced delivery of VL results.

3. Intervention

The PEPFAR funded USAID ASSIST project managed by URC worked in close collaboration with the MoH through the Swaziland Health Laboratory Services and key stakeholders to design an innovative and contextualized web based m-Health platform. The system consists of a server based application accessible through a Global System for Mobile Communications (GSM) virtual private network (VPN) by remote facilities using desktop computers with a 3G data modem (see figure 1 : m-health intervention model).

The application has an interface for real time entry of patient demographics, appointment scheduling and reminders, automated SMS notification of patients on availability of results, tracking of mother-baby pairs and retrieval of viral load results at facility level. The system can be adapted for use with any centralized laboratory test and disease condition. The pilot testing of the system has been successfully concluded. Test patients are receiving appointment reminders on a monthly basis and are informed immediately when their results are uploaded from the Laboratory Information System (LIS).

Figure 1: m-health intervention model



4. Lessons Learnt

- The availability of a functional contextualized m-health platform enabling real time notification and retrieval of viral load test results from a centralized testing laboratory to peripheral and hard to reach clinics is of critical importance for timely patient management and follow up.
- High level program commitment and coordination of public-private partnership is a key ingredient in providing an enabling environment for the success of the m-health innovations.
- Critical upgrades/changes in existing system may occur during development of an intervention resulting in changes in system specifications and hence delayed implementation.
- However, not all stakeholders may see the interventions in the same light as some have a vested interest in some of functions that may be taken over in the existing systems.
- One time funding may allow for the development and pilot of the system but may not provide for major changes required from the pilot and expansion of intervention.
- GSM signal can provide a cheaper and more practical alternative to augment network connectivity where conventional network infrastructure is not available. In addition, GSM VPNs can be used to achieve cost containment for data and ensure data security as traffic is isolated and access is targeted.

The lessons learnt are critical for future rollout of the m-Health innovation.

5. Next Steps

Modification and expansion of the m-health platform to cover more HIV care and treatment sites across the country and cater for more centralized laboratory tests.

Disclaimer

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