

Automating Data Collection for HIV Services

Brief Overview

Faced with the high costs of printing and couriering paper client records, with a high data entry burden, and inconsistent quality of reporting, many programs are turning to electronic data capture solutions to improve efficiency and lower costs. Indeed, a project's reporting requirements may involve multiple paper-based tools used to collect client information, laboratory testing results, and supervision data. Client Intake Register (CIR) forms are often incorrectly or incompletely filled out by staff, while the large data entry burden regularly results in delays in reporting. Because of rising client volumes, it can become increasingly expensive to print client record forms, pay for courier services, and even pay for data entry (data entry might be outsourced to research agencies).



Population Services International/Zimbabwe (PSI) annually provides counseling and testing (VCT) services to over 350,000 people through its network of 17 VCT sites. To lower costs and improve the data entry process, PSI/Zimbabwe piloted the use of tablet computers for data capture in its *New Start* Centers and by outreach teams. A pilot was conducted during the second half of 2011 in three sites.

■ Geographic Coverage:

Three sites in Zimbabwe

■ Implementation Partners:

Population Services International

■ Funder:

USAID

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About Automating Data Collection

A Windows-based application was developed by a consultant and includes a data collection tool with digital CIR forms, a data management interface, and export functionalities. Key system requirements were that it should be a scalable system, allowing for easy upload of client records to a central repository, the incorporation of logical skip patterns and coherence tests into the data collection forms, and interconnections between tablets in order for multiple counselors to have access to all information of a particular client.

Suitable hardware was identified and the system was deployed and tested at three *New Start* clinics for a period of three months; 12 counselors were trained on the use of the tablets and of the application. Each team of about 10 devices was to have its own WLAN hub with one of the tablets acting as the back-end server for synchronization purposes. Technical support was provided throughout the pilot by the IT and MIS units and by the consultant.

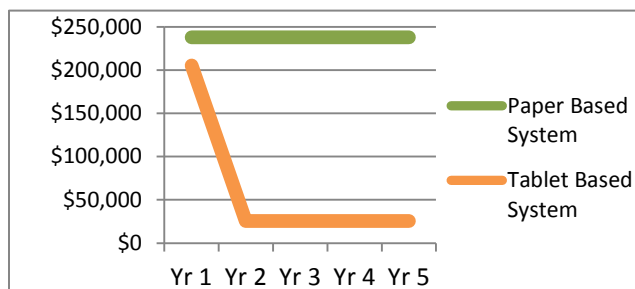
Evaluation and Results

The successful pilot highlighted the value technology will bring to the testing and counseling department while significantly reducing the cost of the data collection process. During the pilot, the IT/MIS team successfully created a user-friendly digital data collection form for the client intake forms, and designed a system that allowed for networking of responses among the multiple clients and sharing of client records between counselors. All 54 variables required for statistical analysis and reporting purposes were successfully exported into SPSS. The forms can be paused and resumed at any time, and include built-in logical skip patterns.

Currently PSI is installing the system in all of its 17 *New Start* clinics, soon to be followed by the organization's *New Life* sites (provision of post-test support services). Phase one of the implementation plan is now completed, with five sites now exclusively using tablets for VCT record keeping (following a transition period during which both digital and paper records were kept). During the pilot, CIR printing, data entry and courier costs were significantly cut.

Estimated cost comparison over five years

Source: Population Services International, 2012



Lessons Learned

- Users struggled with navigation of Windows 7, which requires additional training.
- Device to device network (15m radius) did not work well. Each site and outreach team needs to have a Wireless Local Area Network (WLAN).
- Battery life problems can be alleviated by including battery packs and solar chargers in the hardware requirements and using tablets that are less power-intensive.
- Windows 7 licenses are very expensive. Revised forms will be developed in a Java-based application compatible with Android operation system, resulting in lower price for equipment and no more license fees.
- Securing the devices is difficult. Counselors have to carry the device around and then store them in the safe after hours.
- Adequate IT resources and IT support staff is required to set up and run the system.

Conclusion

Using tablets to collect data can result in improved data quality, faster data collection, near real-time data and timely reporting of client records on monthly basis, and is less costly, despite high initial set-up costs. Tablets can also be used for data collection and reporting by field staff such as IPC agents, medical detailers, or community health workers.