

Smartphones Are a Smart Move in Nigeria

In Nigeria, health workers are using smartphones at more than 500 facilities to more accurately diagnose and treat tuberculosis (TB) as a result of a successful pilot program to integrate mobile technology into the TB supervision process. Nigeria has made significant progress in its fight against TB, but the National TB and Leprosy Control Program (NTBLCP) wanted to tap into mobile technology to provide more supportive supervision and improve health services, especially in areas with high defaulter rates, drug stock outs and TB/HIV services integration.

USAID's Health Systems 20/20 project collaborated with NTBLCP's training center to develop a standard, integrated TB supervision checklist to assess and monitor diagnostic laboratories and Directly Observed Treatment Short course (DOTS) services and then piloted it in 16 facilities in 2010 using personal digital assistants (PDAs). Based on the success of the pilot in four states, the program was scaled up to 200 facilities in 2012.

Under USAID's new Health Finance & Governance (HFG) Project, the program has since scaled up to an additional 300 facilities and upgraded from PDAs to smartphones. By using smartphones on their facility visits to collect TB data, supervisors have eliminated the need for printed forms, minimized human error in data entry, reduced the lag time for getting data to policymakers and managers, and helped pinpoint ways to improve the quality of care. There has also been considerable clinical impact as seen in results from Lagos and Abia States (Table 1). In Abia, the percent of TB- and HIV-positive (co-infected) patients on cotrimoxazol preventive treatment (CPT) jumped from 34% to 100% in one year. In Lagos, the percent increased from 33% to 57% during the same time period. Defaulter rates in both states have also declined considerably.



Table 1: Illustrative Results Lagos and Abia States Jan 2012-March 2013

Indicator	State			
	Lagos		Abia	
	Jan-Mar 2012	Jan-Mar 2013	Jan-Mar 2012	Jan-Mar 2013
Percent of TB-positive patients tested for HIV	96	95	93	100
Percent of TB-positive and HIV-positive patients (co-infected) on CPT	33	57	34	100
Percent of TB-positive and HIV-positive patients (co-infected) on ARV	29	39	26	72
Smear-positive cure rate (in percent)	62	59	47	61
Treatment completion rate (in percent)	29	13	11	14
Treatment success rate (in percent)	91	72	58	75
Defaulter rate (in percent)	21	6	9	6

In areas with declines rather than improvements, the new system allows HFG staff to go back into the phone or database and pinpoint the causes, meaning quality improvements can be driven by evidence. As a result, solutions can be tailored to address the root causes of the issues. Given the program's rapid growth from 16 facilities (2010) to more than 500 (2013) in only 2.5 years, mobile technology is clearly a powerful tool to improve quality of care and strengthen health systems.

From Improvements in Service Delivery to Improvements in Governance

LGA supervisors collect information during supervision visits either monthly or quarterly using the Smartphones. M&E form's data are collected monthly by supervisors. Other data are collected quarterly. Between visits, supervisors concentrate on areas of improvement as proven by the data rather than once again compiling facility data. Areas of improvement are documented in action plans that are monitored between data collection visits. Through the online database, the national TB program can also monitor the frequency of supervision visits to each facility, as you can view when data are uploaded after a visit.

However the supportive supervision system goes beyond data collection and rapid analysis. Both the data and the action plans are reviewed at state-level quarterly meetings, leading to further analyze performance issues and support LGA supervisors in closing gaps outlined in action plans. In addition, each time a data collection visit is made, supervisors upload the results into a web-based database. The database allows for higher level systems monitoring, including: 1) frequency of supervision visits¹; 2) improvements or declines in key TB indicators including cure rates, case detection and death rates; and 3) monitoring of certain areas where TB indicators are improving or where TB seems to be a bigger burden on the health system. The latter informs state and federal-level decision-making about resource allocation, training and additional support, such as drug deployment and equipment re-supply.

Action plans are shared between LGA and State supervisors and also with the facility. In a pilot evaluation conducted in 2012, facility manager and supervisors alike said that the use of the phones pinpointed the most urgent problems during the visit which allowed more time for solving problems rather than just documenting them. State supervisors said it also made data sharing during quarterly meetings more efficient so that actual problems instead of data entry and analysis could be addressed. The time could be more effectively used for troubleshooting and supporting facilities with quality issues.



Contact

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¹ Based on the frequency of uploads, it is clear supervisors are using the phones for supervision visits and are diligently uploading and using results.