

# **Experiences and Lessons from Using a Mobile Application for Community Health Workers in Two Districts of Western Tanzania**

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## **Background:**

The timely availability of data is vital in informing decision-making on health services provided by community health workers (CHWs), who in Tanzania form a critical workforce in expanding access to health services, including family planning (FP) in rural and underserved communities due to acute shortage of facility-based healthcare workers. Paper-based systems can be slow, administratively burdensome, and prone to human error. Digital tools potentially offer more efficient collection of data, allow customizability, and ease data analysis and sharing.

## **Methods:**

With funding from USAID, Pathfinder International, in collaboration with the Jane Goodall Institute (JGI), implemented the Landscape Conservation in Western Tanzania (LCWT) project from 2018 to 2023 by integrating FP services into conservation efforts. In 2020, Pathfinder developed and deployed a mobile application built on the Open Smart Register Platform (OpenSRP) primarily to address the data and reporting challenges inherent in a paper-based data management system, such as timely availability of data, data accuracy, and access to data by the project team. Additionally, this application provided decision support for CHWs in FP service provision, serving as a job aid during FP counseling and client screening and follow-up. The application captured individual data during CHW-client interactions and integrated with Pathfinder's DHIS2 to submit aggregated data monthly. For areas with low internet connectivity, the application allowed offline data entry and synchronized with the server once an internet connection was available.

In November 2020, the project provided smartphones to 302 CHWs and trained them on the mobile application. By May 2021, only 32 CHWs (11%) were using the application for data collection and reporting. A refresher training was conducted immediately, followed by regular targeted visits for technical support to resolve any hardware and software issues encountered by users. Consequently, the application usage increased to 119 CHWs (39%) by June 2021 and eventually to 247 CHWs (82%) by June 2022. However, throughout this period, the project continued using the paper-based system as a backup to ensure continuity and validate the effectiveness of the FP mobile application. This dual approach ensured that data management processes remained uninterrupted and facilitated a smooth transition to the digital system.

## **Results:**

The efforts to digitize the FP data management system at the community level faced several operational, technical, and financial challenges. Maintaining the FP mobile application required more resources compared to the paper-based system, such as staff travel for technical support, monthly internet subscriptions for CHWs, application maintenance and server hosting charges, and repurchase of lost or damaged smartphones. Moreover, internet connectivity problems led to inconsistent use of the application, incomplete reporting, and data inaccuracies. For example, of the 45 CHWs visited in June 2022 who were not using the application, 23 had lost or damaged their

smartphones and 22 were still uncomfortable using the application and needed more technical support. Some CHWs reported traveling long distances or climbing trees to access internet connectivity. Consequently, during the follow-on phase, the project decided to discontinue the use of the mobile application and revert to the paper-based system to ensure data completeness and accuracy.

### **Conclusions:**

The FP mobile application initiative under the LCWT project in western Tanzania was anticipated to offer solutions to the data-related challenges faced by CHWs and the project. However, training on smartphones and mobile applications, as well as regular supportive supervision for technical support, were not sufficient to ensure the optimal utilization of the mobile application for data collection and reporting by CHWs. A combination of operational, technical, and financial setbacks led to its discontinuation, necessitating the project's return to a paper-based system. These experiences highlight the complexities of implementing digital health solutions in low-resource settings, particularly in rural and hard-to-reach areas, and the importance of considering local infrastructure and user capabilities before deploying such technologies.