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Innovations at Scale for Community Access and Lasting Effects (inSCALE)

A community health worker decision support system in Mozambique

SERVICE DELIVERY

Implementation date: June 2013

Since 2010, approximately 1,950 community health workers (CHWs) in Mozambique have been deployed to improve access to basic health care in remote areas of the country, focusing primarily on maternal, newborn and child health (MNCH). Locally known as Agentes Polivalentes Elementares (APEs), these trained community members conduct extensive health promotion and education activities. They work in the case management of malaria for patients of all ages, and pneumonia and diarrhea in children under five. APEs also refer pregnant women, newborns and children with danger signs to the nearest health facility.

In order to improve the quality of care provided by APEs and scale-up the program nation-wide, Malaria Consortium, Dimagi, Inhambane provincial health directorate, the Mozambique Ministry of Health (MOH) and other partners have worked to address key challenges through the five-year inSCALE implementation research project. A randomized control trial conducted by the project studied the effects of mHealth applications on CHW motivation, supervision and performance, and ultimately coverage of appropriate treatment for children with diarrhea, pneumonia and malaria.

About inSCALE

Malaria Consortium's Innovations at Scale for Community Access and Lasting Effects (inSCALE) project is responsible for Mozambique's largest mHealth deployment to date and provides an opportunity to explore the potential impact of technology solutions on child care services delivered through a national health system. The two main features include the APE CommCare support tool and the CommCare HQ web-based, real-time dashboard for program planners.

Through the use of images and audio, the inSCALE APE CommCare application walks APEs through the consultation steps to assess, classify, treat and refer patients. The decision support tool includes a checklist of mild and severe signs and provides treatment guidance. In addition, APEs can use a built-in and simplified respiratory timer to detect pneumonia symptoms. Individual patient data is stored on the phone and, once a network connection has been established, is sent to a server, along with weekly aggregated case data and drug stock levels. Each APE also receives a monthly automated credit allowance to call peers and supervisors for additional support.

CommCare HQ incorporates Active Data Management capabilities which allow facility and district-based supervisors to receive weekly and monthly summary reports on diagnosis, treatment and follow-up of patients, along with recommendations on needed actions. They can assess each APE's performance using custom competency checklists and provide constructive feedback over the phone or during monthly supervision meetings. APEs and health facility-level supervisors also receive monthly motivational SMS messages.

All data is stored on a web-based server that provides real-time information on each individual case, epidemiological data, and drug stock indicators. Stakeholders at the provincial and district-level statistics bureau use the CommCare HQ reporting dashboard to access and analyze the data.

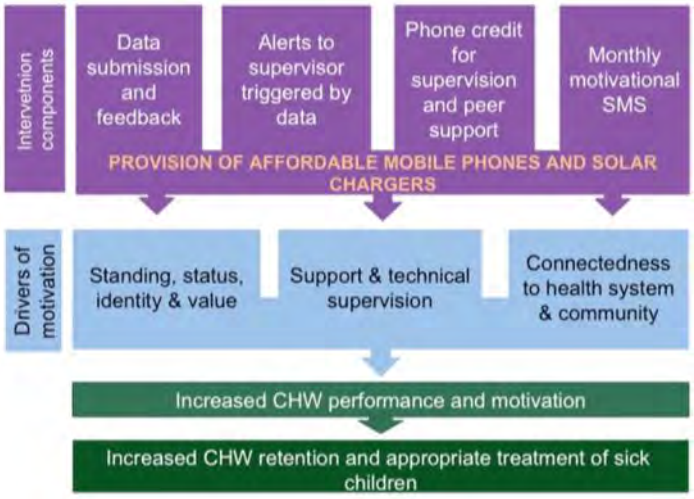

Figure 1: Conceptual framework for the inSCALE APE CommCare intervention package

Evaluation and Results

While the process evaluation is currently ongoing, preliminary results have been collected. Since implementation, 132 APEs (out of almost 300 deployed in the whole province), 47 facility-based supervisors, and six district APE coordinators in the six selected districts have been using the inSCALE CommCare application. Quantitative results reveal that 60 percent of APEs have received one or more calls from their supervisor in the last 30 days, while 80 percent have called their supervisor for help or support in the last 30 days. About 70 percent of APEs state they always use CommCare in their work and that it helps them to remember what symptoms to look for. The three most preferred aspects of the tool are the job aid for newborns, children and pregnant women, the improved respiratory rate timer, and treatment and dosing instructions.

Initial qualitative findings show the application contributes to enhancing the community recognition of the APEs, leading to increased legitimacy and motivation of APEs. Health facility supervisors find weekly reports of drug stock data useful for providing access to continuous and accurate medicine use and for addressing commodity gaps. Real-time data also allows for quick identification of active and non-active APEs, the number of diagnosed and treated cases, and the number of referred cases, disaggregated by cause.

Lessons Learned

- The APE consultation and decision support system was developed based on already existing and well-tested paper-based job aids and is fully aligned with MOH diagnostic and treatment protocols for community-based care, thus allowing a smooth transition from paper-based manuals to a phone-based tool
- System-generated reports follow the MOH standard reporting templates and utilize the national rubric for comprehensive case management to ensure that supervisors can link them back to their paper-based system
- A user-centered design was critical to development and involved MOH staff and APEs in every step; User feedback was obtained through interviews and APE observation during patient visits and throughout the iteration process
- The "training of trainers" approach was key to generating project ownership and sustainability; Malaria Consortium trained health cadres at various levels of the provincial health system who then trained APEs and supervisors in their respective catchment areas
- Additional Android phone introductory sessions and an AppLocker application helped APEs learn the necessary technical literacy levels for efficient phone usage while avoiding overuse of other data-heavy applications

Conclusion

The inSCALE APE CommCare App is already addressing some of the key challenges faced by the APEs and their supervisors through strengthening their relationship, enabling APEs to conduct high quality work, and connecting them with the communities they serve. The application has the potential to incorporate additional job aids and tools for the management of a wider range of diseases. It can also become a valuable tool to strengthen health systems and improve quality of care through community-based delivery systems by utilizing epidemiological data for improved forecasting and supply distribution, and for providing information to the MOH and Provinces to support their decisions about targeted interventions and approaches.

Geographic Coverage: Six districts in Inhambane province, Southern Mozambique

Implementation Partners: Malaria Consortium, Dimagi, Inhambane provincial health directorate, Mozambique Ministry of Health, London School of Hygiene & Tropical Medicine, University College of London

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