An APE uses the inSCALE CommCare App to conduct a consultation

inSCALE innovations

inSCALE CommCare Application: improving quality of care at all levels
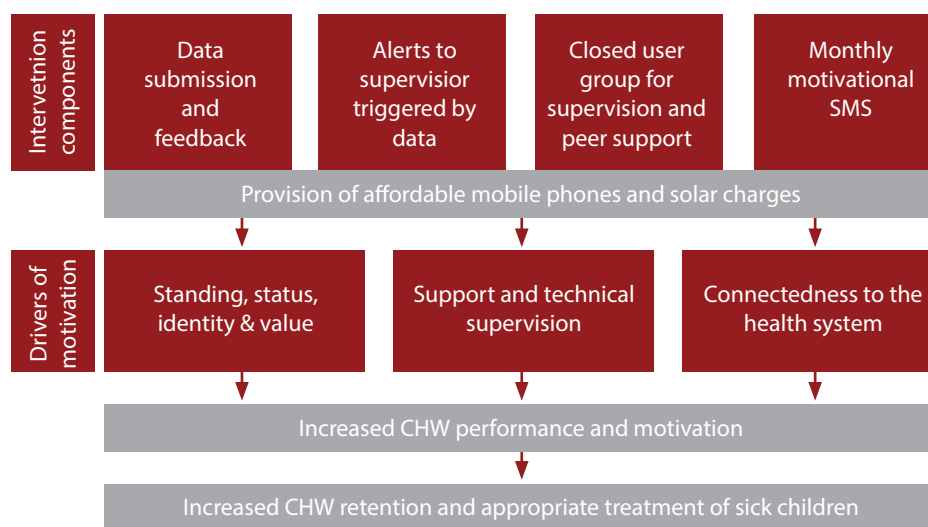
What is the need?

Community health workers in Mozambique, locally known as *Agentes Polivalentes Elementares* (APEs) are an integral part of the national health system, intended to improve access to quality health care in remote areas of the country. APEs are conducting extensive health promotion and education activities as well as case management of malaria in patients of all ages, pneumonia and diarrhoea in children under five and referring pregnant women, newborns and children with danger signs to the nearest health facility.

In order to improve the quality of care provided by the APEs and scale-up the programme to the whole country, there is a need to address some of the key challenges being faced. inSCALE, a five year research and implementation programme supported by the Bill & Melinda Gates Foundation, is interested in evaluating innovative approaches to CHW motivation, supervision and performance by increasing the frequency and quality of supervision, status and standing of CHWs in the community, and their connectedness to and integration in the health system.

How are the challenges being addressed?

As part of inSCALE, Malaria Consortium and Dimagi developed the inSCALE CommCare application to be used by APEs and their supervisors to improve APE motivation, performance and retention, and ultimately increasing appropriate treatment of sick children (Figure 1). The application is being evaluated in a randomised control trial in Inhambane province.

Figure 1. Theoretical framework of the inSCALE CommCare application

Intervetnion components	Data submission and feedback	Alerts to supervisior triggered by data	Closed user group for supervision and peer support	Monthly motivational SMS

Provision of affordable mobile phones and solar charges

Drivers of motivation	Standing, status, identity & value	Support and technical supervision	Connectedness to the health system

Increased CHW performance and motivation

Increased CHW retention and appropriate treatment of sick children

How is the inSCALE CommCare App being used?

Primarily, the inSCALE CommCare App is intended to improve the motivation of the APEs and strengthen their skills in order for them to provide a high quality of care. This is being achieved in part through the provision of tools for improved diagnosis and treatment of malaria, pneumonia and diarrhoea in children under five. The software has been tailor made for the APEs (based on their already existing job aids) and walks them through the consultation steps to make sure that no symptom or sign is missed, while providing treatment guidance when all steps are complete. Images and audio have been included in the software to refresh the skills in illness identification and treatment. The App is also being used to identify danger signs in newborns and pregnant women as well as guiding malaria treatment in adults. In addition, a respiratory timer to diagnose symptoms of pneumonia has been built in to the software to facilitate one of the most commonly challenging aspects of the APE's work and to support the APEs to provide a high quality service.

The individual patient data is stored on the phone and sent to a server providing real-time information on every individual case seen as well as other epidemiological indicators. These are made available on a database to the Nucleo de Estatistica Provincial and Distrital (NEP and NED - Provincial and District statisticians). Health facility and district level supervisors receive weekly and monthly email reports with aggregated data, APE performance and actionable recommendations on areas needing supervision or follow-up. In addition, the supervisor App is providing support to the supervisors allowing them to more effectively and efficiently track and address issues around APE performance using specially developed competency checklists. Medicine stock data from APE reports is made available to the Health Facility supervisors and is playing an important part addressing commodity gaps through access to continuous and accurate data on medicine use by the APEs.

How else can the inSCALE CommCare App be used?

The inSCALE CommCare App has potential to be tailored and adapted for wider health system strengthening, expanding on existing features and adding more elements to improve health care through community based delivery systems as well as the information sharing between the different health facility levels.

Comprehensive and integrated case management at community level

The current App focuses primarily on case management of sick children and allows for the collection of data for newborns, sick children, adults with malaria and pregnant women. This could easily be adapted to incorporate job aids and stock management tools for other adult conditions which the APEs see in their communities in order to better represent the work they do and support them further to provide high quality care.

Timely and complete epidemiological reporting from health facilities

The data collected at health facility level through the use of the App is invaluable, and could provide regular information on the types of cases being seen, disease patterns, as well as community level medicine consumption. This could be used for improved forecasting and redistribution of supplies as well as increased focus on high burden conditions allowing for targeted funding and improved access to medicines in these cases. The supervisor App could also integrate a new Social Autopsy tool which has been developed in order to increase the understanding of the causes of, and contribution to deaths happening in the community.

An APE uses the inSCALE CommCare App to record a child's vaccine status

Visualising epidemiological data for planners and decision makers

With the above expansions of the inSCALE CommCare App and the web-based platform where data is displayed, Provinces and MoH would have a better overview of cases seen and commodities used by APEs and health facilities, as well as the common causes of and contributions to deaths. In addition, the web platform could be used by the Provinces to monitor health facility performance (including performance of the related APEs and their supervisors). Expanding on Malaria Consortium's experience in Cambodia using mobile phones for malaria surveillance, the data could also be used to create incidence maps and regular disease bulletins to support the Ministry of Health and Provinces to make decisions about targeted interventions and approaches (for example, net distributions or Indoor Residual Spraying). The generated performance scores of health facilities collected in a database, could be used to conduct studies around the feasibility of performance based incentives for health workers, supervisors and APEs.

A stronger and better performing health system

In conclusion, the inSCALE CommCare App is already addressing some of the key challenges faced by the APEs and their supervisors, through strengthening their relationship, improving the APEs' ability to conduct their work and connecting the APEs with the communities they serve. This user-friendly application has the potential to address a wider range of areas, and become a valuable tool for health system strengthening through improving performance, as well as access and use of data at all levels.

The CommCare App focuses on case management of sick children Photo: Ruth Ayisi

Malaria Consortium is one of the world's leading non-profit organisations specialising in the comprehensive control of malaria and other infectious diseases – particularly those affecting children. Established in 2003, Malaria Consortium works in Africa and Southeast Asia with communities, government and non-government agencies, academic institutions, and local and international organisations, to ensure good evidence supports delivery of effective services for disease control.

For more information, visit www.malariaconsortium.org/inscale

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