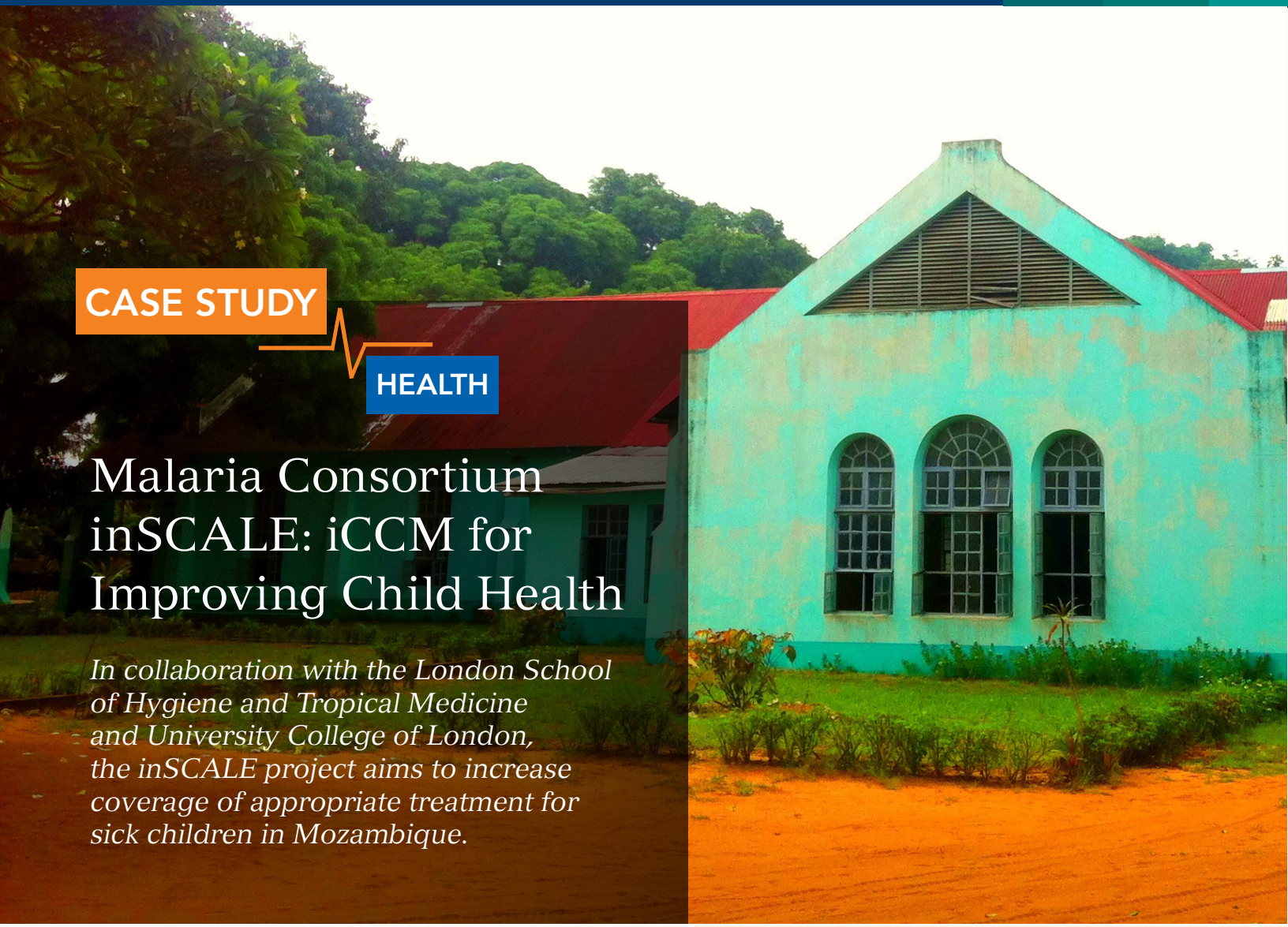
dimagi

malaria consortium
disease control, better health



CASE STUDY

HEALTH

Malaria Consortium inSCALE: iCCM for Improving Child Health

In collaboration with the London School of Hygiene and Tropical Medicine and University College of London, the inSCALE project aims to increase coverage of appropriate treatment for sick children in Mozambique.

PROJECT OVERVIEW

The inSCALE project seeks to demonstrate that government-led Integrated Community Case Management (iCCM) can improve healthcare services and expand coverage in Mozambique, a country where only 52% of the population has healthcare coverage. The project adopted CommCare and CommConnect to strengthen communication between community health workers (CHWs) and health facility supervisors, and with heavy involvement of the Ministry of Health, inSCALE has the potential to expand into other areas of the health system, with the goal of improved diagnosis, treatment, and monitoring of disease throughout Mozambique.

At a Glance

Implemented: Mozambique, 2013-2015

Sectors: Child health, pneumonia, malaria, iCCM

Features: Active data management, decision & diagnostic support, respiratory rate counter, motivational messages (for CHWs & Supervisors), case management, multimedia, custom reporting

Number of users: 179

BACKGROUND

Around the world over six million children under the age of five lose their lives each year to diseases that are preventable and treatable. These deaths occur primarily in poor rural settings, particularly in sub-Saharan Africa, often as a result of strained health systems and limited access to simple, affordable interventions. One approach to improving these systems is integrated Community Case Management (iCCM), a strategy that extends case management of childhood illness beyond health facilities and into communities [WHO, 2013]. Through the iCCM model, community health workers (CHWs) are trained to diagnose, treat, and refer children with key childhood illnesses, including diarrhea, pneumonia, and malaria, and have demonstrated potential to reduce childhood mortality by 60 percent.

In Mozambique, a national network of 1,950 CHWs (locally referred to as Agentes Polivalentes Elementares - or APEs) provide iCCM services to the country's four million children. However, the program's effectiveness can been negatively impacted by low CHW motivation, limited availability and usage of health information, and limited support and supervision of CHWs.

MHEALTH FOR IMPROVED ICCM

To address these challenges, Malaria Consortium developed a mobile health (mHealth) system with Dimagi in 2013 to enhance the country's iCCM program, and boost CHW performance levels, morale, and job satisfaction. The five year project was first implemented in 2009 and includes an 18-month randomized control trial (RCT) in Inhambane Province, Mozambique. The RCT's aim is to study the effects of mHealth applications on CHW motivation, including analyzing data to better understand the accuracy of CHWs' patient diagnosis and prescribed treatment. The project is Mozambique's largest Android deployment to date and an opportunity to explore the potential impact of mHealth on a national system of childcare.

THE TWO MOBILE APPLICATIONS

Malaria Consortium's mHealth system consists of two mobile applications.

Both applications:

- Integrate CommCare (mobile app for CHWs) and CommConnect (SMS based-system).
- Were designed with input & feedback from Ministry of Health officials and CHWs to ensure they remain consistent with pre-existing protocols.
- Work offline and save data on the phone until there is a network connection.

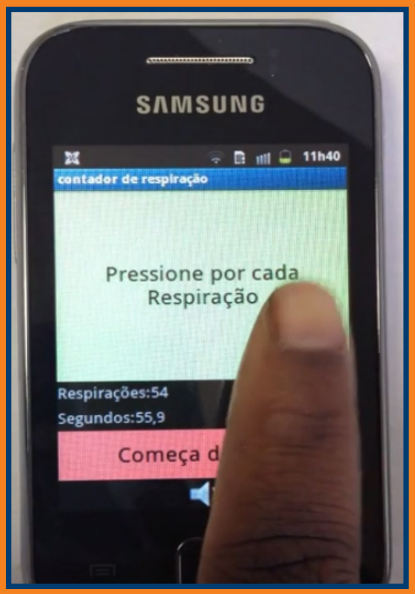
The system currently centers upon a primary application for CHWs, with a complementary application developed for supervisors. There is also an Active Data Management (ADM) component to help district level supervisors analyze child health data collected by CHWs, by providing timely report outs. Malaria Consortium's system also utilizes custom reporting features, a web-based reporting dashboard, and monthly SMS motivational messages provided through CommConnect to better support both CHWs and health facility level supervisors.

Feature Spotlight

Respiratory Rate Counter

In order to diagnose symptoms of pneumonia, CHWs are trained to determine a patient's respiratory rate during patient visits. This is often one of the most challenging tasks for CHWs and can result in improper diagnoses.

To address this challenge, a respiratory timer has been integrated into inSCALE's CommCare application. The timer enables CHWs to tap the phone screen each time a patient breathes, and automatically produces a respiratory rate for the patient at the end of the minute, improving CHWs' ability to diagnose symptoms of pneumonia.



The CHW application is designed to better support 132 CHWs during patient visits based on pre-existing paper-based job aids. The application is based on diagnostic and treatment protocols from the Ministry of Health for diarrhea, pneumonia, malaria, and malnutrition, including an immunization plan for children under five. It also acts as a support tool for CHWs to diagnose, treat and refer children with these diseases, as well as prompt CHWs with a checklist of danger signs exhibited by pregnant women, newborns, and children for appropriate referral and follow-up.

The supervisory application is used by 47 health facility-level supervisors, and is designed to facilitate better supervision and provide supervisors with heightened data. The application enables supervisors to score CHWs' performance during monthly visits, and track CHWs' progress overtime. It was designed with reporting indicators from existing monthly reports at the Ministry of Health, and utilizes the national rubric for comprehensive case management. The application also incorporates Active Data Managemetn capabilities from CommCare so that supervisors can analyze and act upon child health collected by CHWs and follow targeted follow-up action steps for their district's network of CHWs.

CHW-FOCUSED DESIGN

User-centered design was a key element of this mHealth system. Ministry of Health staff and CHWs were heavily involved in every step of designing this project, including in application and custom report design, n iteration, training, and deployment. All user feedback was sought via interviews and in observing CHWs during patient visits at different points of the iteration process.

TRAINING OF TRAINERS

The project also used a "Training of Trainer" approach, to prepare staff for the training of provincial health workers at different levels in the province, increasing project ownership and sustainability. These trainers ultimately trained a total of 132 CHWs and 47 supervisors for the final implementation phase. In addition to training CHWs and supervisors on how to use the CommCare applications, project staff were aware that most CHWs were unaccustomed to using Android phones. Dimagi and Malaria Consortium held extra trainings and introductory sessions on Android phones, and used an AppBlocker to lock down unnecessary features of the phone. As a result of these trainings, CHWs demonstrated the necessary technical literacy levels needed to use the application.

The trial represented Mozambique's largest Android deployment to date, and as such the team discovered new insights in the transition from J2ME phones.

For more information and lessons learnt from the project implementation, please visit: http www.malariaconsortium.org/inscale/pages/innovations/mobile-technology.

CommCare, **CommConnect** 2014
commcarehq.org

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