malaria
consortium
disease control, better health

Assessing the usability of a geospatial platform for seasonal malaria chemoprevention

Background

Since 2013, Malaria Consortium has led the distribution of seasonal malaria chemoprevention (SMC) — a safe, feasible, effective and cost-effective intervention for preventing malaria among children under five — in Nigeria. In 2020, we reached almost 10 million children with sulfadoxine-pyrimethamine and amodiaquine during the peak malaria transmission season.

Inaccurate target population estimates and the use of paper-based monitoring are major challenges to effectively planning, delivering and tracking mass health campaigns like SMC. Population estimates are used to help determine how many antimalarials and community distributors (CDs) are needed to distribute SMC to eligible children, which reduces wastage and unnecessary costs. Poor quality coverage data can affect the intervention's coverage and equity, potentially leaving marginalised and vulnerable communities behind.

We are working with Akros to pilot the use of a geospatial platform called Reveal to support the planning, distribution and tracking of SMC in northern Nigeria.[1] Reveal uses satellite imagery to generate maps of target intervention areas and guide CDs in the field to administer antimalarials to eligible children using an application on their smartphone. A monitoring dashboard allows supervisors to track campaign progress in real time.

Usability testing is becoming increasingly important as new digital health applications become an integral part of disease management, surveillance and health management information systems. Critical to the success of using Reveal for SMC will be whether CDs can use it effectively and efficiently to complete their tasks in the field.

Objectives

Using both quantitative and qualitative methods, we gathered evidence about the Reveal platform to:

- understand whether it supports users to complete their specified tasks
- demonstrate the efficiency of task completion using the mobile application
- document users' competency in using the platform immediately after training.

Methods

Between September and October 2020, alongside the pilot implementation of Reveal for SMC, we conducted usability testing in one easy-to-reach and one hard-to-reach health facility in Goronyo local government area (LGA) in Sokoto state, Nigeria, in partnership with the Sokoto State Malaria Elimination Agency.

We adopted a think-aloud methodology to determine the thoughts and opinions of 10 CDs while they performed a list of specified tasks with the platform in a controlled environment.

We conducted focus group discussions with stakeholders at the health facility, LGA and state level to understand how they felt about the training they had received. We additionally assessed their views on the usefulness of: the platform for planning each day of the SMC campaign; the mobile client for campaign delivery; and the monitoring dashboard for tracking campaign progress.

We downloaded and analysed data from Reveal to assess the time taken to complete tasks and to determine which functions were used most frequently, and by which users.

We administered a training skills evaluation to all users immediately after training to understand the learnability of the platform.

Results

These will be available in 2020 and used to improve the Reveal platform for SMC, for the updated release in 2021, when it will be scaled up in one LGA in Sokoto state. We will share our results with state and national partners, as well as Akros and other members of the Digital Solutions for Malaria Elimination community, many of whom are piloting Reveal for other global health programmes.[2]

References

1. Akros. Reveal precision. [2020; cited 2020 Nov 12]. Available from: https://revealprecision.com/.
2. Digital Solutions for Malaria Elimination. [2019; cited 2020 Nov 12]. Available from: http://dsme.community/.

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