

Achieving Health Impacts at Scale

CRS REVOLUTIONIZES HEALTH CAMPAIGNS WITH DIGITAL TECHNOLOGY

INTRODUCTION

Catholic Relief Services (CRS) has successfully partnered with national government health agencies in several countries to improve the efficiency, quality, and coverage of community-based malaria interventions that support national malaria elimination strategies through scaled ICT applications. Since 2014, beginning in The Gambia, CRS has implemented digitized mass distributions of Insecticide-treated bed nets (ITNs) and seasonal malaria chemoprevention (SMC) campaigns to improve operational efficiencies and coverage. Previously, paper-based systems suffered from a number of operational issues and quality challenges, including, but not limited to, handwriting legibility; expense and time needed for recording data on paper and keying into databases; security related to archiving large volumes of data collection forms; and the inability to conduct remote, real-time monitoring, especially in hard to reach villages. Supported by Unitaid, the Global Fund, and the Bill & Melinda Gates Foundation, CRS' use of ICT in The Gambia, Nigeria and Benin has shown reduced errors, improved efficiencies in registration and distribution, and high-quality data for improved analyses and problem solving, even while the campaign is underway.



FIGURE 1. LLIN CAMPAIGN 2018 NIGERIA/PHOTO BY DOMINQUE GUINOT

HOW IT WORKS



Frontline workers are trained to use a GPS-enabled mobile platform, allowing field agents to quickly register households, calculate SMC doses or ITNs per household and log their distribution, while allowing supervisors to monitor field activities remotely.



All data is synced to an online platform for simplified reporting and analysis. The platform has various permission levels, ensuring sensitive information is only accessible by key personnel.



During household registration and ITN/SMC distribution, CRS uses geospatial data to visualize and monitor in real-time households that have/have not been visited to ensure greater coverage than under paper-based systems.

EXPERIENCE FROM THE GAMBIA

In The Gambia, CRS' 2011 bed-net distribution required staff to collect data by hand on paper forms. As a result, there were problems of legibility, reporting of inaccurate information, difficulty aggregating data, reporting delays, and even transporting, transferring, and storing the information safely. It required 12 filing cabinets to store more than 36,000 paper forms and took six months to transfer the information to an electronic database where it still needed to be cleaned and analyzed for decision-making.

The CRS-supported digitized nation-wide ITN campaigns in The Gambia in 2014 and subsequent SMC campaigns since 2015 dramatically addressed the issues associated with their former paper-based system. In addition to tracking last-mile distribution, household information collected on the cloud-based mobile data collection platform (CommCare) was used to calculate the ITN bundles on delivery trucks – ensuring that the right number of nets were sent to the right place at the right time. Like many countries in West Africa, The Gambia experiences intermittent connectivity. Using a mobile application that could be used offline and synced to an online database when connection was available was a key component of the design.



FIGURE 2. A FRONTLINE WORKER IN THE GAMBIA SCANS A COUPON WITH A QR CODE. PHOTO BY CRS.

EXPERIENCE FROM NIGERIA

In Nigeria, CRS partnered with the National Malaria Elimination Program in using mobile technology to distribute 13.6 million ITNs across four states in 2018 and 21.9 million ITNs across five states in 2019. The system provided real-time data to better manage distributions and ensure that the correct number of nets were redeemed by digitally registered households. In Gombe state, CRS distributed 2 million ITNs at 868 locations in less than one week, achieving a redemption rate of 98.5%.

By employing a GPS-enabled mobile application called the Cash and Asset Transfer (CAT) platform, CRS was able to track and verify that each household received the correct number of ITNs. In the 2018 campaign using 6,000 smartphones equipped with the CAT platform, CRS tracked the training attendance of 54,000 household mobilizers and reached 6 million households through household registrations, distributions, and monitoring. This improved accountability, data quality, and reduced the time required for household registration and ITN distributions. Prior analysis showed that the distance from household to distribution point was significantly correlated to redemption rates; the closer a distribution point, the more likely people were to pick up their ITNs. Using geospatial analysis, CRS mapped household locations and modelled the closest distribution points to reduce average walking distances for remote and vulnerable populations. In 2021, the CAT platform will be used to reach approximately 29 million people with lifesaving ITN nets.

BENIN

In 2020, Benin was the first country to carry out a nationwide ITN campaign during the COVID-19 pandemic using CAT. Prior to the 2020 Campaign, Benin had conducted all its mass campaigns using paper-based systems and occasional crowding at distribution points. CRS provided technical and management support to and worked closely with Benin's National Malaria Control Program (PNLP) and National Coordination Bureau (INC). Over 27,000 campaign staff were trained on the use of digital tools. 3,382 smartphones were used to register over

three million households and develop a robust population database that was used to plan other campaigns – including the 2020 SMC Campaign. For the mass ITN campaign, each registration team was equipped with a smartphone to record the household's information, and each household was given a coupon containing a QR code that served as unique identifier. During the door-to-door distribution, adopted to reduce the spread of the coronavirus, the coupon was presented to the distributor, scanned, and the corresponding number of ITNs were given to each household. Information was sent through the platform to each household via SMS on how ITNs would be distributed and the importance of using them for the safety and health of the household. Using CAT, Benin achieved 94.16% coverage of registered households. The SMC campaign was also digitized and implemented in four health zones using the CAT platform and CRS is now supporting the Benin Ministry of Health Neglected Tropical Disease program to utilize the population database achieved during the ITN campaign and lessons learnt from the SMC campaign to digitize the Onchocerciasis campaign to prevent the general population against river blindness. These digitization efforts are funded by the Bill and Melinda Gates Foundation. More information can be found on Benin's 2020 digitized campaign in [this article](#), published by the Malaria Journal.

"... I've learned again and again that saving lives is the result of getting the smallest details—from the temperature of a vaccine to the address of a beneficiary—right. And Benin's new digitized bed net distribution program does just that by giving the government a powerful tool to manage a complex job."—**BILL GATES, APRIL 17, 2020** ([SEE MORE ON GATESNOTES](#))

The benefits of digitizing mass campaigns are numerous. Digitization enables more efficient, precise implementation of all phases of the campaign, including planning. A digital approach improves the speed of data collection and analysis, allows for remote real-time monitoring of field activities, supports evidence-based decision-making, and (in the context of the COVID-19 pandemic) facilitates quick adaption to a "no-touch" approach. Compelling value-added features of digitized campaigns are that the data obtained can be used in planning and conducting future campaigns, while the digital application may be reconfigured, and smartphones reused. In addition, the data may be used to update national health databases and inform integrated approaches based on the most up-to-date information. In the next three years, CRS will continue to work with national governments and other partners to apply the digital approach to health campaigns in more countries.