

InStrat's COVID-19 Mobile Application

Using Mobile Health (mHealth) Technology to provide Community Health
Extension Workers (CHEWs) in Ogun State with COVID-19 Training

Introduction

In recent years, Mobile Health (mHealth) technology has emerged as an effective strategy for delivering quality training to healthcare workers, particularly those in developing countries. COVID-19, in particular, has resulted in many countries using mHealth to equip primary healthcare workers with the knowledge and tools needed to respond to the virus in their communities (Istepanian et al., 2020). In Nigeria, for example, the [State Government of Ogun State](#) worked with [InStrat](#) and [Plus91](#) to co-design and deploy a COVID-19 Mobile Application that was used to provide primary healthcare workers, such as Community Health Extension Workers (CHEWs), with COVID-19 training (Olaniran et al, 2019; Otu et al., 2021).

Overview of InStrat's COVID-19 Mobile Application

Developed in 2020, InStrat's COVID-19 Mobile tutorial application was designed to: 1) Provide healthcare workers with accurate and regularly updated information about COVID-19; 2) Enable frontline workers, epidemic response officers, and strategic personnel to rapidly identify, screen, and manage those suspected of having COVID-19; and 3) Train health workers on specimen collection techniques and safety measures to observe when working in COVID-19 wards and quarantine centers. It was designed to run on Android Operating Systems and featured user interaction prompts to accommodate users with low literacy levels (Otu et al., 2021).





An android phone showing InStrat's COVID-19 mobile application's homepage

To develop content for the application, InStrat worked with the Foundation for Healthcare Innovation and Development (FHIND) to develop a COVID-19 training dashboard which was informed by guidance from the Nigeria Centre for Disease Control (NCDC), the US Center for Disease Control, the World Health Organization (WHO), and Johns Hopkins University. The content, which was regularly updated to ensure that healthcare workers had access to the most up-to-date information on the virus, was originally developed in English and then translated to Hausa, Igbo, and Yoruba (Nigeria's three major dialects). It covered the following topics:

- Description and origin of the novel coronavirus.
- Signs and symptoms of COVID-19.
- Risk factors for contracting COVID-19.
- Precautions against COVID-19.
- Specimen collection and management guidelines.
- A WHO COVID-19 tutorial video that provided additional background information for health workers.
- Official NCDC daily COVID-19 updates and case summaries.

To deploy the application, InStrat provided the Ogun State Primary Health Board (OSPHB) with a downloadable link that contained instructions for accessing and completing the training. The link was then shared with health workers via WhatsApp communication groups. Before and after completing the training, users were encouraged to complete a ten-question multiple choice pre-and post-tutorial evaluation that allowed InStrat officials to assess changes in their knowledge. An optional user satisfaction survey was also administered to healthcare workers to determine their user experience and satisfaction with the application. After successfully completing the training, healthcare workers were provided with certificates of completion that were co-signed by the Ogun State Commissioner for Health and InStrat's Chief Executive Officer. Between March 3 and April

12, 2020, the application was used to provide training to 311 healthcare workers (211 of which were CHEWs) in Ogun State (Otu et al., 2021). The application was then subsequently deployed at scale to healthcare workers in 25 Nigerian states (Otu et al., 2021).

Enablers and Barriers to Implementation

In total, 72 healthcare workers completed the optional satisfaction survey that was administered through the application. Out of these 72 users, 97% indicated that they were satisfied with the training, noting that it had provided timely and reliable information on COVID-19 that would allow them to rapidly identify and manage cases in their communities. Additionally, the certificates that workers received after successfully completing the training motivated other healthcare workers to enroll in the program. InStrat's existing relationships with key stakeholders and track record of addressing similar outbreaks in Nigeria (e.g., Ebola) also helped them cut through bureaucratic red tape that would have otherwise prevented or delayed the deployment of the application (Otu et al., 2021).

Despite these successes, there were a number of challenges that users and InStrat officials faced. In particular, users indicated that there was a need to integrate additional information on specific issues into the training, such as why the virus was so easily transmissible and how to navigate the absence of proper sanitization channels in semi-rural and rural areas. Additionally, certain health workers in rural areas lacked access to Android devices, making it difficult for them to access the training. To address this challenge, InStrat began working to develop a new version of the application that would allow multiple user registrations and enable healthcare workers to share their devices with one another. Lastly, certain health workers had limited storage space to run the application on their phones, making it challenging for them to access the training. To address this challenge, InStrat staff provided users with clear instructions on how to create space on their devices (e.g., deleting other applications and old media files) (Otu et al., 2021).

InStrat's COVID-19 Mobile Application's Impact

Ogun State's experience with InStrat's COVID-19 Mobile Application highlights the advantages of using mHealth to deliver widespread training and rapidly disseminate accurate and up-to-date information on COVID-19 to frontline workers. Additionally, issuing certificates to users who successfully completed the training helped incentivize additional workers to use the application to further their knowledge and skills on how to address the pandemic in their communities. In the future, this intervention could serve as a useful reference for countries that are interested in using mHealth technology to rapidly train and disseminate relevant information to frontline workers during times of crises. It could also pave the way for the continued integration of mHealth in the training and continuous quality improvement of frontline workers after the pandemic.

References

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