

# Strengthening Sierra Leone's commitment to digital transformation



1. A community health worker uses the MOHS Digital Classroom application. Photo credit: Last Mile Health

**Introduction** | An estimated 20,000 frontline health workers in Sierra Leone deliver essential health services across the country, extending primary healthcare access to remote and underserved communities.

Recognizing their vital role, the government of Sierra Leone launched a [National Digital Health Strategy](#) (2018) and a [Digital Health Roadmap](#) (2023) to optimize training and strengthen the delivery of care using digital health tools.

In 2023, Sierra Leone's Ministry of Health partnered with Last Mile Health to refine health worker training based on the organization's 16-year record of working alongside governments to equip and train the community health workforce.

Together, the Ministry and Last Mile Health laid the groundwork for a more informed and impactful approach to training, drawing on the insights from a digital health pilot powered by an offline mobile application. This approach has the potential to scale to all frontline health workers in Sierra Leone.

# Challenges and solution

## Challenges

The Ministry of Health has identified several challenges that limit the effectiveness of existing digital health tools for health worker training, including:

- + Fragmentation of digital health tools for the delivery of healthcare services
- + Limited personnel and resources for health worker training
- + Limited guidance and training on effective response to diseases and outbreaks
- + Lack of reference materials for health workers while in the field

In an effort to address these challenges, the Ministry of Health and Last Mile Health piloted an offline mobile application to train and equip the health workforce with essential knowledge and skills, resulting in important learnings for the entire health system.

## Solution | The MOHS Digital Classroom application

The Ministry of Health and Last Mile Health launched the MOHS Digital Classroom\* mobile application (powered by OppiaMobile, an open-source platform) in 2021 to train frontline health workers in Sierra Leone and provide them with interactive health information. Courses deployed on the application are accessible at any time, including offline and in remote settings.



Designed for frontline health workers, the application provides real-time access to continuous education and capacity-building courses, supports digital self-directed learning and training, and provides data analytics for performance monitoring that improve knowledge and skills.

The MOHS Digital Classroom application:

+ **Promotes health systems strengthening by enhancing the quality of training for frontline health workers**, improving the accessibility of health information and preparing health workers to deliver effective care to remote communities.



+ **Streamlines the delivery of sustainable Ministry-approved and context-relevant training to health workers** through one government-supported system, promoting integration of essential content and mitigating fragmentation



+ **Provides valuable insights into learners' experiences with digital learning** and offers essential data on activity, learner preference, and completion patterns for self-paced learning, allowing it to inform future digital learning initiative design



“Even though we are in a remote area, we are able to access the network at any time we want to use it. You will lie down in your room and go through your phone and do [whatever you want] to do on the module and get educated.”

—**Maternal and Child Health Aide,**  
Port Loko District

\*In 2023, Sierra Leone's Ministry of Health changed their name from Ministry of Health and Sanitation (MOHS, as abbreviated in the application's name) to Ministry of Health.



## About the pilot

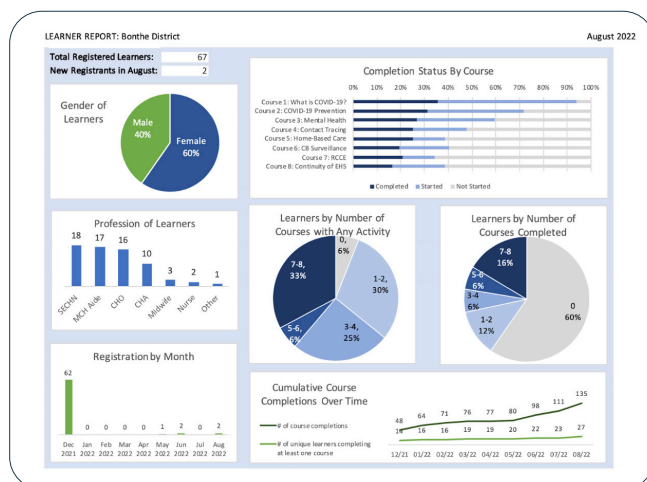
The MOHS Digital Classroom application was piloted during the COVID-19 pandemic with an outbreak and surveillance capacity-building course series designed to strengthen learners’ ability to identify, isolate, and manage COVID-19 cases as well as educate communities on prevention and control.

Using the application, the pilot provided adapted training content<sup>1</sup> to **549 selected frontline health workers and 19 district representatives across six districts** on key topics including COVID-19 prevention and control, mental health and psychosocial support, and continuity of primary care in the context of COVID-19.

The course series leveraged interactive activities, animations, and infographics to engage learners effectively while increasing their knowledge and skills. Quizzes embedded throughout the courses provided opportunities for learners to test their knowledge and receive immediate feedback to identify knowledge gaps and direct further learning. Learner data was shared with district teams through a district dashboard, supporting opportunities for additional coaching for learners. Following the pilot training, **average quiz and assessment scores improved across all courses.**

“At first, I didn’t even have the confidence to stand and speak to people. But with the help of the course, I have the boldness, and most of the questions that I was asked, I was able to answer.”

—**Maternal and child health aide**, Kono district

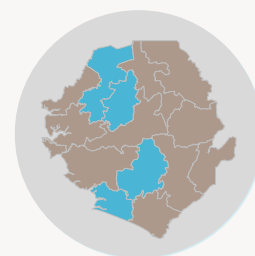


2. Sample district dashboard for Bonthe District from August 2022

## Pilot reach

**6 districts**

Kono, Port Loko, Bo, Bonthe, Bombali, and Karene



**549 learners** recruited to be trained on the application



**74%** of learners were female

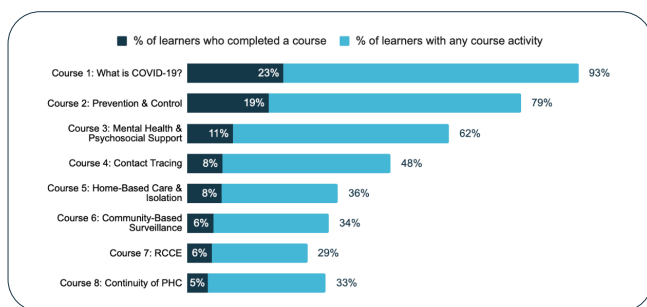


**19 representatives** from districts were trained to provide technical support to learners, reducing dependence on the central information and communication technology team

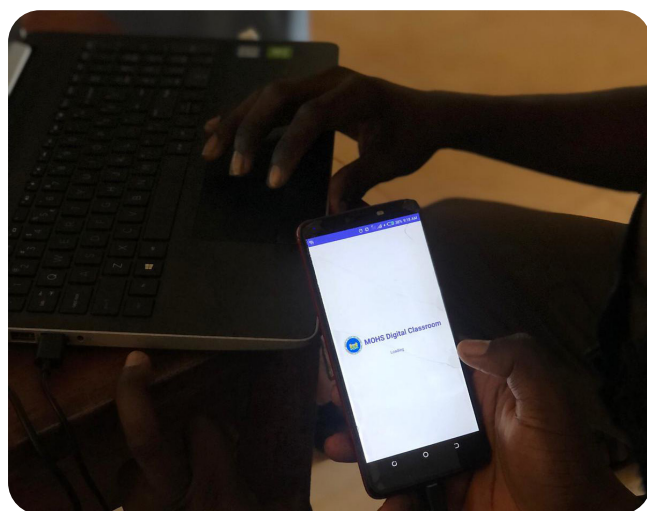
1 The full list of consortium members involved in this work include TechChange, Medical Aid Films, Translators Without Borders, CORE Group, UNICEF, and the Stanford Center for Health Education's Digital Medic initiative

# Pilot findings

Nearly all learners (94%) engaged with at least some course activity, but only 26% completed one or more courses. Activity and completions were highest for the earlier courses in the series. Reviewing learners' activity and completion patterns regularly can help stakeholders identify opportunities to increase learner engagement.



3. Course activity and completion, by course (N=549)



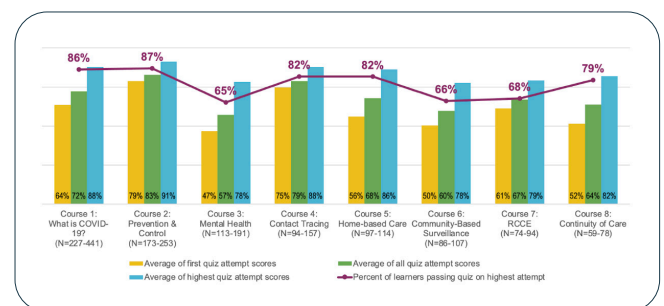
4. A community health worker uses the MOHS Digital Classroom application. Photo credit: Last Mile Health

Learners were largely satisfied with the courses and the application. Learners noted that content was easy to understand, videos helped improve concept comprehension, and quizzes allowed them to test and identify areas for review. Adapting content to match the needs and context is critical for learner satisfaction.

“The quiz tells you that you have not read well, so it will refer you to go and read again so you will understand.”

—Maternal and Child Health Aide, Kono District

On average, 81% of learners passed quizzes, which means they gained knowledge of key concepts from each module. By measuring knowledge gained and assessing learners' self-efficacy, the Ministry can understand how prepared learners may apply the information they learned.



5. Percentage of learners passing quizzes and average quiz scores, by course

“Anywhere you go it is accessible...the app is with me, in my pocket, on my bed, and when I wake up.”

—Community Health Officer, Bonthe District



\*Source: Post-course survey (N=721). Learners who completed the post-course survey may have been more satisfied with courses and less likely to experience challenges, so findings might not be representative of all learners' experiences.

# The Ministry's ongoing commitment to digital health

In 2023, the Ministry of Health formally recognized the MOHS Digital Classroom application as a trusted platform to support health worker capacity strengthening, and designated its technology unit as the primary government manager for the application.

To facilitate this, Last Mile Health trained **six information and communication technology (ICT) staff** in the maintenance of the application. This training oriented the staff to the tool and began to transition the management of the system to the Ministry. Training included how to:

- + Create a course, quizzes, activities, and content, and publish a course to the Oppia server
- + Side-load courses and media files; upload and optimize video files with HandBrake (open-source transcoder for digital video files)
- + Upload and manage user permissions in the Oppia server and the Moodle learning management system
- + Troubleshoot simple errors with publishing courses, populating cohorts, and uploading users

The training identified key ICT stakeholders, analyzed staff knowledge gaps, and provided targeted training to ensure staff are equipped with the internal expertise needed to manage and implement the application independently.

Working together with Last Mile Health and other core partners, the Ministry is creating structures and frameworks for digital health implementation and operationalization of its digital health policies and validated digital health roadmap. The roadmap serves as a guide, establishing a clear trajectory for digital transformation in its health system.

With the findings from the MOHS Digital Classroom pilot, the digital health roadmap, and the ongoing training of key stakeholders, the Ministry continues to prioritize digital health interventions as a means to improve healthcare delivery and quality of care.



## Planning ahead: Sustainability for the future

Last Mile Health continues to partner with the Ministry to achieve its vision for government-led digital health solutions in Sierra Leone:

- + Supporting the Ministry to implement pilot recommendations to inform digital applications and in-service training for health workers
- + Facilitating the full transition of the MOHS Digital Classroom application to the Ministry
- + Providing technical support to train the Ministry transition team
- + Supporting the Ministry's plans to scale the application to additional districts

Together with the Ministry, Last Mile Health continues to build exemplary innovations that expand access to primary healthcare by strengthening systems, training health workers, and improving the quality of care for rural and remote communities.

# Key features and functionalities of the MOHS Digital Classroom application

The [MOHS Digital Classroom Application](#) interface is simple to navigate and is optimized for users with low technology experience and connectivity.

Developed on an **open-source learning platform** (OppiaMobile) and architecture

**Lightweight android application** suitable for use on low-end Android devices, requiring minimal resources for installation

**Sync** enables aggregation of learner data into a central server and transfer of course files from one device to another

**Gamification** allows learners to see their points earned, position/rank among their peers, and badge awards for levels completed

**Offline application** lets learners access course content at any time, complete quizzes, and watch videos without an internet connection

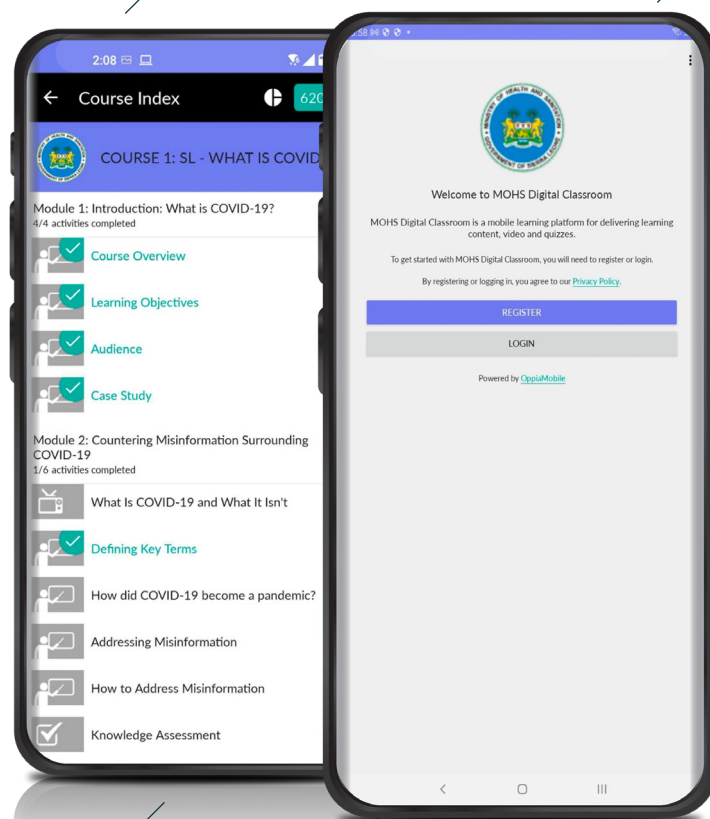
Continuous **knowledge assessments** track learner progress in a scorecard format

**Report generation for tracking completion** of activities and providing feedback

Passive collection of **learners' performance data** to limit disruptions in learning

Summary of learner data for tailored mentorship

Dashboard to **visualize learner progression**, time spent in the application and completion rate



For **more information** about this case study, contact:

Sierra Leone Ministry of Health: Capri Koroma, ICT Manager ([capri.koroma@mohs.gov.sl](mailto:capri.koroma@mohs.gov.sl)); Ahmed Saidu, Health Information Officer ([ahmedsaidu28@gmail.com](mailto:ahmedsaidu28@gmail.com))

Last Mile Health: Alpha Bangura ([abangura@lastmilehealth.org](mailto:abangura@lastmilehealth.org)) and Julie Krause ([jkrause@lastmilehealth.org](mailto:jkrause@lastmilehealth.org))

