Introducing: Enhanced COVID-19 Rapid Diagnostic Testing Workflows in the Community Health Toolkit

Countries around the world continue to grapple with the most effective way to access and analyze robust, centralized data around the spread of COVID-19. Meanwhile, we collectively face the critical need to respond quickly to local outbreaks, limiting the toll of the virus at the community level. COVID antigen Rapid Diagnostic Tests (RDTs) create the opportunity to collect data at a decentralized level for use in patient care, disease surveillance, and supply chain management, as well as for relevant use cases to support pandemic response. Empowering communities to respond to localized threats is crucial to reducing the continued toll of this prolific virus.

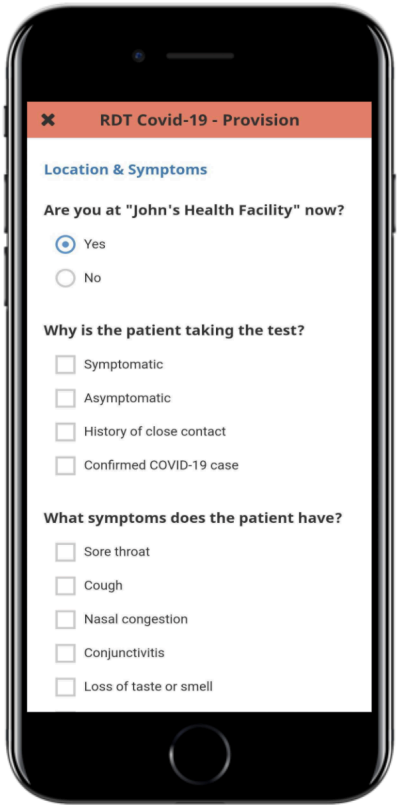
As part of the Access to Covid Tools (ACT) Accelerator, announced by the WHO Director General and world leaders, and whose Diagnostics Pillar is co-convened by FIND and the Global Fund to Fight AIDS, Tuberculosis, and Malaria, Medic was engaged to expedite the development of a reference app for tracking RDTs using open source technologies already deployed in LMICs at the community level.. The importance of getting the right resources into the hands of health workers and health systems is pivotal in our continued global battle against COVID-19, and future pandemics alike.

CHT App with COVID-19 RDT Workflows

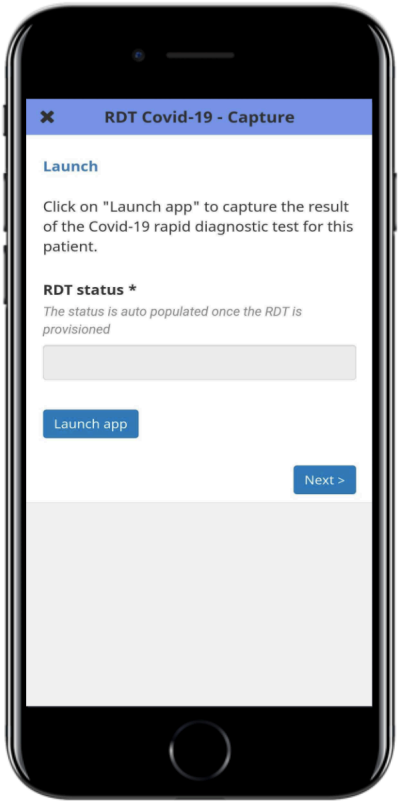
The app, powered by the Community Health Toolkit (CHT), has ready-to-use COVID-19 RDT workflows and allows customizations to fulfill future needs of the communities in which it is deployed. It's built using the open source CHT Core Framework where forms are easily configured to capture patient information, location (GPS), symptoms, and RDT results.

Because conducting RDTs must be a simple, streamlined task for health workers, Medic created a new feature in the CHT Core Framework where forms can be configured to open any third party Android application that will send back information. In turn, these third party apps will guide users step-by-step on how to properly administer RDTs and facilitate the capture of results.

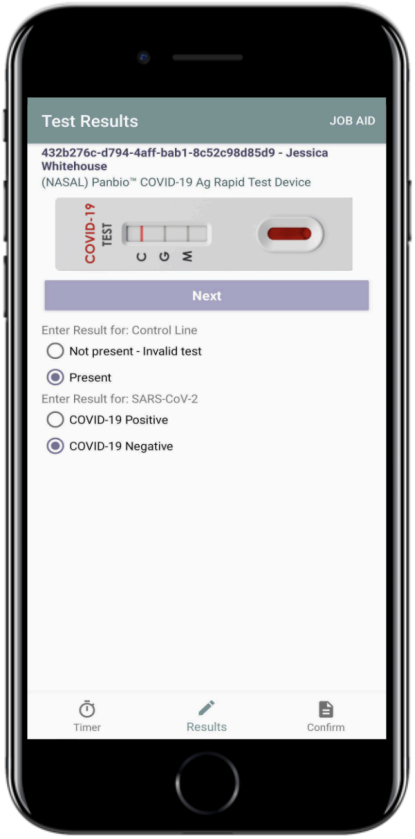
This CHT reference app has configured the forms to leverage Dimagi's Rapid Diagnostics Toolkit, which was built with support from FIND, as part of a previous collaboration for capturing and interpreting Malaria RDTs. This open source app provides visual guides on how to correctly use different types of COVID Antigen RDTs, enabling users to take pictures of the RDT devices and enter their results, sending them back to the reference app.



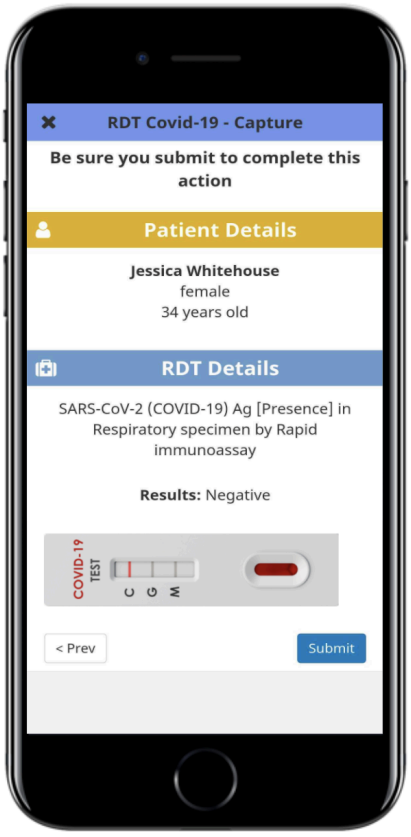
CHT App RDT COVID-19 - Provision



CHT App RDT COVID-19 - Launch RDToolkit app



RDToolkit App - Capture results



CHT App RDT COVID-19 - Results summary

Android App Launcher

The Android App Launcher widget is a way to create integrations faster with Android apps, available in CHT Core Framework v3.13+ and CHT Android v0.10+. It configures an Android Intent to launch a third party app on a mobile device. The widget will assign the app's response into output fields that will be saved when the form is submitted.

This new feature simplifies the complexity of creating integrations and unlocks the following advantages:

- No need to write code to connect with an Android app
- Researchers can conduct experimental integrations
- App builders can create prototypes to benchmark apps before deciding on one
- Health facilities can create workflows where forms seamlessly connect multiple apps with different purposes
- Enhancements can be applied as advanced solutions are made available

How test data can be used for driving decisions

Information saved by the COVID-19 RDT reference app can be visualized as aggregated data that is useful for multiple stakeholders, including health authorities and researchers. Visualizing accurate trends over time is essential for patient care assessment, disease surveillance, and supply chain management for the duration of the COVID-19 pandemic, and for future outbreaks yet to be seen.

CHT Framework has several ways to access aggregated data. For example, the application can be configured to use Targets, a user-friendly tool that provides a summary or analysis of the data in the submitted forms. For more technical users, an API is available to export data in JSON or CSV format. Furthermore, CHT Framework replicates the submitted forms into PostgreSQL which can be queried and used with data visualization platforms such as Superset.

Make sure to explore the documentation for more detail in all the available options.

[Add these video links as embed in the post]

> CHT app using COVID-19 Rapid Diagnostic Test: Starting a test
> https://youtu.be/3o5d7p9O9OE
>
> CHT app using COVID-19 Rapid Diagnostic Test: Capturing a result
> https://youtu.be/gpExUOJ6eQ0

Conclusion

Understanding the virus's spread in communities is the first step to creating effective response strategies. Collaboration between organizations is essential to quickly design and develop human-centered health tools like the COVID-19 RDT reference app. These tools are made to be accessible to any health system or technical solution provider, and the communities they serve – no matter the location or socioeconomic status of the population. This collective effort supports a pathway towards universal health coverage and the health and wellbeing of every community.