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An Introduction to CommCare & Jamaica Use Case

Jordan Lerner, Dimagi, Senior Project Manager

Denese Palmer, Ministry of Health and Wellness, Jamaica, Director, ICT Unit (Acting)

Albert Beckford, Ministry of Health and Wellness, Jamaica, Application, Infrastructure, and Integration Technical Lead

Webinar Format

- An overview of CommCare
- A use case from Jamaica
- Q&A

Dimagi & CommCare

- Introducing Dimagi and CommCare

- Overview: Dimagi Vaccine Solution

- Table of functional requirements

- Considerations for implementation support

- Typical implementation timelines

- Contracting options

- Cost Considerations

Hello!

Jordan Lerner

Senior Project Manager

Dimagi

Who We Are

An award-winning social enterprise founded in 2002 out of MIT and Harvard Medical School that supports frontline workers with innovative technology

On a mission to create sustainable impact for underserved populations through innovative technology solutions for frontline workforces

180+ Members

Dimagi's staff is based in offices in the United States (HQ), India, South Africa, and Ethiopia.

2,000+ Projects

We've supported thousands of projects in diverse sectors.

130+ Countries

Dimagi has supported projects in more than 130 countries across six continents.

Introducing CommCare

COVID-19 Response

Register new patient | Contacts needing a follow up | All suspected cases | Pending assignment

Cases needing phone numbers | Long term care facility Outbreak/Queue | Assign contact | Pending lab results

Register New Patient | Cases in Congregate Settings

All Confirmed Cases | Pending Lab Results

All Patients (Suspects and Cases) | All Contacts

400 million
People Registered

700,000+
Users

130+
Countries

2000+
Projects

The most widely-used open source, offline data collection and service delivery platform—built for the last mile[1]

Global Digital Good[2]
An established global good that has already been deployed in multiple countries

Effective for COVID-19 Response[3]
Recognized for turn-key ready applications for COVID-19 and a history of proven success with large scale deployments

Evidence Based[4]
75+ peer-reviewed studies have been conducted exploring CommCare's impact on frontline programs globally

1 Johns Hopkins University, 2 Digital Square, 3 Johns Hopkins University, 4 Dimagi

dimagi

CommCare Key Features

Works offline
Seamless workflows for end users without internet connectivity

Multilingual
Local language application translations and data capture

Open Source
Open source platform with free training tools and a community of CommCare users

Multimedia
Images, audio, and videos support low-literacy users with application navigation

CommCare for COVID–19 Vaccine Delivery
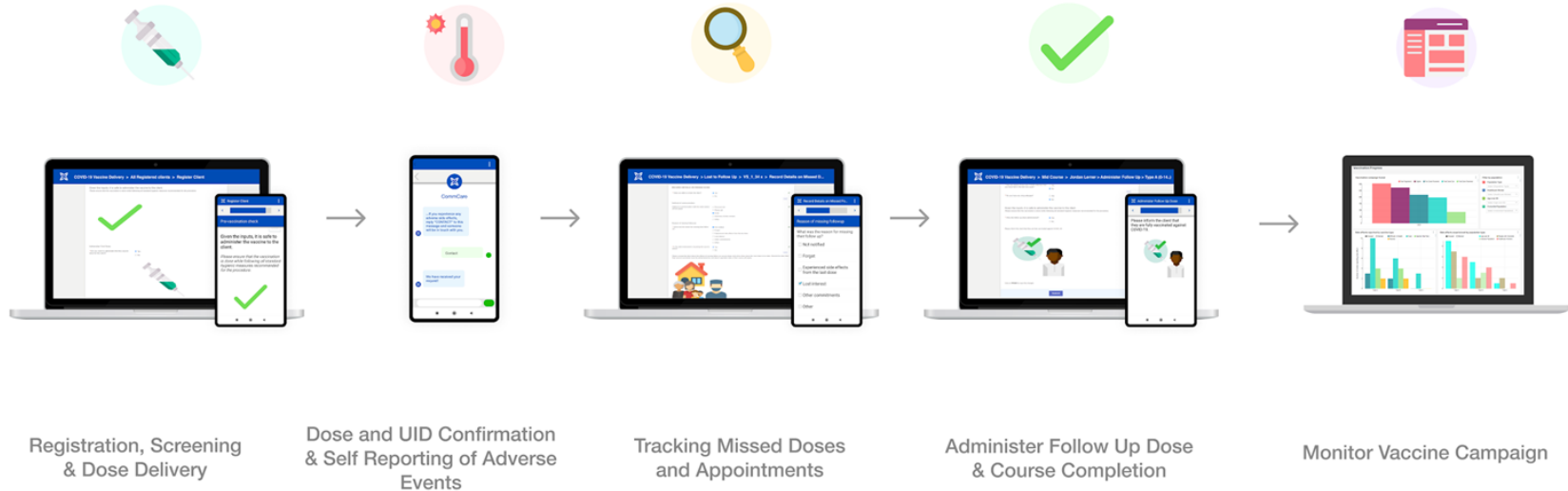

Vaccine Administrator

Outreach Team Member

Vaccine Recipient

Official (dashboard user)

Registration, Screening & Dose Delivery

Dose and UID Confirmation & Self Reporting of Adverse Events

Tracking Missed Doses and Appointments

Administer Follow Up Dose & Course Completion

Monitor Vaccine Campaign

Problem Statement

The COVID-19 pandemic has disrupted the delivery of routine immunizations, leaving communities vulnerable to the emergence of vaccine preventable diseases[5].

More children missed out on routine immunizations in 2020 than in 2009[1]

- Immunizations are **highly successful and cost-effective** public health tools[2]

- Vaccines are available for the **prevention of 25 diseases**, with 15 more in development[3]

- Globally, they are responsible for a **consistent decline in deaths** that can be wholly or partially prevented through vaccination[4]

Communities are vulnerable to vaccine preventable diseases[5]

- Disruptions in routine immunization due to COVID-19 can lead to **secondary health crises**[5]

- Unvaccinated individuals are **susceptible to vaccine preventable diseases** such as measles and rubella[5]

- The risks are particularly acute for children; **in 2020, 23 million children** missed out on basic vaccines[1]

1 UNICEF, 2 GAVI, The Vaccine Alliance, 3 World Health Organization, 4 Our World in Data, 5 World Health Organization

The Solution

There is a need to maintain our focus on the equitable delivery of COVID-19 vaccines while also restoring previous rates of routine immunization.

The Dimagi Vaccine Solution equips countries with tools to make progress on both COVID-19 and routine immunization in parallel, without one happening at the cost of the other.
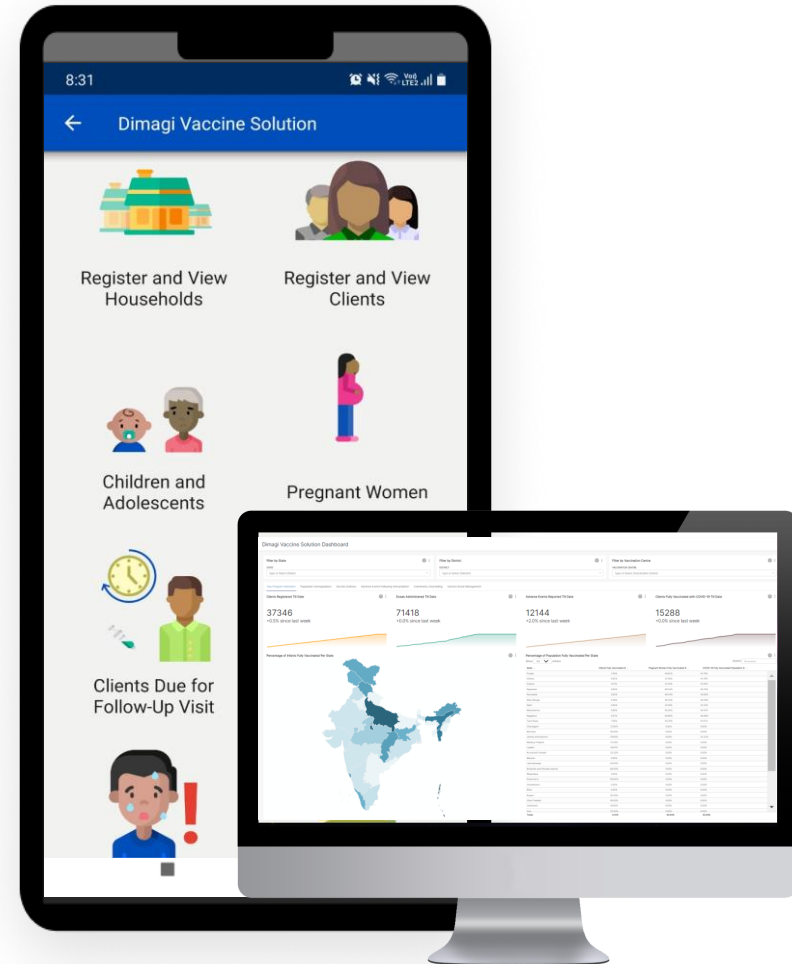
Modular Application Design

Six micro-applications—each designed for a different immunization challenge:

1
Client
Registry

2
Vaccine
Delivery

3
Adverse Events
Following
Immunization

4
Community
Mobilization
& Counseling

5
Healthcare
Worker
Training

6
Facility
& Stock
Management

Partners can **select and configure** each micro-application based on local requirements.

Core Solution Components
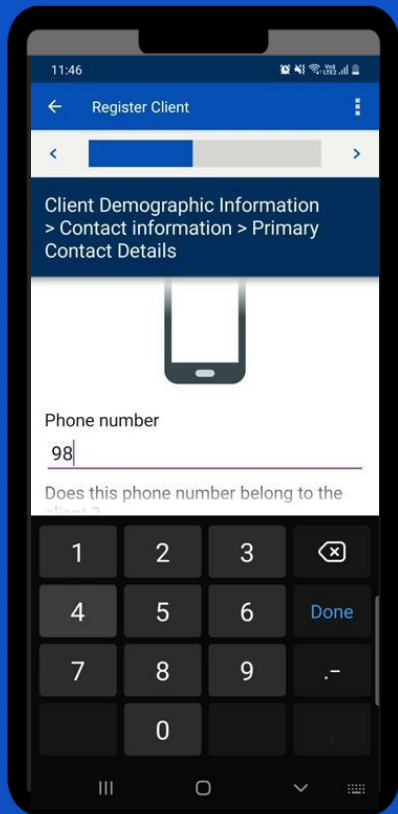

Mobile and Web Application
Frontline Workers
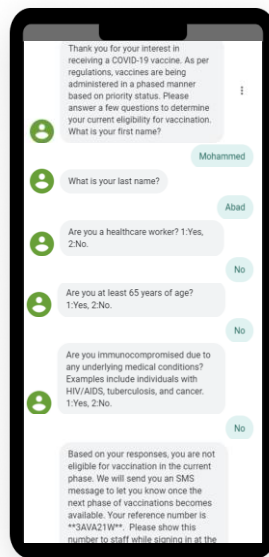
Messaging
Direct to Clients

Analytics
Government Stakeholders

Client Registry

APPLICATION AND MESSAGING

1   Register households/clients at a facility, with the option to capture touchless biometrics at the time of registration

2   Clients can register remotely using SMS or WhatsApp

3   Record historical vaccination data

DASHBOARD AND INTEGRATIONS

4   Integrate with national birth registries to ensure that children receive timely reminders for routine immunizations

Vaccine Delivery

APPLICATION AND MESSAGING

1 Configure vaccine schedules according to global and local guidelines

2 Administer vaccine doses and send clients automated reminders for follow-up appointments

3 Integration with IVR service to make appointment reminder and follow up calls

DASHBOARD AND ANALYTICS

4 Analyze immunization completion and dropout rates

Adverse Events Following Immunization

APPLICATION AND MESSAGING

1   Report adverse events at the facility or through client messaging channels

2   Workflow for health officials to investigate adverse events

3   Integration with IVR service to make appointment follow up calls and enable call–based AEFI reporting

DASHBOARD AND ANALYTICS

4   View reports of adverse events following immunization by vaccine type and client category

Community Mobilization & Counseling
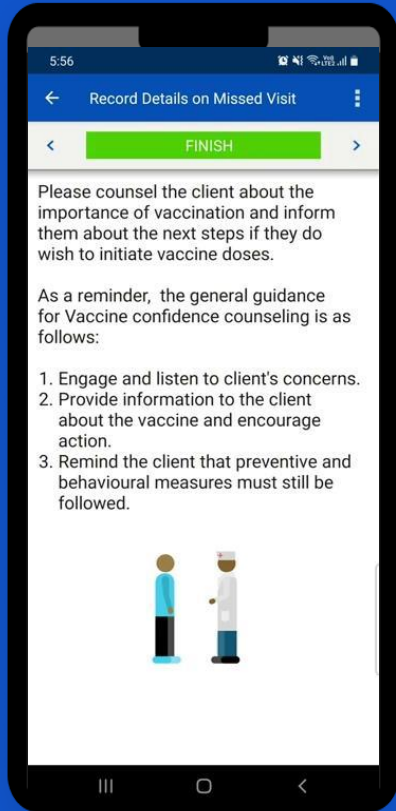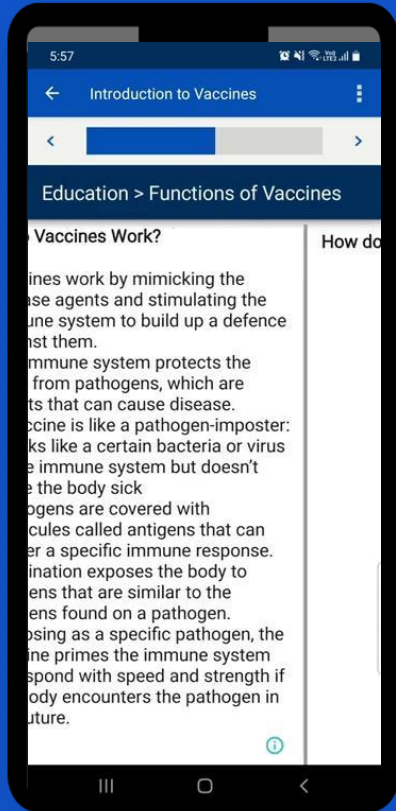

APPLICATION AND MESSAGING

1 Vaccine confidence counseling to increase vaccine uptake

2 Course completion tracking and follow up

DASHBOARD AND ANALYTICS

3 View the number of community events organized and participant details

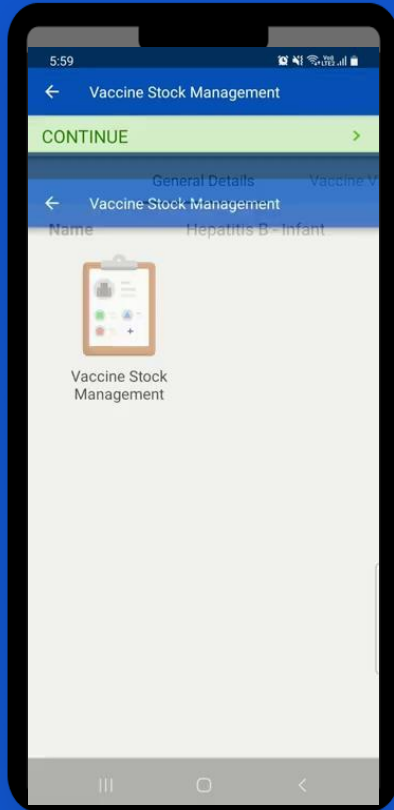**4** Analyze vaccine hesitancy rates and reasons reported for vaccine hesitancy

Health Worker Training

APPLICATION AND MESSAGING

1 In-app and WhatsApp training on vaccine related topics for health care workers

2 Access to open source course content created by WHO

Facility Management & Stock Monitoring

APPLICATION AND MESSAGING

1   Facility registration and preparedness assessments

2   Basic reporting on stock availability and logistics

DASHBOARD AND ANALYTICS

3   Wastage of vaccine doses

4   Stockouts of vaccines and other critical supplies

Key Program Indicators

Visualizations provide a high-level overview of key program indicators for vaccination programs

- Registrations

- Doses administered

- Adverse events reported

- Clients fully vaccinated

Vaccine Delivery Analytics

Visualizations detailing vaccine service delivery and vaccination status

- Doses administered

- Immunization status (partial, fully)

- Clients due for follow up doses

- Vaccination drop off rates

Adverse Events Analytics

Visualizations detailing adverse events following immunization

- Adverse events reported

- Side effects reported

Community Engagement Analytics

Visualizations detailing community mobilization and counseling activities

- Events organized

- Participant types

- Presence of vaccine hesitancy

- Reported reasons for vaccine hesitancy

Stock Management Analytics

Visualizations detailing stockouts and oversupply of vaccines, with the ability to view data at the facility level

- Stockouts reported

- Oversupply reported

Benchmarking Functionalities

Facilitates decision support for vaccine providers	Yes
Enables the scheduling of appointments, with validation checks to ensure follow up appointments are booked within appropriate timelines	No, but it can integrate with 3rd party tools that assist with scheduling
Captures reasons of refusal for vaccination, as well as access issues such as stock outs	Yes
Facilitates patient monitoring and produces individual patient reports	Yes
Contains data on both vaccinated and unvaccinated individuals	Yes, we can feed data into a 3rd party reporting tool
Displays aggregate data by geographic and/or administrative levels	Yes, in a 3rd party tool

Benchmarking Functionalities

Exchanges data through globally recognized standards such as FHIR	Yes
Produces or exports data consistent with that needed for microplanning	No
Produces data visualizations, such as charts and graphs, on vaccine coverage and other relevant program indicators	Yes
Captures Events Attributable to Vaccination and Immunization (EAVIs) or Adverse Events Following Immunization (AEFI)	Yes
Produces digitized, verifiable vaccine certificates	Yes, a 3rd party tool generates them
Supports track and trace of vaccines via the use of standards such as GS1	No

Value-Add Features

Dimagi is developing CommCare apps to accompany the core solution

Wrap-around solutions include:
- Integration with Digital Vaccine Certificates
- Integration with Payments
- Integration with DHIS2
- RapidPro, Turn.io and Whatsapp Integrations for messaging
- EngageSPARK integration for interactive voice response (IVR) for automated direct-to-client calling
- Biometric scanning

Health worker registries, routine immunization registries, and health management information systems will support community-based engagement and turnkey integrations.

COVID-19 Q&A

Water, Sanitation and Hygiene (WASH)

Sequence for Putting on PPE

Mental Health & Stress Management

Risk Education for Families

Hosting Options

SaaS

Dimagi provides software and data storage

Benefit from Dimagi's 24-hour support, best-in-class security and regular platform upgrades. Partner can start collecting data immediately.

- HIPAA, GDPR, ISO and SOC-2 security compliance provided by Dimagi
- Immediate platform access
- 24-hour support from Dimagi Support Team
- Recurring, predictable cost

Hybrid

Dimagi manages software, data archived in country

Data is moved from Dimagi's environment to server provided by the partner for long-term storage and / or analysis. Partner can start collecting data immediately.

- HIPAA, GDPR, ISO and SOC-2 security compliance provided by Dimagi
- Immediate platform access
- 24-hour support from Dimagi Support Team

On-Prem

Partner manages hardware and software

Partner is responsible for setting up a data center, deploying CommCare HQ, releasing new versions, and ensuring system is on and available at all times. Start up time is variable and dependent upon partner.

- No security or up-time guarantees - depends on team managing infrastructure
- 6-10 months until data collection can begin
- Personnel required to maintain system

Implementation Support & Timelines

- Implementation approaches can be customized to meet the needs of partners.

- Options range from self-driven implementation to full implementation support

- Timelines are dictated by the level of implementation support and can range from 2 weeks to 18 months

- The Dimagi Vaccine Solution is designed to be quickly customized for more rapid roll-out, though this is still dependent on the level of adaptation needed

Contracting Options

SaaS

- Partners can independently adapt and deploy the Dimagi Vaccine Solution as a SaaS offering

- Implementation guides and onboarding offerings are available

- Simply pay a monthly hosting fee, which also includes Dimagi's standard support SLA

Dimagi Services

- Partners can contract our Delivery team to provide hands-on program implementation support, including adapting the Dimagi Vaccine Solution

- Contract timelines are dependent on the support needed

Cost Considerations

The cost to set-up and maintain the Dimagi Vaccine Solution or other CommCare mobile application is driven by the implementation model, as well as the complexity of the application

SaaS

- For the Dimagi Vaccine Solution, partners pay a subscription fee of $1200 per month, which includes a CommCareHQ project space, 500 mobile workers, and access to Dimagi Standard Support SLA

- Onboarding packages are also available and range from $1,500 to $7,500.

Dimagi Services

- Partners can contract our Delivery team to provide hands-on program implementation support, including adapting the Dimagi Vaccine Solution

- Partners will pay the monthly hosting fee, as well as the cost of Dimagi's time.

- Additional costs may include the integrations, messaging, etc.

THOMPSON TOWN HEALTH CENTRE

MINISTRY OF HEALTH & WELLNESS

Utilizing CommCare for Vaccine Administration in Jamaica
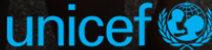
unicef
for every child

In **March 2021**, Jamaica became the **first Caribbean country** to receive a shipment of **COVAX-procured vaccines**.

The **Ministry of Health and Wellness** (MOHW), **UNICEF,** the **Private Sector Vaccine Initiative** (PSVI) and **Dimagi** joined efforts to combat the spread of the virus through the rapid deployment of **CommCare.**

Covid19 Impact and What Did We Do?

- ✓ COVID19 affected the socio-economic situations in Jamaica

- ✓ Government approved Vaccine Deployment and Vaccination Interim Plan

- ✓ Established Vaccination Management Task Force comprising of 6 workstreams

- ✓ Appointed ICT expert as chairman of the information systems work stream to establish a digital platform for the vaccine roll-out

- ✓ Jamaica's COVID-19 implementation programme got underway

Engagement with the Private Sector

The Private Sector Vaccine Initiative is a mechanism to support Jamaica's COVID-19 vaccination efforts.

PRIVATE
SECTOR VACCINE
INITIATIVE

#GetTheFacts.
#GetTheVax.

The PSVI encourages every Jamaican to get the right information about COVID-19 vaccines and get vaccinated at the first opportunity.

CommCare & COVID-19 Vaccine Delivery

In 2020, Dimagi developed a solution to capture **vaccination details and equitable distribution of COVID-19 vaccines**.

The solution is currently used at **national scale in multiple countries** with **over 1.4 million vaccine doses tracked** in Jamaica.

Jamaica

- Launched in May 2021
- 1,496,493 doses recorded (by October 20, 2022)
- The CommCare mobile application was deployed in over 150 vaccination sites with 2,000+ users
- Superset reporting dashboard
- Digital COVID-19 certificate launched in December 2021
- Trained 150+ trainer of trainers
- Implemented change management and adoption of the digital tools
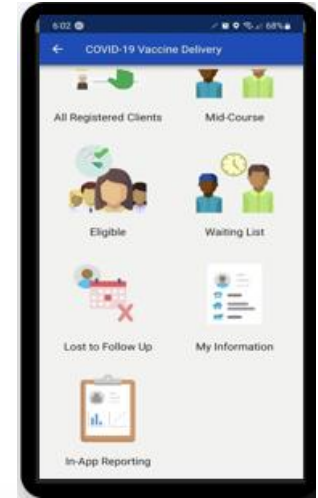
Jamaica Timeline

COVID-19 Vaccine Monitoring Discussions and Implementation (Feb to May 2021)

February 24th, 2021	February 25th, 2021	March 2nd, 2021	March 5, 2021
Initial Request	1st Meeting with Government	Invitation to Bid	Meeting with the PM

1st Meeting with JCO	Update to LACRO Covax group	Vendor Selection	Implementation
February 25th, 2021	February 26th, 2021	March 5th, 2021	Present

Deployed Architecture
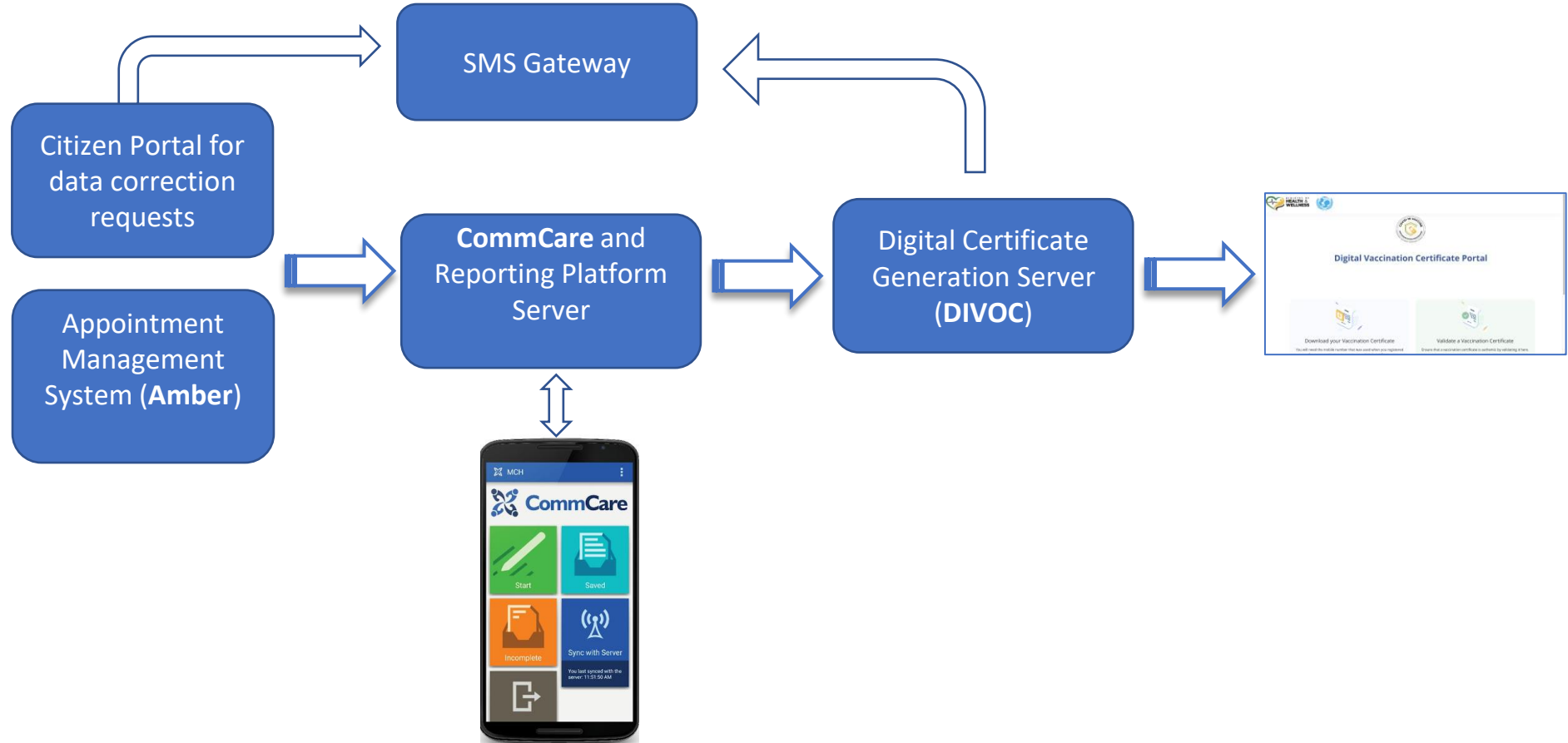
MoHW User: Workflows
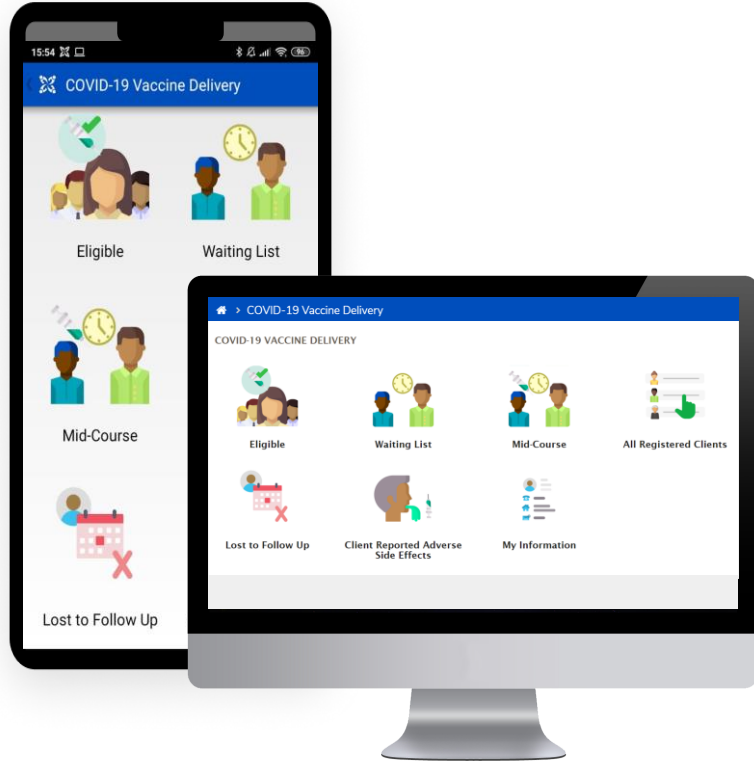
Screening
- Register clients
- Screen for eligibility
- Maintain waitlist

Vaccination
- Record dose delivery
- Schedule next dose
- Track Course Completion

Follow up
- Record adverse events
- Lost to follow up tracking

Certificate
- Electronic COVID-19 vaccine certificate

Implementation Challenges

- Lower digital literacy across the health workforce

- Resistance to the adoption of technology

- Nascent digital health architecture and HIS

- Low level of internet connectivity across the island

Photo: Emily Nicholson, UNICEF DICE, 2022

Alignment of stakeholders across autonomous health regions

Pressure to deploy quickly

Training Strategy

A training-of-trainers model ensured **150 master trainers** were equipped with the knowledge and skills to train more than **1,000 healthcare workers** across the island, including medical officers, primary **healthcare nurses, medical records officers, and information technology officers**.

Capacity building sessions with the MOHW were conducted on trouble-shooting within CommCare.

MoHW User: Register Client

- Register clients

- Screen for eligibility

- Maintain waitlist

Screening

* Please select the vaccination site at which this beneficiary was vaccinated   ABC Health Services

Combobox

Client Demographic Information

* First name

Free response

Middle Name

Free response

* Last name

Free response

The reference number for the client is **C0XNGFT**.

Please ask them to note down the reference number for future follow ups with the facility.

Date of birth details

* Date of birth

* Gender   ○ Male

○ Female

MoHW User: Screening

- Register clients

- Screen for eligibility

- Maintain waitlist

Screening

Clinical Questions

Bleeding disorder or on blood thinners — ● Yes ○ No — ✓ — Clear

Recent vaccine in last 2 weeks — ● Yes ○ No — ✓ — Clear

Have you ever had an allergic reaction to a vaccine? — ● Yes ○ No — ✓ — Clear

Describe the reaction — [Free response]

Is this person for vaccination? — ○ Yes ○ No

Is there any other reason this person might not want to be vaccinated? — ● Yes ○ No — ✓ — Clear

Please describe —

Case Detail

CLIENT DEMOGRAPHICS   OTHER DETAILS   CLINICAL   COMORBIDITIES
VACCINATION DETAILS   PAST COVID DETAILS   REPORTED SIDE EFFECTS

Diabetes-Mellitus	Not Specified
Hypertension	Not Specified
Cancer	Not Specified
Heart Condition	Not Specified
Asthma	Not Specified
Chronic Lung Disease Non Asthma	Not Specified
Sickle Cell Disease	Not Specified
Vascular Disease	Not Specified
Other Comorbidities	Not Specified

Continue

MoHW User: Maintain Waitlist

- Register clients

- Screen for eligibility

- Maintain waitlist

Screening

MoHW User: Vaccination

- Record dose delivery

- Schedule next dose

- Track Course

Vaccination

MoHW User: Follow up

- Record adverse events

- Lost to follow up tracking

Follow up

cine Test App > Lost to Follow Up

Background color
Click here and then select a color from the color palette. This color is used with the eraser and for shape fills.

LOST TO FOLLOW UP

Search

NAME	CLIENT ID	DOB	DAYS SINCE MISSED FOLLOW-UP	CLIENT FOLLOWED UP?
		2004-01-01	71	No
Follow up Date Test		1989-03-01	126	No

MoHW User: Certificate

- Produce COVID-19 vaccine certificate

- Search COVID-19 vaccine certificate

- Print COVID-19 vaccine certificate

Limitations and Technical Challenges > Learning and Evolving

CommCare needed to be configured for clients seeking second doses from different facilities

Workflow version changes were initially slow to sync with mobile apps, requiring manual synching

Rapid bulk data entry to reduce the backlog of paper records resulted in data entry errors

Unanticipated changes in health policy, such as the mixing of vaccines, created the need for workflow configuration changes

Promising Next Steps

- Health workers originally resistant to technology are now welcoming the digitization of additional programs.

- Landscaping readiness assessment being planned for the digitization of routine immunization activities.
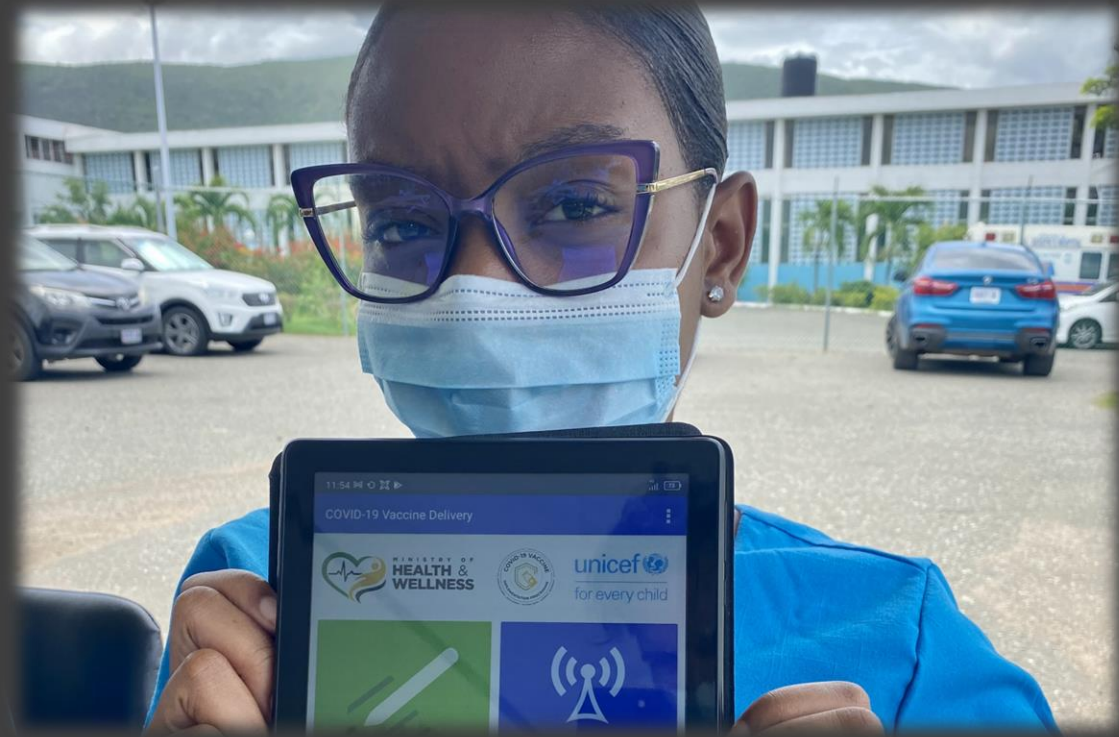
Enabling factors and necessary parallel investments

- **ICT infrastructure** (electricity, internet, hardware)

- **Financial** (long-term sustainability and maintenance costs)

- **Social and political** (change management/training of health staff, verifiable commitment from the authorities, legal frameworks)

- **Program management requirements** (processes in place to take action based on data)

Photo: Karin Kallander/UNICEF/2022

From this....

....to this!

Photo: Karin Kallander/UNICEF/2022

Q & A