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LAUNCHING A DIGITAL HEALTH PLATFORM TO MANAGE THE NATIONAL COVID-19 VACCINE DEPLOYMENT IN JAMAICA

n response to the global COVID-19 pandemic, UNICEF – on behalf of the Global COVAX Facility – is leading the largest vaccine procurement and supply operation ever taking place. The Facility currently has 190 countries participating, of which 92 are low- and lower middle-income countries, and work is ongoing to ensure equitable access to 2 billion doses of the vaccine by the end of 2021.

One year after confirming its first COVID-19 case, Jamaica became the first Caribbean country to receive a shipment of COVAX-procured vaccines, in March 2021, to boost its national vaccination program. By the end of June 2021, Jamaica has received 124,800 doses through COVAX, in addition to vaccines donated and procured from other countries.

With a population of just under 3 million, Jamaica has recorded a total of 50,039 COVID-19 cases (June 27, 2021) and suffered 1,065 COVID related deaths to date. In early 2021, the country experienced record numbers of new infections, major hospitals were at capacity and school closures continued.

With the COVID-19 pandemic having a devastating impact, directly and indirectly, on the well-being of Jamaican children, UNICEF Jamaica was quick to adjust its programming and join in the Ministry of Health and Wellness' (MOHW) efforts to combat the spread of the virus.

A PUBLIC-PRIVATE PARTNERSHIP FOR EQUITABLE VACCINE DISTRIBUTION

Through a multi-lateral partnership with the Private Sector Vaccine Initiative (PSVI) – formed specifically to address the COVID-19 crisis in Jamaica – and the MOHW, UNICEF supported the development and introduction of a digital vaccine information management platform for Jamaica's national COVID-19 vaccine deployment. In an incredible demonstration of strong leadership and drive, it took just over two months for the CommCare digital platform to be adapted for Jamaica and deployed in hospitals, health centers and vaccination sites.

JAMAICA SNAPSHOT TODAY

400

Installation and configuration of 400 tablets operating in vaccination sites.

160,000

160,000 paper vaccination records were digitized and entered into the application.

150 & 1,000

Training and onboarding of 150 trainers and more than 1,000 health professionals (medical officers, doctors, medical records staff, etc.) and community health aides across the island.

261,267 | 174,110: 1ST Dose
87,157: 2ND Dose

As of end-June 2021, a total of 261,267 COVID-19 vaccines (174,110 first dose and 87,157 second dose) have been administered in Jamaica, covering 9 percent of the target population with at least the first dose since roll-out on March 10.

LIVE

Real-time monitoring and vaccine administration data available to various levels of the MOWH organizational chain.

Minister of Health and Wellness, Dr. the Hon. Christopher Tufton, UNICEF Jamaica Representative, Mariko Kagoshima, and PSVI Chair of Logistics and Operations Committee, Peter Melhado, at the official launch of the CommCare platform, June 14, 2021.

Photo: Donald de la Haye

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Today is such a momentous occasion. In this particular challenge of COVID-19 that we face, this partnership is an illustration of the benefit of all of us putting our heads together. We leveraged UNICEF's experience in vaccines, and leveraged the private sector way of thinking, to work on behalf of the people of Jamaica to create a formula that the world can learn from.

Dr. the Hon. Christopher Tufton,
Minister of Health and Wellness

We can be very proud of this partnership. We have demonstrated that it is possible to digitalize and modernize health systems in a very short time. The strong leadership from the Government and the private sector made it happen. Now, with each dose, we help protect Jamaican families from the virus and its secondary effects, which harm children now and their future prospects.

Mariko Kagoshima,
UNICEF Jamaica Representative

I think every government around the world has realized that COVID may not be an isolated event. The world has changed. We, in the private sector, must play our part in transforming systems. When COVID happened, we felt compelled to participate in a meaningful way, to get Jamaicans vaccinated and back to a normal, productive and fully functioning society.

Peter Melhado,
PSVI Chair of Logistics and Operations Committee

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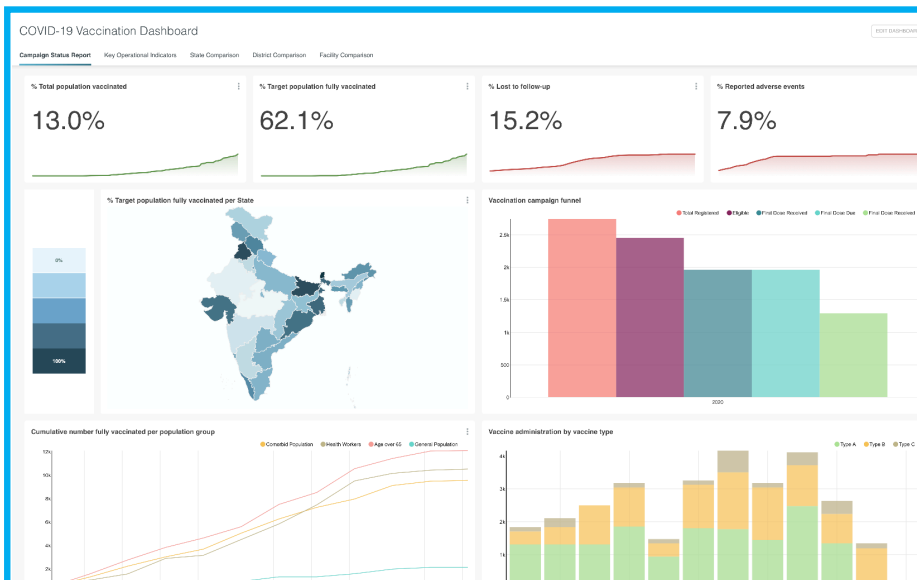
CommCare sample dashboard, illustrating type of data collected and visualized for COVID-19 vaccine delivery

THE RECORD-SPEED JOURNEY TO A DIGITAL HEALTH PLATFORM

Understanding the momentous and urgent task ahead of them, the Government of Jamaica (GoJ) needed a software platform in place to efficiently and securely manage the national vaccination roll-out. As part of their MoU with the government, PSVI was tasked with finding the best provider. UNICEF brought on board Dimagi, a long-time partner in digital health, which had developed a secure, open-source platform called CommCare, and a template application adjustable to local contexts.

Once localized for the Jamaican context, and integrated with the existing, separate scheduling platform, the MOHW now had an end-to-end digital COVID-19 vaccine process to manage and record scheduling, patient screening, vaccine administrator checklists/documentation and reporting. Leading up to the introduction of CommCare, 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.

As the vaccine roll-out in Jamaica had already started by the time CommCare was introduced, there was the hugely important task of entering around 160,000 manual ledgers in the digital system. Seen as critical to complete before individuals were to receive their second dose, PSVI and UNICEF hired extra data entry teams to complete this task.

Following a two-week transition period, the CommCare system was officially handed over to the GoJ on June 14, 2021 and is now operational in all of Jamaica's vaccination sites. Already, health workers and vaccine recipients are enjoying the immediate benefits of a secure and time-saving digital process. With easy access to real-time data and analysis of key issues, like numbers of doses administered, reporting of adverse events following vaccination, and demographical and geographical uptake, the MOHW can immediately make informed decisions and respond accordingly.

Photo: Ross Sheil/UNICEF

> Using the tablet saves me a lot of time – it's about three times faster than the paper register. If someone has been vaccinated at another site, or they have lost their vaccination card, I can just pull up all the information on the tablet. Everything is quicker and more accurate.

Yonique Malcolm,
Community Health Worker,
St Joseph's Hospital vaccination site, Kingston.

To support the equitable distribution and delivery of the COVID-19 vaccine, Dimagi has developed an open-source digital system, on which the Jamaica implementation is based, to support the upcoming campaign to vaccinate billions of people in low- and middle income countries. Following protocols and guidance from COVAX, WHO, CDC and other sources. The solution supports three key phases of vaccine delivery: screening, vaccination and follow-up:

Client tracking:
Health administrators will use CommCare-based mobile apps during each encounter with a client being vaccinated.

Messaging:
A direct-to-client (D2C) component will guide clients through each step via SMS, WhatsApp and other platforms.

Analytics:
Real-time analytics will help monitor vaccine delivery, track rates of missed appointments and lost-to-follow-up, and ensure critical segments are vaccinated first.

ACHIEVEMENTS IN THE JAMAICAN CONTEXT

Public-private partnership

The strength of the public-private partnership between the GoJ, PSVI and UNICEF has demonstrated that digitalizing and modernizing public health administration is possible in a very short timeframe. The high level of engagement, strong leadership and the multi-sectoral effort were critical in the successful launch of an equitable and inclusive digital health platform for the deployment of COVID-19 vaccines. The success of this initiative could potentially open the door to modernizing the entire routine immunization system, going beyond the COVID-19 vaccine alone.

Technical & implementation

The CommCare application quickly proved to be robust and captured the data required to manage and report on the vaccination roll-out. The digital platform ensures equitable distribution, as data shows exact uptake in hard-to-reach and vulnerable populations, which allows for immediate action to be triggered.

With a workforce now familiar with the platform, CommCare has great potential for being expanded for the routine vaccination program, with relatively simple adjustments to the system.

User motivation & adaptation

Positive changes in health worker attitude to a digital system were observed almost immediately in the majority of users. Benefits such as improved workflow at vaccination sites, and the ease and efficiency of online end-of-day reporting are great motivating factors. Ministry-level officials are effectively managing the reporting after hand-over and have a clear understanding of navigating the backend of the platform.

Photo: Ross Sheil/UNICEF

> "
> To me, anything that helps speed up the process is a good thing, so we don't have to sit and wait.
> "
>
> Peter Gordon with his goddaughter, Jamelia Simpson (6), St Joseph's Hospital vaccination site, Kingston

LESSONS FOR RAPID IMPLEMENTATION OF A DIGITAL HEALTH PLATFORM

Public-private partnership

With an obvious and transparent objective to quickly recover lost productivity, coupled with a strategic business-minded approach, the prominent role played by the private sector was key to achieving the launch in just two months. Equally important was leveraging the public health and digital intervention expertise of UNICEF, and the GoJ's willingness to lead and partner in order to achieve the stated goal. This three-way collaboration has been critical to the Jamaica experience.

Technical and implementation

Due to the urgency and resulting time constraints, it was necessary to initially work through two separate systems – paper and digital – which created one of the biggest bottlenecks in the program. Ideally, a program would launch with one system only. With this rarely being realistic, it is necessary to invest heavily in clearing the paper backlog, for example, in order to optimize the digital system as quickly as possible.

Having a well documented process in place allowed for the CommCare software to be relatively easily retrofitted to the GoJ's existing processes, meaning that the digital system essentially automated the existing process flow. This helped facilitate change management, as users did not have to first un-learn the old system and then adapt to a significantly different one.

The CommCare platform does not allow for scheduling of vaccinations, and therefore needed to be integrated with the scheduling system over time. This was largely facilitated by UNICEF bringing in experts from all relevant areas, including logistics, IT, and public health for the early mapping and localizing of the software.

It is important to think beyond just data and technology when implementing a digital health platform. Maintaining a goal of providing value to frontline health workers, how the system can best facilitate their work on the ground and support service delivery is key to user adaptation.

The definition and creation of reporting requirements are important to consider early in the process, and concurrently while executing. The GoJ has a global requirement to report on COVID-19 cases, which required interim reporting and double work when implementing the digital platform. More investment in reporting upfront would have allowed for early configuration of the system for central reporting purposes.

Change management and stakeholder management

Beyond focusing on technical aspects, it is important to understand the underlying culture of the organization that is implementing a digital health platform. Change management approaches were hugely important to the successful implementation in Jamaica, and full-time staff should be dedicated to this key area. Understanding the culture and people, and what motivates them, should be at the center of how changes are influenced. Celebrating incremental successes and constant enforcement of the benefits motivates and energizes stakeholders to move on to the next task.

A change management specialist can furthermore help ensure that all stakeholders, those impacted and impacting, buy-in to the program, remain informed and their skills utilized. Demonstrating this role in the Jamaican context has moved change management up

> In the beginning we had a lot of resistance to introducing a digital system. One regional director was completely against it, and adamant not to support it in her region. After a lot of coaching and demonstrations she gradually warmed to the idea. Now, she is the biggest advocate for the solution, because she has seen the benefits from a management perspective.

Dunstan Bryan,
Permanent Secretary,
Ministry of Health and Wellness

the agenda to the highest levels in the MOHW, highlighting its importance to successfully handle future crises.

User motivation and adaptation

Transitioning an entire workforce – backend and frontline – over to a digital system is a huge undertaking, and expectations should be managed accordingly. Through the cascade training approach, so-called super users, or influencers, were successfully identified to help motivate their peers in adapting to a digital system.

It is important to also consider different age groups of end users, and their typically varying levels of skills in handling technology. Where familiarity and skills are low, resistance to adapting a software solution will be high. Training design and materials must take that into consideration and include basic elements, such as how to switch on and operate a tablet, and allow more time for this for certain groups.

Fully engaging MOHW personnel and health workers from central to the field level early on was a key lesson in the Jamaican context. Conducting systematic training and gaining buy-in into the platform system at different levels is critical, especially when introducing new technology. The solution may be the technology, but there is always a human side to consider first. It is critical to prioritize user-friendliness, all the way down to ensuring the tablet is charged, the software is installed, and connectivity is available if required, and to ensure a clear supportive supervision structure is in place.

UNICEF organizational lessons

The UNICEF team had standing meetings, initially on a daily basis then twice a week, with key members of staff, ensuring a very high level of synergy and internal support, which translated directly into speedy response on the ground.

" For UNICEF, this process has showed us that it's possible for a small office to really dream big. Usually, we shy away from such big opportunities because we do not have enough resources and capacity. But for this initiative, I was able to tap into expertise at the regional office and the headquarters, and support came very, very quickly. Even within the Jamaica office we mobilized the entire team, everybody. That was a key to success. We are all feeling really proud now. That was also a lesson for me; when efforts and successes are shared, it really triggers energy. "

Mariko Kagoshima,
UNICEF Jamaica Representative

Photo: Ross Sheil/UNICEF

Minister of Health and Wellness, Dr. Christopher Tufton, along with UNICEF Jamaica Representative, Mariko Kagoshima, and Dr. Bernadette Theodore-Gandi welcome the first shipment of COVID-19 vaccines from the COVAX Facility.

" The goal of vaccinating some 1.9m Jamaicans is a goal that represents one of the largest mobilization exercises in this country. The partnership that introduced the CommCare platform in Jamaica has created a formula that the world can learn from. It's a really good story, and in the context of panic and concerns around this virus, that makes it even more meaningful. If there is a lesson that we have learned from COVID-19, it is that healthcare has to change, we cannot do things the traditional way. Having this digital platform today represents a real paradigm shift. We are realizing what we have started, we are setting up so many things to come, which is why I think it is such a momentous occasion. "

Dr. the Hon. Christopher Tufton,
Minister of Health and Wellness