



CASE STUDY

How ComUnity Helped South Africa's Health Department Collect and Report COVID Data

The challenge

As the COVID-19 pandemic emerged in 2020, the South African National Department of Health (DoH) and the National Institute of Communicable Diseases (NICD) lacked a comprehensive clinical surveillance and reporting platform. They needed to rapidly connect with clinical facilities and understand what was happening in terms of:

- the impact of the virus,
- details of patients, symptoms and co-morbidities,
- the demographic profile of patients,
- what treatments were working.

This data was needed so epidemiologists could model the country's response from a treatment and resource planning perspective, and so they could respond as effectively as possible to the threat of the developing virus.

The solution

Because there wasn't anything in place at the time, a new solution had to be found. The solution had to start working quickly and efficiently in the collection, analysis, and dissemination of data for decision-making to respond to the virus. This clinical surveillance and reporting platform became known as DATCOV.

Selection of ComUnity

Microsoft was working with the NICD which had funding support from international donors. Microsoft had worked with ComUnity on its digital service delivery platform which runs on the Microsoft Azure platform. It was Microsoft that recommended the ComUnity platform to the DoH and NICD so they could get working quickly, and ensure high quality at a national scale.

How the project started

ComUnity staff met the stakeholders and key epidemiologists at the NICD to get their requirements on Thursday 26 March 2020, the day before the country went into lockdown. That night the DoH initialised the ComUnity Rapid Digitalisation Platform in Microsoft Azure. The next morning, Friday, ComUnity started to build the first instance of the platform. Working through the weekend, a test version was available the following Tuesday. The first full version was released before the end of the week. The platform was rolled out to key public hospitals, enabling healthcare workers to interact with the platform directly through application interfaces to collect customer information. The information was stored in the ComUnity platform where it was cleaned, curated, then organised and analysed. Information was fed back to the ministerial committee and then also into the clinical community, so they could see what was working and how they should be responding based on the epidemiology modelling.

Rolling out the project to the whole country

The next challenge was to extend the reach of the platform beyond just national hospitals to provinces and private healthcare organisations. Connection was done through an API to pull information from the systems. APIs were also implemented at other clinical facilities, like care homes.

This phase enabled the platform to collect data from almost every single clinical facility in the country – about 4500 facilities. This near-real-time data coming into the platform was organised for presentation to key decision-makers. The data was curated and provided back to the clinical facilities so they could share what they learnt from the epidemiological modelling exercise.

Continual evolution of the platform

As the project stakeholders and ComUnity team learnt more about the pandemic and its impact, the platform needed to keep evolving to meet for the new needs of the various partners involved. As a result, the service was broadened and deepened. What became a requirement was to include other services, for example, finding available beds so people could be sent to the right facility quickly.

The ability of the platform to rapidly address new requirements came when the Omicron variant first appeared, which was in South Africa. Within two weeks, the DATCOV team identified the variant and could respond quickly. This was because all the information was coming in, being collated, curated and analysed, and then shared across the ComUnity Platform. It also achieved significant international recognition of the South African healthcare sector and the great work done by the DoH and NICD teams.

What parts of the product were used?

The data-centric nature of the ComUnity Platform enabled it to curate the data, organise, analyse and present it to decision-makers and give back to the healthcare facilities, so that their understanding could be improved.

For this, all aspects of the ComUnity platform were used and operated via the cloud in Microsoft Azure, including the provisioning and management of Azure cloud infrastructure and services. The data platform capabilities enabled complex data modelling, curation and management. This included managing bulk data ingestion and transformation via file imports and APIs.

The ComUnity platform operations layer was used by DATCOV, including user management and access control. The business layer of the ComUnity platform was used to optimise business operations and support digital workflows and processes. This layer also connected people, organizations and resources across this data platform ecosystem.

The platform's experience layer provided web and native applications, messaging through SMS, email, and chat support. Data visualization was enabled through Power BI and targeted in-app dashboards, while structured reports were built and delivered to regional, provincial and national stakeholders.

The ComUnity Platform core pulled everything together and helped to streamline and accelerate the delivery of digital operations. The developer and operator interfaces, as well as the business management interfaces, streamlined the way that both technical and non-technical jobs were done.

Results and Benefits

Undoubtedly, DATCOV saved many lives and prevented potential long-term effects, thanks to the speed and accuracy with which the ComUnity platform positively impacted all stakeholders. Another benefit was being able to find available beds so people could be sent to the right facility quickly.

The ComUnity platform provided rapid time to market and time to value, enabling information about the pandemic to be available quickly and becoming indispensable for modelling the response to the pandemic.