



ACT Health uses GS1 standards to create innovative solutions to fight COVID and build trust with their population

Challenge

When the COVID-19 virus hit Australia, the Australian Capital Territory's health system (ACT Health) faced the challenge of containment, testing and administering vaccinations.

Solution

The ACT Health team acted quickly to leverage existing tools and, at the same time, put in place new processes, systems and a contact tracing app that took advantage of its knowledge and existing use of GS1 standards.



6 hour
turn around for COVID testing results



27,000+ sites
identified by Global Location Numbers where visitors can "check in" using the contact tracing app



15 days
to develop a vaccination system where vaccine barcodes are scanned



4 contributors
to successfully care for its population and patients: staff, infrastructure, innovation and GS1 standards

A very good foundation

ACT Health serves a population of approximately 440,000 people in the Australian Capital Territory and about 200,000 in the surrounding regional areas. Three hundred kilometres south of Sydney, ACT Health has three main hospitals with approximately 1,200 beds. The Canberra Hospital (the largest of the ACT Health hospitals) has the second busiest hospital helipad in Australia, receiving patients from rural New South Wales as a major trauma centre.

For more than 13 years, ACT Health has been on the forefront of implementing and using GS1 standards, integrating standards into many of its business and clinical processes. The health system has worked to assign GS1 identifiers for staff members and patients, as well as all its locations, from receiving points in pharmacies to ward storage closets. It also makes use of GS1 barcodes applied by manufacturers to pharmaceuticals and medical devices by scanning them at different points of care within its hospital environments.

"GS1 standards are providing a very good foundation for us," says Peter O'Halloran, Chief Information Officer, ACT Health. "I get excited by standards—not only for how they have helped us in the past, but how they are also making a difference for us in our COVID-19 response."

Testing with quick results

Throughout the pandemic, all the states and territories of Australia have focused on preventative and containment measures like testing and contact tracing and, at the same time, increasing vaccination rates in the population in readiness for the "new normal"—living with COVID.

ACT Health has followed that national direction. "We're using specimen labels, collected during tests in drive-through testing centres and other testing sites, and leveraging GS1 standards to actually get those specimens straight into the analyser in a machine-readable format," explains Mr. O'Halloran.

“Over time, we have been able to refine our processes, leveraging standards and the turnaround time for test results, which depending on demand, can be as little as 6 hours.”



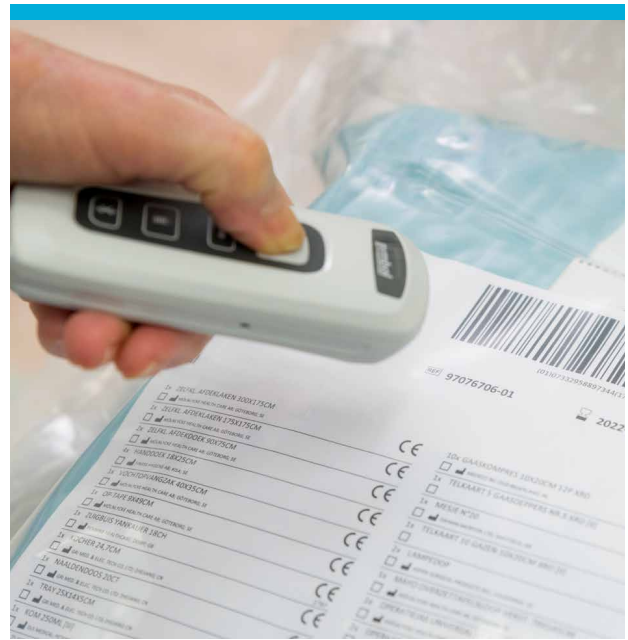
Peter O’Halloran,
CIO, ACT Health

Based on the health protocols, it is required that people quarantine as soon as they know they have had possible contact with a COVID positive person, have been at an exposure site or if they have symptoms. That quarantine period will end when they receive the appropriately timed negative test results, as defined by health protocols. “With test results reduced from 48 hours to now only taking overnight, this reduced time has had real-life implications for people and their families,” says Mr. O’Halloran.

Building trust with contact tracing

Being able to identify the contacts of positive cases is a foundational pillar to the Australian response to COVID. Another GS1 standard, the Global Location Number or GLN, has supported the health system’s contact tracing application. Using manual processes, such as sifting through handwritten records, produced a huge challenge for ACT Health staff when trying to trace people’s whereabouts and visits to locations.

“ACT Health came up with a simple smartphone app that allowed people to ‘check in’ at locations and put our people in control,” explains Mr. O’Halloran. “People can walk up to a venue, and scan a QR code to register their attendance. If needed due to a positive case visiting a location, the data can be provided



directly to our contact tracers. In the ACT with a population of about 440,000, as of October 2021, we’ve seen more than 27,000 venues registered and 75 million check-ins.”

During recent COVID-19 outbreaks, the contact tracing app has proven to be highly useful. In fact, three other states and territories in Australia have adopted the app for their own contact tracing activities. The ACT team designed and developed the app for the three jurisdictions on a cost recovery basis, recognising the benefit of having an interoperable app able to be used across multiple states and territories. “Half of Australia is now using the app,” explains Mr. O’Halloran. “Sharing the app means that when vaccination targets are met, we are helping to open up the country.”

Since the app uses GLNs, the ACT Health team implemented a central registry, shared by all the states and territories leveraging the app. When someone scans the code, the system knows it’s a code from the “XYX” location. The data is sent directly to the contact tracers in that jurisdiction.

“It’s simple and easy, since we based the app on standards,” says Mr. O’Halloran. “It’s exciting—not just the technology and standards—but the outcomes are what’s really exciting us. How can this help open up the country safely? How does this improve patient outcomes? How does this let us get on top of an outbreak quicker?”

ACT Health strongly promoted the app to ensure that people understood the benefits. “It’s all about engaging with the community. Building their trust has been essential for all that we’ve done.”



When ACT Health from Australia was faced with the COVID-19 virus, the health system lost no time making use of GS1 standards when developing a contact tracing app, identifying more than 27,000 sites with Global Location Numbers (GLNs). And, in only 15 days, the team developed the system and process for scanning vaccine barcodes to administer vaccinations, linking them to the electronic health records of patients.

Getting jabs in arms

It was 27 December 2020 when Peter O'Halloran got the call from the head of ACT's Health Directorate saying that vaccines were arriving in February 2021, and it was "all hands on deck" to plan for their arrival and administration to ACT Health's waiting population.

Coincidentally, the team was in the process of implementing a new Epic electronic medical record system. This offered the ideal opportunity to create an electronic vaccination record, rather than introducing a new manual process.

"We implemented the entire system for vaccinations from start to finish in 15 days," recalls Mr. O'Halloran. "This included capabilities for scheduling and administering vaccinations."

When ACT Health received the first shipments of vaccines in February, the team was relieved to find the packages were labelled with GS1 identifiers encoded in GS1 barcodes. "Until we received them, we didn't have absolute surety that the vaccines' packaging would be marked with GS1 barcodes," says Mr. O'Halloran. "The supply chain in those early days was working very hard to ramp up capabilities to bring vaccines to many countries across the world. We had to react quickly when we received deliveries."

"It was a relief that we could use our system and scanners to read the barcodes, do all the patient safety checks, and upload all patient and vaccine information into the EMR system. It was amazing."

Peter O'Halloran,
CIO, ACT Health

Peter O'Halloran and his team are working to ensure ACT Health's legacy pharmacy inventory management system is integrated in their vaccine management process. They have also developed capabilities to load data into the Australian Immunisation Register (AIR), which is a national database containing all the details about those who have been vaccinated. The registry will also be used to issue "vaccine passports" to Australians who are planning to travel.

As of 26 October 2021, ACT is leading the nation with in excess of 99% of the 12 years and older population having had a 1st vaccine dose and 89.3% having had their 2nd dose. In addition, the ACT has administered significant number of vaccinations to citizens from the surrounding region in New South Wales. The ACT has administered more than 800,000 doses.



Contributors of success

Even with all the challenges the ACT Health team has faced, Mr. O'Halloran is quick to point out that GS1 standards and barcodes have been a key foundation. "Standards help us deal with all we have to do."

"What has contributed to our success? One, we have a phenomenal workforce that met the COVID-19 challenge and continues to do so every day in what can be very challenging circumstances.

"Secondly, we have the infrastructure—not only the IT technology but also the infrastructure of GS1 standards for identifying people, locations and products. Standards have been key, helping us to ensure that the risk of patient-safety issues is reduced and, in fact, have not occurred. We've been able to use barcodes when we're injecting people to make sure it's the right product going to the right patient.

"And, the last ingredient that worked for us is innovation.

"Our overall response has been to plan, practice, refine the plan and then practice again. Our community is working together to fight a once-in-100-year battle, and I feel incredibly fortunate to be contributing."



About the authors



Peter O'Halloran,
CIO, ACT Health

Peter O'Halloran is the Chief Information Officer for ACT Health, the government agency responsible for the public health system in Canberra, Australia's capital. He is responsible for over 250 systems, serving 10,000 staff who operate across three public hospitals with over 1,200 beds and 40 community facilities.

Mr. O'Halloran joined the Australian Public Service in 2006 in the National Health and Medical Research Council before moving to the National Blood Authority where he was appointed as the inaugural Chief Information Officer and was responsible for the provision of services to all Australian hospitals. He joined ACT Health in 2016 and since that time has embarked on a complete overhaul of all ICT services and systems with a complete replacement of all core systems currently underway, guided by the Digital Health Strategy that was launched in May 2019.



Katrina Keep,
Senior Director,
ACT Health

Katrina Keep is the Senior Director, Office of the Chief Information Officer, Digital Solutions Division at ACT Health. Ms. Keep is an inclusive leader with a background in public relations, stakeholder engagement and executive management, with 20 years' experience working in the federal and territory governments, health and IT sectors. She has contributed to and led the delivery of a range of transformation projects throughout her career, including the design, development and implementation of the COVID-19 Check In apps for the ACT, Northern Territory, Tasmania and Queensland governments.



Peter McNiven,
Executive Branch
Manager, ACT Health

Peter McNiven is the Executive Branch Manager, Technology Operations for ACT Health, Digital Solutions Division at ACT Health. He is responsible for all ICT operational requirements for the territory's public health system covering over 42 established sites and numerous temporary and popup sites that have been required during the current public health emergency. Mr. McNiven has over 30 years in the Health industry, starting out as a Pathology scientist in remote areas before moving to the ACT and continuing to work in Pathology. He moved into ICT to run regional Pathology, covering the ACT and South East NSW Public Pathology network for 21 public and multiple private hospitals. He then moved into whole of ACT Government ICT leadership roles responsible for health systems and oversight of significant health building infrastructure development. He is now leading a significant overhaul of hosting and system delivery guided by the Digital Health Strategy.

About the organisation



ACT Health caters for a diverse population of over 400,000 that geographically encompasses Australia's national capital Canberra and its highly 'transient' population. There has been significant investment in key infrastructure via new technologies and new hospitals and The Canberra Hospital (TCH) campus in recent years to support the increasing requirements of digital health as well as ensuring continued improvements to safety.

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