Queensland Health

Integrating one of the world's largest POCT networks with POC Informatics

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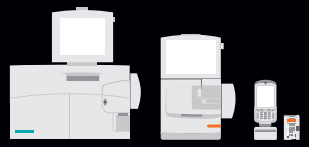
Case Study

SIEMENS Healthineers

Digitalizing Healthcare with POCcelerator Data Management System

Queensland Health:

Over **250** healthcare sites spread across almost **2 million** square kilometers



300 POCT analyzers

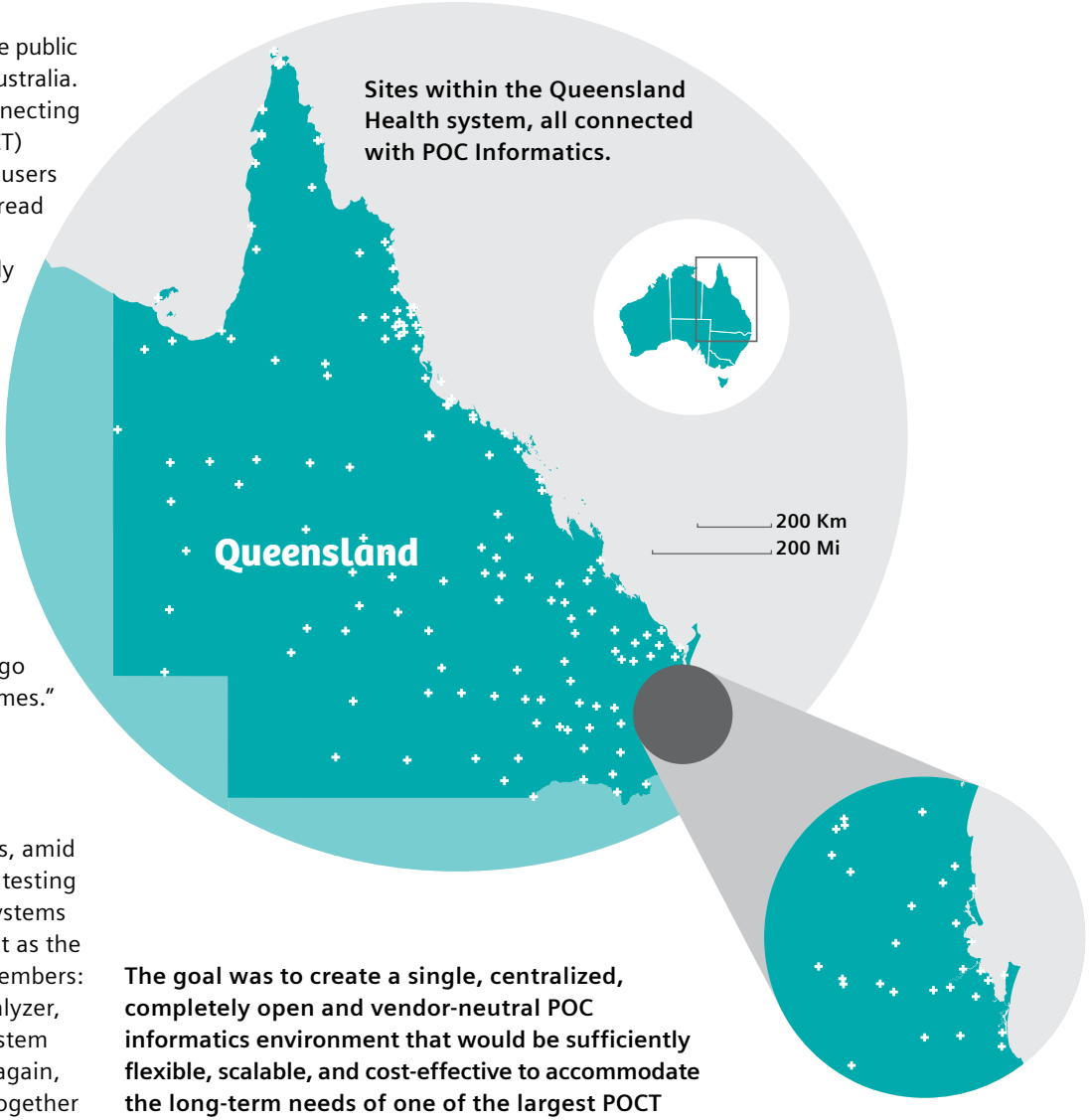
Over **10,000** POCT blood gas analyzer operators

4500
tests per day

Background

Queensland Health operates and administers the public health system for the state of Queensland in Australia. The health system faced the challenge of connecting and managing 300 point-of-care testing (POCT) blood gas analyzers operated by over 10,000 users at more than 250 Queensland Health sites spread over Australia's vast east coast and inland region. These POCT analyzers run approximately 4500 tests per day, producing large volumes of patient and QC test result data that must be validated and transmitted to the headquarters lab information system in Brisbane.

A major challenge was the relative lack of resources and support in areas further inland from Queensland's east coast. Point of Care Coordinator Cameron Martin explains: "We work across many [regions]. If you are living on the coast, you have access to big hospitals, modern equipment, lots of support for pathology and radiology. The further you go from the coast, the thinner that support becomes."



Problem

Operator Management

In 2001, Queensland Health began deploying handheld devices to some of the remote areas, amid concerns about monitoring the quality of the testing done and the challenge of how to keep the systems up to date. These issues grew more prominent as the number of operators increased. Cameron remembers: "We hit the [4000-operator limit] on each analyzer, so our solution at the time was to split the system and then we considered splitting the system again, but we really wanted to try and keep things together and add the capability to put other instruments on."

The goal was to create a single, centralized, completely open and vendor-neutral POC informatics environment that would be sufficiently flexible, scalable, and cost-effective to accommodate the long-term needs of one of the largest POCT networks in the world.

Testing quality was a real problem in the more remote areas. This was largely due to the mobile, transient nature of the operator workforce, many of whom were hired through staffing agencies and moved frequently from job to job. Cameron recalls that it was difficult to keep them trained and to track their training, and testing quality suffered as a result.

Device Management

Prior to the installation of the POCcelerator™ Data Management System, oversight of instruments used across the different sites in the Queensland Health system was weak, with many instruments unaccounted for. Cameron describes a common situation in which site personnel would purchase an analyzer, use it for a time, and then due to poor oversight abandon it in favor of something else. The result was "orphan" systems lying unused and essentially forgotten due to not being accounted for in a data management system.

Solution

In 2014, after much consideration, Queensland Health chose the POCcelerator system to consolidate their middleware. Ensuring long-term stability with no performance issues throughout such a widely distributed network required a carefully planned IT infrastructure. The Queensland Health point-of-care and IT teams and the LIS manufacturer worked together with the product specialist to identify a system that would meet the needs of all stakeholders. IT experts then employed the POCcelerator platform and its integrated Meditrac™ technology to design a tailor-made solution.

Increase Workforce Productivity

After years of seeing error rates rise, Queensland Health was able to install an online training program in 2010. Now, by adding the POCcelerator system, they can not only train operators remotely but also manage operator access and precisely track their training, so they know which operators are current and which are not. Cameron explains: "They get three warnings through POCcelerator. If they ignore them or they don't do it, then they find that their enrollment gets shortened, so they're forced to go back and redo the training program. That's been a fantastic tool because we're managing operators by exception, rather than blindly targeting everyone."

Optimizing Clinical Operations

Queensland Health sought to identify and implement a solution that would seamlessly connect and manage a range of instruments, from handheld to lab systems. These include blood gas, urinalysis, and diabetes testing systems from a variety of manufacturers, including Siemens Healthineers, Abbott, Alere, Nova Biomedical, and HemoCue/Radiometer.

Since installing the POCcelerator system, Queensland Health has realized significant economic benefits, including a 5% increase in cost recovery through reimbursements.

Installation of
POCcelerator

cost recovery through reimbursements

Also, with the addition of the POCcelerator system to their IT infrastructure, Cameron estimates that, between the three point-of-care staff members at Queensland Health, they've gained back the equivalent of a full 8 hours a week of coordinator time:

8 hours/week
x 52 weeks/year
x 44/hour
= $18,304/year

Transforming Care Delivery

The installation of the POCcelerator system has not only improved the operations of the Queensland Health system but has improved access to care across the country. By creating a reliable Point of Care Ecosystem™, instruments in the remote areas are used more frequently and the results are recorded more accurately. In a region where the nearest pathology lab is 500 kilometers away and roads can be impassable for months, the ability to reliably produce quality assured test results locally is critical in improving patient outcomes. As Cameron says, "By making the system perform better, we can help deliver them a more reliable service in those areas."

With better tracking of operator training the POCcelerator platform has created better trained operators which produce higher quality results. Cameron explains that since point-of-care can never be 100% accurate they must rely on operators to reduce errors.

Installation and Ongoing support

Thanks to the careful project preparation, it took only 2 weeks to complete the basic installation (implementing all interfaces) and another few weeks to remotely complete additional adaptions.

The support provided for Queensland Health's POC Ecosystem™ has exceeded expectations. According to Principal Integration Officer Rhys Skinner, "The support we have around our IT implementations has been outstanding. From the initial input into the design specification through to the statewide implementation/ cutover, nothing has been too much for the team. The POC informatics specialist's expertise, attention to detail, and ongoing operational support makes them a pleasure to work with."

"What has also saved money were the improvements in testing quality, which led to less errors, less waste, less repeated tests, and better patient care. The situation in Queensland Health like any public health system is that we all share from the same bucket of money, so it is important that all parts of the care chain work together to improve process, minimize waste, and be fiscally responsible."

Cameron Martin
Point of Care Coordinator

At Siemens Healthineers, our purpose is to enable healthcare providers to increase value by empowering them on their journey toward expanding precision medicine, transforming care delivery, and improving patient experience, all made possible by digitalizing healthcare.

An estimated 5 million patients globally benefit every day from our innovative technologies and services in the areas of diagnostic and therapeutic imaging, laboratory diagnostics, and molecular medicine, as well as digital health and enterprise services.

We are a leading medical technology company with over 120 years of experience and 18,000 patents globally. Through the dedication of more than 50,000 colleagues in 75 countries, we will continue to innovate and shape the future of healthcare.

Product availability may vary from country to country and is subject to varying regulatory requirements. Please contact your local representative for availability.

The outcomes achieved by the Siemens Healthineers customers described here were achieved in each customer's unique setting. Since there is no typical hospital or laboratory, and many variables exist (e.g., hospital or laboratory size, case mix, level of IT adoption), there can be no guarantee that others will achieve the same results.

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