

Smart storage helps doctors make critical medical decisions

From facilitating remote healthcare for patients in rural Northern Australia to enabling ground-breaking medical research, Townsville University Hospital (TUH) has increased its speed of data delivery with Dell PowerStore.



Business needs

To improve patient care and outcomes, TUH needed to transform itself, to ensure it could deliver real-time data and AI-driven analysis to clinicians regardless of patient location. To make this goal a reality, TUH rebuilt its entire IT infrastructure, starting with Dell Technologies' PowerStore smart storage.

Business results

- Nursing dashboards now load quickly at all hospital locations, accelerating mission-critical medical decision making
- Real-time AI analytics enable disease detection and prevention
- Adaptable infrastructure simplifies expansion of ever-growing medical data lake
- DevOps and container technology brings new clinical applications online faster
- Contribution to environmental sustainability goals

Customer profile



Healthcare | Queensland, Australia



“Dell’s vision is to improve human progress. Ours is to improve human health. We can bring those visions together with Dell products, to provide better outcomes for patients.”

Barry Koch

Director, Information Technology Services,
Townsville Hospital and Health Service

Solutions at a glance

- [Dell PowerStore](#)
- [Partner: VMware](#)

From cities to the outback, TUH in Northern Queensland supports 250,000 residents, including many Aboriginal and Torres Strait Islander communities. That number grows to 700,000 when including referral catchment areas.

To effectively serve this large and geographically dispersed population, TUH's 8,000 physicians and staff needed to be able to access health records immediately. It became a struggle for IT to disseminate digitized information from multiple applications within their data lake, out to the clinicians who need it.

"We realized we needed to significantly invest in storage and associated technical components," explains Barry Koch, Director of Information Technology Services. "PowerStore provided the modern infrastructure for us to meet the growing demand and give our remote patients confidence that they can be treated quickly."

Improving outcomes with VMware

With a recent explosion of data and more growth projected in the future, the number of diverse information technology silos to support TUH's workloads were adding management complexity and slowing services. TUH needed a solution to consolidate their environment while providing top performance across all applications.

Isaac Gardner, Systems Integration Specialist for Townsville Hospital and Health Service, says the tight integration between PowerStore and VMware allowed them to leverage a single storage platform for both block and file-based storage in TUH's data lake and overall VMware environment.

"PowerStore's easily expandable," Gardner says. "We can add capacity and provision advanced storage services like snapshots and replication quickly, from either the PowerStore Manager GUI or directly from vCenter, with the VSI plugin."

Fast and simple storage provisioning and management freed up precious management cycles, allowing IT staff to focus on the innovation needed to support research projects and get ahead of projected growth.



"We are now able to organically grow our data lake through Dell Technologies to ensure that we can keep up with the constant and increasing demands of data throughout our organization."

Barry Koch

Director, Information Technology Services,
Townsville Hospital and Health Service

Performance architecture that scales

The performance of PowerStore all-NVMe architecture was also a key factor in TUH's ability to rapidly provide life-saving clinical reporting.

"Previously, our pain points were the performance and scalability of our existing storage infrastructure," he says. "Our number one bottleneck was IO capacity within our huge data lake. PowerStore's very low latency times allowed us to deliver our healthcare services as quickly as possible."

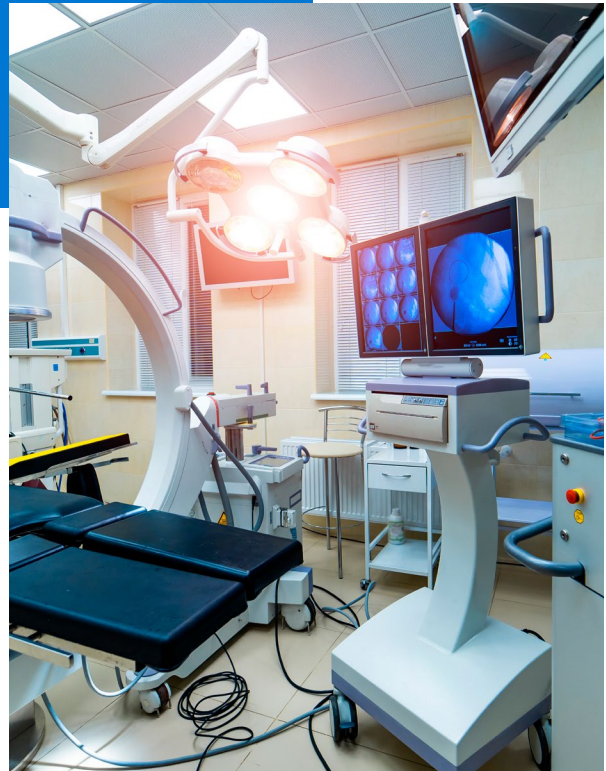
With lower latency and higher IOPS, load times for the dashboards used by nurses throughout the system became almost instantaneous, allowing for more accurate patient services. Koch notes, "In certain areas, such as the emergency rooms, decisions need to be made very quickly. The use of PowerStore was noticed immediately by our clients, clinicians, and healthcare specialists."

PowerStore's high IOPS density, combined with advanced data reduction capabilities also minimized the physical footprint of storage in TUH's data center, helping them achieve their sustainability goals to reduce carbon output.

DevOps is the future of healthcare advances

Healthcare innovation can't happen without IT innovation. TUH relies on the improved redundancy, scalability and flexibility of Dell's technology to advance research using AI innovation, such as for determining insulin dosage or improving cannula changes.

"With the infrastructure we now have, we can actually access large cases of data to produce generalized models for the population, which is new and makes us quite competitive in this field," explains Rudolf Schnetler, Data Laboratory Lead for TUH.



"PowerStore improved our performance significantly and it was immediately noticed by our clients, clinicians, and healthcare specialists."

Barry Koch

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To bring these clinical applications online faster, TUH leverages container technology in application DevOps. “The quicker that we can get a product in front of our medical staff and start iterating and get that feedback loop happening, the faster we arrive at breakthroughs for our clients,” Gardner says. “Dell PowerStore, with VMware and container technology, helps us have a more consistent and speedy approach to the way we implement solutions.”

Modernizing their core infrastructure by integrating PowerStore also allows TUH to plan for future expansion to remote locations. “Getting data to our rurals is a challenge and paramount to increasing patient care,” Gardner emphasizes. “With PowerStore as the storage in our internal cloud and using Kubernetes container technology, we can deliver applications and data in record time.”

Looking to the future, TUH seeks to continue providing world class care through new and existing Information and Communications Technology supported solutions, while at the same time working with researchers to support AI innovations. For that, TUH needed a future-proof, agile solution that can scale as DevOps grows. They chose Dell PowerStore.

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