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*Joel Adams
 IT Manager
 Perth Radiological Clinic*

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INDUSTRY Healthcare

SOLUTIONS **Modular Storage, Green Solutions, Storage Management Hardware** — Hitachi Adaptable Modular Storage 2500



Perth Radiological Clinic Expands and Protects Critical Data Storage Facilities with Hitachi Modular Storage

Perth Radiological Clinic opened in 1948 and is the oldest established private medical imaging practice in Perth. It is a leading provider of private medical imaging services in Western Australia and has an enviable record of achievements. With almost 60 radiologists, including some of the most talented specialist radiologists in the country, its IT department prides itself on maintaining the clinic's reputation as a recognized national leader in diagnostic medical imaging. Exponential data growth meant that the clinic was in need of a more robust storage infrastructure to handle growing demand. Hitachi Adaptable Modular Storage (AMS) 2500 answered the challenge.

About Perth Radiological Clinic

Perth Radiological Clinic (PRC) provides medical imaging for over 4,000 medical professionals in 19 clinics (including 9 hospitals) throughout Western Australia. It provides services to the local healthcare community, including X-ray, ultrasound, computed tomography (CT), MRI and mammography.

The clinic was experiencing exponential data growth and needed a more robust storage infrastructure to handle growing

demand. CT scans alone uniformly include hundreds of images, which can be a total of 2GB to 4GB in size; with thousands of scans being captured daily, PRC can require hundreds of gigabytes of storage space per day.

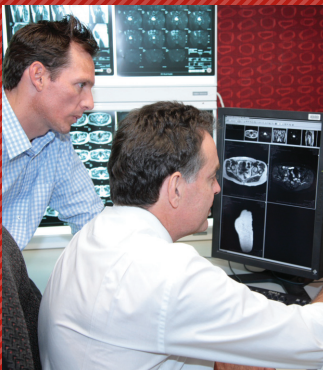
Capturing more and better data is critical to enhancing the quality of care afforded to citizens and improving diagnoses. PRC needed a more centralized system to store its patient data as well as a room for 7 years' worth of patient records.

"While there are no regulations on how long we must keep image data, we developed an internal policy to keep at least 7 years' worth of patient image data on file, with that policy reviewed annually. A typical CT or MRI scan can result in hundreds or even thousands of images. With growing numbers of patients requiring imaging each day, the amount of data being stored was placing incredible pressure on our storage systems," said IT Manager at Perth Radiological Clinic, Joel Adams.

PRC Modernizes Its Approach to Storage

PRC systems were lacking in size, manageability and, crucially, scalability. With access required on an increasingly broad scale, the clinic needed a solution that would enable consultants and general practitioners (GPs) to view and manipulate CT and MRI scans, as well as other patient data from different locations. Meanwhile, the data needed to be stored in numerous external, redundant locations to ensure fidelity and security.

After an evaluation period, PRC selected Hitachi Adaptable Modular Storage 2500, a reliable, flexible and scalable storage system for their core picture archiving and communication system (PACS) long-term image storage. In addition, AMS 2500 serves Microsoft Exchange Server, VMware, databases and other business



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applications. The solution works in a tiered scenario or standalone and offers the ability to consolidate business data, improve business continuity, replicate information to backup locations and archive.

Outside network infrastructure enhancements, namely the proliferation of fibre communications networks, gave way to the possibility of disparately located servers. This unlocked the potential for storage to take place in a central location, with redundant mirror copies in multiple separate locations. This centralization also meant that data could be compressed in a lossless manner, using advanced medical imaging compression algorithms supported by the picture archiving and communication system (PACS), and resulting in considerable savings on the total space required. With more efficient compression technology and up to a 50% reduction in file sizes, the clinic was able to facilitate better care and reduce its environmental impact.

“One of the major benefits of using a computerized solution for medical imaging is that it obviates the need for printing X-rays and other images. As well as losing fidelity, images on film media can be lower quality, lose quality over time as the film decomposes, and are more difficult for collating and applying measurements,” continued Adams. “Such media is manufactured using poisonous chemicals, which are released when the film is incinerated after use. We were able to stop using 1 of our film printing and processing machines, reducing the need for printed film and resulting in a 1/3 reduction in power usage.”

Meanwhile, storing a greater amount of patient history enables healthcare professionals to provide better care to people with long-term conditions. Oncology patients see considerable benefits from

having their medical imaging history stored digitally and available immediately, as complex conditions can be analyzed and compared with previous findings more easily and critically over a longer period. Such detailed analysis and the resulting case studies also facilitate teaching of student doctors. Whilst in the past records were printed film and harder to use as learning tools, new doctors and trainee radiologists can make use of digital teaching libraries and can be schooled with high quality materials that can be delivered in new learning scenarios.

“It was vital for us to retain the quality and quantity of the images on file to help doctors easily access and analyze patient records to make better diagnosis and management decisions. Hitachi Data Systems proved that it delivered the best value solution, as well as the technical expertise and support to solve our business challenges,” Adams said.

Results: Improved Patient Care

Demand in the healthcare field for dynamic and real-time access to high volumes of data has increased considerably in recent years. Healthcare professionals, like consumers around the world, are now able to consume their patient database – including pictures, statistics and other data – through applications on mobile devices such as iPhones and iPads. With the new modernized storage solution, Adams is able to cater for these services, enabling doctors to collaborate on the move and improve the way they deliver care.

At the same time, the solution has increased uptime and service availability. With 2 hospitals, including Joondalup medical campus (the second biggest Accident & Emergency (A&E) in Western Australia by patient numbers), relying on the solution 24 hours a day, 7 days a week, quality of service is fundamental.

PRC Looks Forward

While PRC is incrementally increasing its storage capacity on a regular basis, the deployment does not leave the clinic requiring continued expensive hardware investments. The solution is so scalable that, outside of ongoing re-evaluations, the clinic need not change its storage infrastructure for many years, but rather add to it on demand.

This is of considerable benefit to Adams, for whom predictability and forecasting are of paramount importance. “Demand and supply in health doesn’t work the same as the overall economy – the health of people doesn’t necessarily correlate to financial markets – so having a solution that supports our growth through phases of changing demand without adding cost is a must.”



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