

DAM delivers for medical imaging



Perth's Sir Charles Gairdner Hospital has installed a sophisticated digital asset management platform for medical photography using Canto Cumulus

Based in one of five tertiary hospitals in WA, the Sir Charles Gairdner Hospital's Audio Visual Unit provides medical and forensic photography for in the hospital's emergency department, operating theatres and wards, as well as providing coronial services, including post-mortem and forensic photography.

Chris Northcott is chief medical photographer and head of a team of four photographers and one graphic artist in the hospital's Audio Visual Unit.

Northcott said the hospital settled on Cumulus, now used regularly by well over 100 doctors, after an extensive period spent researching a platform that would provide a robust solution to work across the entire hospital.

"We looked at some existing installations in the eastern states at Brisbane Children's hospital and Pacific Magazines, and realised it was a stable and robust platform," said Northcott.

"We have not had a problem or urgent requirement to contact the distributor, DataBasics, since it was installed.

The Cumulus system installed includes the desktop client software and server for the photographic staff to catalogue images into Cumulus, as well as the web front end for hospital staff to research patient history and use for the continuum of patient care.

DataBasics was engaged to provide the on-site services to install, configure and train the hospital staff in using the system. The Cumulus DAM has been setup on a standalone Apple Macintosh network established by the A/V unit, running on Xserve and Xserve RAID servers.

Additional products that provide an overall solution are:

- i-prefillerPro that assists in the entry of metadata during the cataloguing process
- Email Order System Pro which adds a digital image order form to the Cumulus web front end.

Sir Charles Gairdner Hospital and DataBasics are now planning to upgrade the installation to the latest release of Cumulus, all to be implemented on updated hardware supplied by Tim Gardner of Artref.

Using a fleet of Nikon D3 digital SLR cameras, the medical photographers can be called on to handle a diverse range of assignments.

This could be something as simple as photographing a wound

to add to the patient's record, or travelling to the state mortuary to record the post mortem of an industrial accident or where unforeseen forensic evidence is required to be documented.

In the hospital, Medical photographers might be needed to photograph traumas in Emergency. Or it might be to photograph a surgical procedure such as before and after photos for plastic surgery.

"The fact that images could one day end up being called up as evidence in a legal action meant security was a big issue for us, and needed to make sure it was a robust system," said Northcott.

Once a photographer returns from a job, the unmodified RAW format image is downloaded to a working server, uploaded into Cumulus and archived.

The images are adapted to whatever the final destination medium, whether an educational PowerPoint or a print submission to a medical journal.

"When we first got Cumulus we were archiving to DVD as well but now we have gone 100% to HDD technology," said Northcott.

To preserve the image integrity, all of the RAW files are automatically archived to a server that has read only access, so there is always an audit trail back to the original unmodified master image.

"JPG is a lossy format and therefore not ideally suitable for medical photos," said Northcott.

Doctors are now able to view these images digitally via the hospital intranet from any clinic across the hospital. As patient records at the hospital are still stored on physical files, a printout of the patient images are still generated to store within the patient records. When implementing Cumulus, cataloguing and keywords were identified as a major factor to creating a successful DAM platform that doctors would find easy to use.

The hospital turned to an international standard for Medical Diagnostic Categories (MDC), which is familiar to doctors through their medical training.

All images are stored according to these 23 MDC categories, then subcategorised by anatomical region, a situation Northcott believes is unique among Australian hospitals

In WA, patients in the public hospital system are provided with a Medical Record number (UMRN), which stays with them for life. All of the clinical image records are tagged with this number to add an additional layer of security, as only health professionals with access to the patient records database will know the number.