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The Critical Need for Integration of Imaging Infrastructure

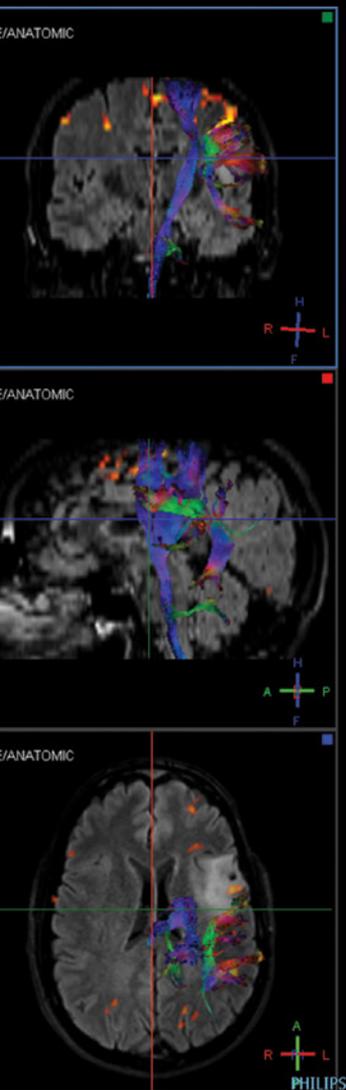


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Dr Sue Ulreich
President of the Australian
Diagnostic Imaging
Association.

When systems to support broader access to high quality patient images are in place, the results in terms of improved patient outcomes and greater health system efficiency will far outweigh the investment, writes *Dr Sue Ulreich*, President of the *Australian Diagnostic Imaging Association*.

Australia's healthcare system lays claim to being one of the best and most comprehensive anywhere in the world. It's a reputation that is celebrated and reinforced by politicians on all sides of the spectrum and, for the most part, it is backed up by reality when viewed in a global perspective. And yet, in the critical area of diagnostic imaging, the system is breaking the promises we as healthcare professionals are making to Australian patients.



Australians enjoy access to a broad range of imaging modalities funded largely by the public sector and Medicare. Access is enjoyed in our rural and metropolitan communities with x-ray, ultrasound and CT services available to towns with a population base of 10,000 or over. Most of these services are provided by private providers in settings that range from public and private hospitals to large and small community-based practices.

With diagnostic imaging being central to the diagnosis and/or management of many clinical conditions, and in light of the significant infrastructure investments made by both hospitals and practices to transition to a digital imaging platform, clinicians (referrers and providers) need to know they can reliably and efficiently access patient images. Long gone are the days when all images could be captured on hard film and stored at the top of the wardrobe – a CT scan itself can create over 1000 images for a single examination.

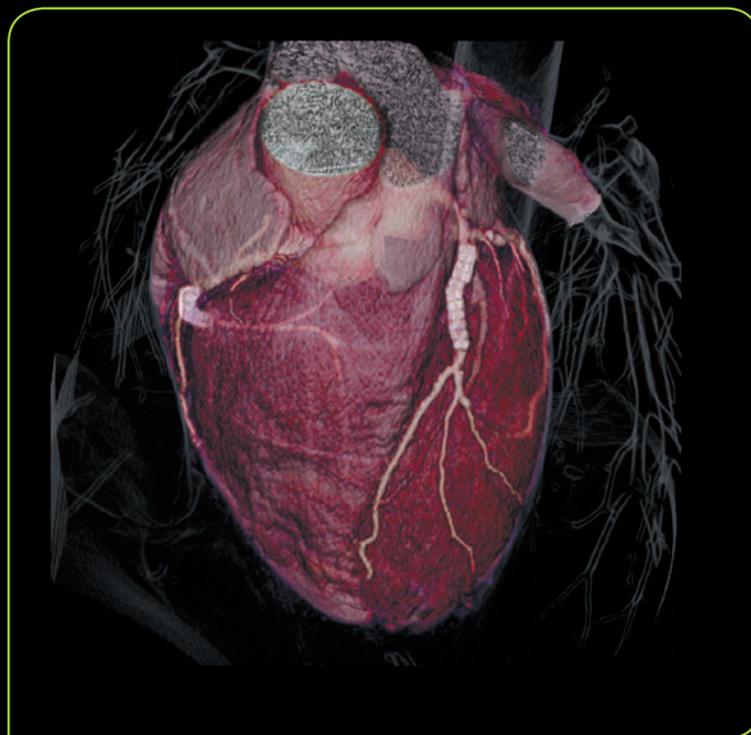
Hospitals and practices cannot do this alone. What they can and are doing is investing in new equipment, image storage systems and software to facilitate web-enabled access to images. Other initiatives such as the National Broadband Network are a good start, and will assist with point-to-point image transfer, but certainly more is needed.

Patients would be entitled to think that, within the context of the current healthcare landscape, there would be some form of integrated infrastructure to support the storage, access and retrieval of their diagnostic images in an efficient and secure manner across the health sector in Australia irrespective of their point of entry.

But today, no such connecting infrastructure exists. It is this critical lack of a common, shared infrastructure that contributes to delays in management, potential complications and overall risk to patient care across Australia.

As ever, basics are at the core of this problem. While many hospitals and practices have invested in their own data storage infrastructure, others haven't and the systems that are installed simply don't talk to each other in the manner that is required. One practice's approach to storage may be at odds with another's. There are many differing approaches to organising and archiving images across the country. Meanwhile, with no common approach or consistency to image storage or platform for interoperability, patient care is being compromised. If a patient loses their x-rays, there's a very real chance that the referrer can't access a digital copy and the patient is put to the inconvenience and cost of another examination.

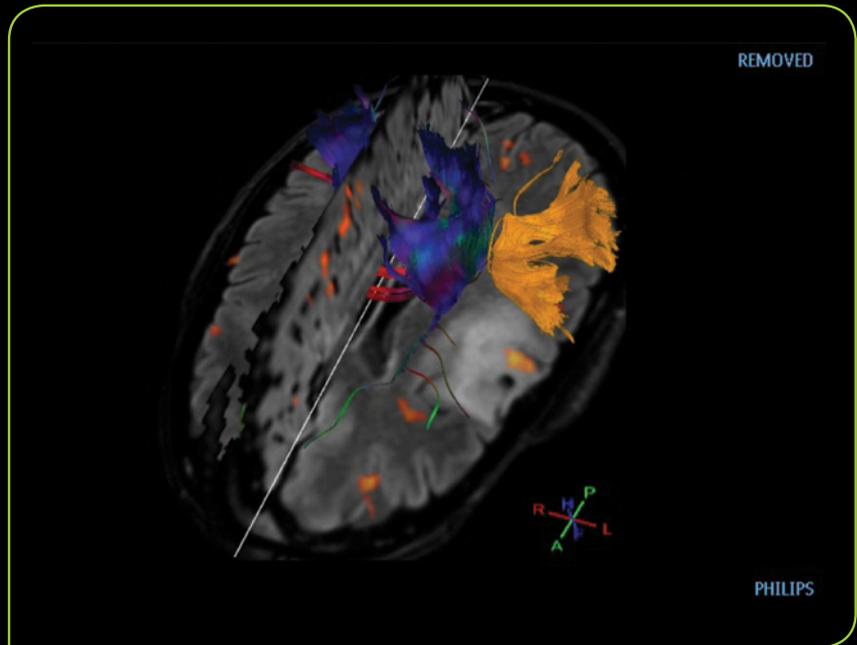
The effects are being felt at all levels. Firstly, let's start with General Practice. In this digital age, it should be a relatively simple process for a GP to access a patient's images so they can be reviewed prior to the appointment time – and yet, in the majority of cases, this cannot and does not happen. If the patient forgets to bring their images to a consultation, the GP is often left blind without recourse to accessing the vital information they need to support their treatment pathway. ▶





The Australian Diagnostic Imaging Association was formed in 1999 to promote the practice of private radiology performed by specialist radiologists within Australia. ADIA works to ensure the continued sustainability of comprehensive private specialist radiology practice. It consults with government and other appropriate bodies on matters relating to the funding and delivery of radiology services.

Currently, diagnostic imaging services in Australia are provided by public hospitals (35 per cent to 40 per cent) and private imaging practices (60 per cent to 65 per cent). It is estimated that about 70 per cent of diagnostic imaging services delivered in Australia are now funded through Medicare, and this is growing.



It's a similar story for all referrers who struggle without access to digital images in the form they need. While some radiology providers will go to great lengths to give referrers the detail they require, it's not a consistent story.

Imaging specialists also struggle without access to the images created by other practices. Staff are diverted from other tasks to make time-consuming inquiries, tying up valuable resources – and all the while the patient is kept waiting or – worse – is asked to go through the imaging examination again, exposing them to unnecessary associated risks.

Finally, patients will also ultimately want access to their own images. This is not an unfair request – after all it's their health.

While some of the existing protocols and procedures are there for sound reasons – such as security and privacy – there are many more frustrating “speed humps” that are purely the result of a lack of vision, strategy and guidance – and funding. Those practices that are leading the way with their own investment program, rigour and structure are seeing the rewards but even their systems stop short of interoperability.

When systems are in place to support broader access to high quality patient images, the results in terms of improved patient outcomes and greater health system efficiency will far outweigh the investment. We have examples of this in Australia today.

The rewards can be enormous. Let's imagine a case where a patient presents unconscious to the emergency department at a public hospital after suffering a fall. Unbeknown to hospital staff, this patient has been undergoing treatment for a brain tumour at a private facility, perhaps interstate. A fully interoperable digital image system would allow the attending emergency

doctors access to the patient's previous scans, decreasing the time to diagnosis and ensuring that timely treatment is commenced.

Now think of that same situation occurring within the vast majority of health networks in Australia. With little or no framework for the effective sharing of diagnostic imaging, the medical staff is forced to start from scratch. Tests show a tumour, but there's no readily available context – no way of determining whether the tumour is a new finding, what type of tumour it is, whether it's grown or what treatment had already been undertaken. And this is just one hypothetical example.

While the technology exists, there is no roadmap – no impetus, no stimulus and no funding. Attempts are being made at state levels by some authorities, but these efforts are often parochial and patchwork. Governments can and must assist the sector to create the connecting infrastructure and make the investment necessary to support referrer and provider access to images.

Despite a restrictive funding environment, the Australian population's reliance on medical imaging is growing, and with good reason. Around the world, medical imaging is transforming medicine. However, it is rarely a well understood fact by the powers that be that this transformation can be of great advantage to taxpayers as well as patients. Medical imaging insiders already understand the sector's enormous potential for preserving quality of life through early detection, and for reducing hospital costs by averting admissions and shortening the length of stay in hospital.

If funded in the right way, medical imaging will continue to deliver greater value to the Australian healthcare system. But just how well this potential is understood by policy makers is questionable.