

Government inability to harness high-tech radiology blurs NHI vision



Almost runaway technological advances have put radiology at the cutting edge of diagnostic and therapeutic healthcare, increasing its reach beyond the wildest dreams of its oldest living practitioners. Yet the government's inability to pragmatically leverage willing private sector information technology (IT) skills and capacity has left South Africa (SA) way short of what it could potentially offer most of its patients.

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Dr Richard Tuft, executive director of the RSSA.

age now a longstanding non-negotiable government priority, public/private collaboration is at the core of any success. *Izindaba* has learnt that a powerful vendor-neutral archiving and storage IT portal with the potential to deliver cost-effective, high-quality image reporting across primary, secondary and tertiary healthcare platforms has been on offer to government for the past 6 months – without any official 'uptake'. Developed by the Radiological Society of South Africa (RSSA), the portal has been met with major enthusiasm and 'head office' lobbying by public sector radiology department chiefs – yet the private sector-managed fee-for-service instrument remains effectively on ice when it comes to 80% of the population. This while some tertiary hospitals (according to reliable *Izindaba* sources) sit with an annual tally of more than 100 000 black and white unreported (i.e. uninterpreted) X-rays, illustrating what an enormous difference such a referral system could make to healthcare outcomes. Any healthcare facility with a picture archiving and communication system (PACS) and sufficient bandwidth could send images to the central RSSA-managed portal for interpretation and feedback by a radiologist – empowering the state team managing the patient to render far better care.

Approached for comment, the executive director of the RSSA, Dr Richard Tuft, said the single-format portal was of international digital technology standard and 'solves the problem of different technology being used to store and read images'. 'We want to use the capacity of the private sector to help out the state with the reporting of images. It's been demonstrated internationally to improve healthcare outcomes. We have this expandable virtual and potential system – but no client!' Asked about the fee-for-service charges, he declined to give figures except to say it was 'not a particularly high' rate. 'We have to pay the consulting radiologists whether they're in the public or private sector, pay for the technology, manage the system and pay for quality control via random peer review,' he added.

Radiology's message to government – 'we want to help out'

Tuft said that quality was paramount, with the consulting radiologist able to interpret whether he or she was seeing pathology. Asked what he'd do if he had a 'magic wand' to change things, he replied: 'I think the biggest thing would be for the Department of Health to accept that the private sector is not automatically going to oppose the NHI – large groupings are very keen to actively assist but are

being excluded from the process. With fibre-optic networks now commonplace, technology and IT have to be absolutely paramount if the NHI is to have any chance [of succeeding]. Tuft said there is enormous expertise, proficiency and willingness 'out there', yet the government seemed 'almost trying to reinvent the wheel in every possible area. We're all working in the same direction in the same country', he added. The RSSA had a 'very active' National Health Insurance standing committee that was already helping government with basic specifications for health departments at different levels of government.

With just 1.48 radiologists per 100 000 people in SA and universal healthcare coverage now a longstanding non-negotiable government priority, public/private collaboration is at the core of any success.

Just over 2 years ago, *Izindaba* witnessed the planning and early implementation of a major telemedicine project in the Eastern Cape, initiated and guided by the province's former Director-General of Health, the tech- and business-savvy Dr Siva Pillay. It has since fallen apart, through inadequate equipment provisioning, lack of installation or maintenance, poor IT support and/or lack of ongoing training. Substandard contractors awarded shaky tenders remain a nation-wide problem. Pillay himself, considered a maverick by the union-friendly and historically corrupt Eastern Cape health department, was ousted 2 years ago and is now practising medicine and running his many and varied business enterprises in the Port Elizabeth area.

What's possible ...

With radiologists (interpreting images) and radiographers (capturing images) having to upskill themselves virtually on a month-to-month basis, cross-sectional imaging today enables pinpoint diagnoses, allowing clinicians to focus treatment as never before. Taking a patient into theatre to 'cut and see what we find' is ancient history. Now an abnormality is detected via any one of a number of radiological techniques, and an image-guided biopsy is done instead. Interventional radiology is cutting edge, enabling (for example) a neurologist intravascular access to treat life-threatening conditions such as an aneurysm, using minimally invasive techniques.

Tuft said that 'in theory' there should be no limits to the availability of technology in SA

and that broader bandwidths, while initially expensive, were getting cheaper all the time.

However, Prof. Zarina Lockhat, head of radiology at the University of Pretoria and Steve Biko Academic Hospital, painted a somewhat more complex and challenging picture.

Life in the public sector

While agreeing that technological advances in radiology had changed the face of medicine (she singled out ultrasound, computed tomography (CT) and magnetic resonance imaging), the expense of 'each piece of equipment just goes higher and higher', while 'whatever system you have, maintenance and daily care of equipment is a big issue, I find'.

She said that the main criterion was funding. 'Yes, telemedicine should be routine, not just images but biochemical results, confidential patient profiles, blood results, the list is endless.' Better funding would enable the more rural district hospitals to be linked to the far better-equipped tertiary referral hospitals and enable them to buy the equipment and bandwidth necessary to transmit the data. 'The private sector has got it right, but often transmits less than they would like. For just one CT scan you need to send a minimum of about 500 images. The information and detail you can see to make diagnoses depends on the number of images you have. It can work, but you also need trained personnel – and it's hard (if not impossible in teleradiology) to separate radiology/radiography from IT. Most centres have dedicated IT staff and PACS administrators – they're a crucial part of the radiology department. You also need electronic medical records, the digitisation of hospital departments – it all has to be integrated,' she added.

Lockhat said that her department had attempted teleradiology, but data transfer was extremely costly and became unsustainable for 'certain peripheral hospitals'. Asked what a rural medical officer was supposed to do, she said that data security remained a major issue, but they could still anonymise the data, using iPads, computers or cell phones to transmit. 'There are some groups who can give you an opinion on line, some are free, some charge a rate ... There are medicolegal implications, but if it's urgent you (the specialist) can give verbal reports on the phone. It's quite risky, but if you have an intracerebral hemorrhage or other gross pathology it's not a problem – the risk comes in with the more subtle pathology.'

The limited technology rural doctors were saddled with enabled advice and feedback on

basic chest X-rays and ultrasound. When it came to more complex pathology, the best route remained patient referral to a central hospital. 'You can only go up to a certain point; it's not just the equipment you need, but the relevant specialist to interpret that modality.' She emphasised that the entire focus of telemedicine was to support rural areas. 'Tech and IT have to be number one priority for medical care generally. Images are part of it, but if a clinician wants to discuss a case with another clinician they need to send all the data possible, not just radiology images.'

Her top solutions to the current challenges were better funding and an increase in posts for radiologists and radiographers nationally, and more training of ultrasonographers – although this did not solve the ongoing outflow of her staff to the private sector. 'Those in academic medicine and those who want to do research generally stay, though,' she emphasised. Steve Biko Academic Hospital is 9 years into a digital system, putting it years ahead of many of its peers, although all SA's tertiary teaching hospitals are now digital, enabling many student exams to be run digitally.

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Lockhat said that all the heads of department at every academic hospital in SA met regularly to discuss challenges and solutions, in order to create 'a common vision and goal, and to co-ordinate teaching programmes'. She pointed to advanced 'post-processing and reconstruction' software in radiology as an example of astoundingly fast advances in her field. 'You can improve detailed imaging of anatomy and pathology. There are a host of software packages: for example cardiac, neurological, virtual colonography, oncology tumour tracking, CT and MRI software creating exquisitely detailed images and colour reconstructions with extremely fast acquisition times. It's here that the magic lies.'

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