

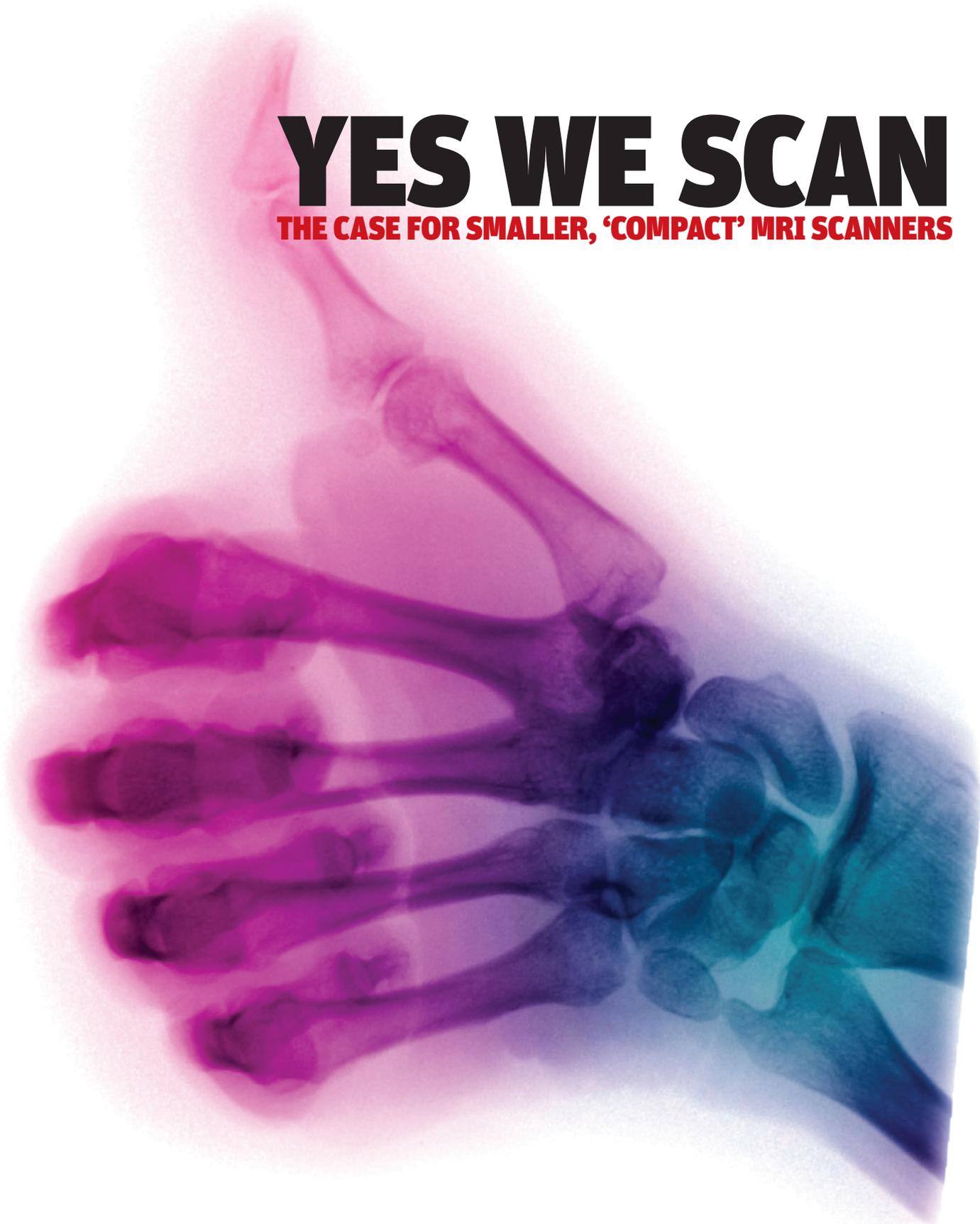
FOR HEALTHCARE LEADERS

HSJ EFFICIENCY

AN HSJ SUPPLEMENT/23 MAY 2014

YES WE SCAN

THE CASE FOR SMALLER, 'COMPACT' MRI SCANNERS



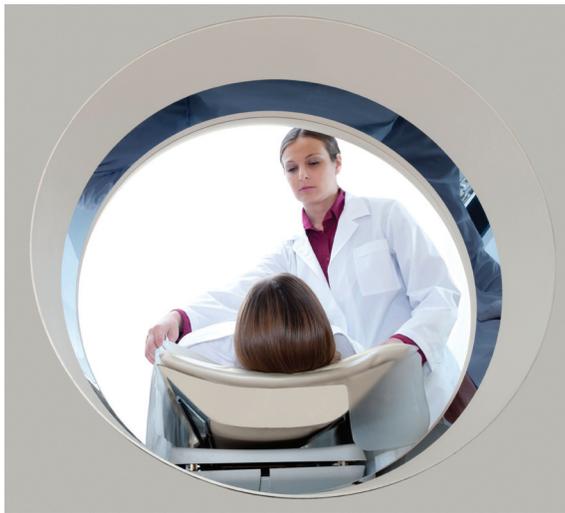
CONTENTS



TECHNOLOGY

The traditional view of MRI scanners is that bigger is better. But a new generation of 'compact' scanners – typically used to scan extremities such as hands – are said to cost much less to buy and run, use up less space and power, and are more comfortable for patients. They also free up whole-body scanners for those who really need them.

[Page 2](#)



PATIENT SAFETY

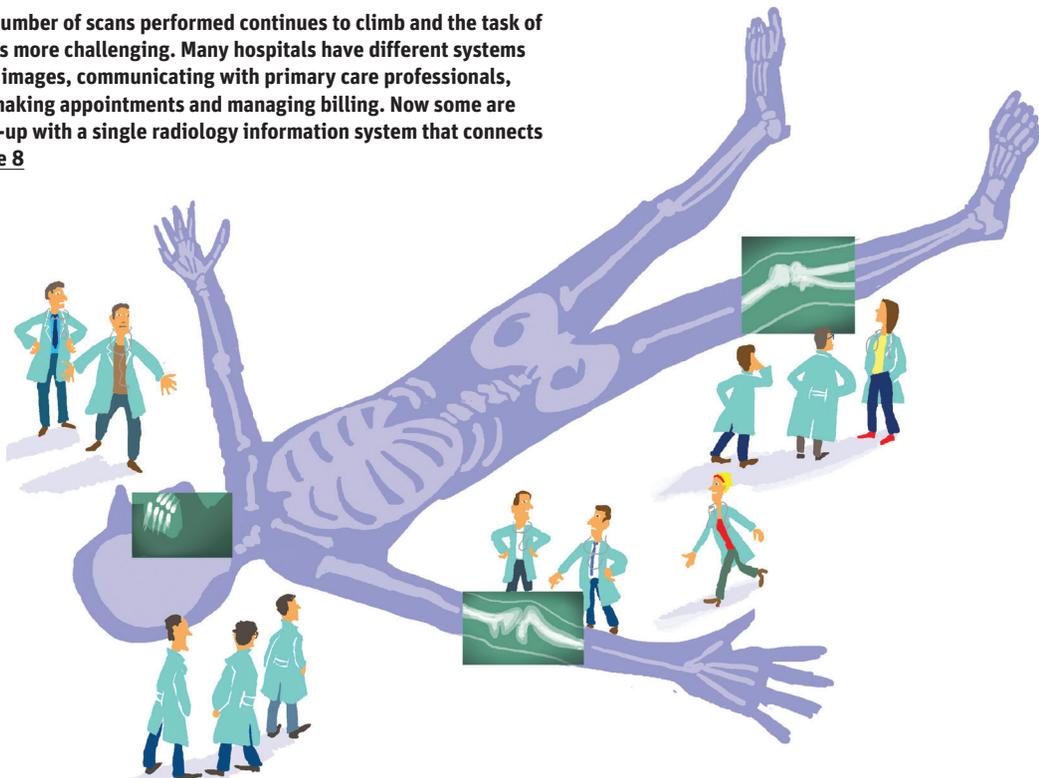


Widely used in the US, 'credentialing' systems allow hospitals to control access to patients by suppliers or industry reps. By controlling access to sensitive areas such as operating theatres they can improve patient safety and combat healthcare associated infections, as well as ensuring that procurement processes are followed properly.

[Page 6](#)

TECHNOLOGY

Throughout Europe, the number of scans performed continues to climb and the task of managing workflow grows more challenging. Many hospitals have different systems for archiving and sharing images, communicating with primary care professionals, storing patient records, making appointments and managing billing. Now some are trying to simplify this set-up with a single radiology information system that connects all of these together. [Page 8](#)





“ Esaote is one of the top ten medical imaging companies in the world, specialising in MRI and ultrasound technology – use of which has been growing for many years, helping to speed up and improve diagnosis. Faster diagnosis makes for faster treatment, which can ultimately mean a patient can get back to work or a normal life faster. Esaote has been channelling a lot of investment into the UK as it is seen as a key market and this has included appointing me to further expand its business model into the public and private healthcare markets.

I joined Esaote in September 2013 from PENTAX where I'd spent 28 years, latterly as director of sales in the group's medical division. One of my first actions was to increase our customer facing headcount with the appointment of five new positions, with more roles to come soon.

I also introduced the role of MRI business development manager to handle increasing demand for our range of dedicated MRI products. By dedicated, we mean MRI units with a specific focus, for musculoskeletal applications.

Esaote's O-Scan is an extremity scanner for imaging upper and lower limbs. The G-Scan Brio is an open, upright MRI scanner that can tilt, for

'The one (big) size fits all approach to MRI procurement can be far less efficient in today's healthcare environment'

imaging all MSK applications in supine and upright positions.

We like to think we are stirring things up a little within the MRI market because we offer MRI products with far lower costs – and greater efficiency. Thus we see strong growth in purchases of our smaller magnet MRI units – partly to free up the hospital's large magnet machines for when they are really needed, but also because customers are catching on fast that the images produced are more than adequate to enable diagnosis. Paradoxically, the one (big) size fits all approach to MRI procurement can be far less efficient in today's healthcare environment.

When hospitals and clinics are considering an MRI purchase, naturally, their radiologists and consultants are keen to try out our technology, so we have also invested in new demo stock. Indeed, we pride ourselves on adopting new methods of working to remain highly customer focused, and we keep our finger on the pulse for relevant changes – both in the market and in the clinical arena.

Stephen Kennedy is UK country manager for Esaote.
www.esaote.co.uk



TECHNOLOGY

THE BIG QUESTION

Jennifer Trueland reports on the economic and clinical case for using 'compact' MRI scanners

When it comes to choosing an MRI scanner in the UK, size still tends to be the factor that still trumps other factors: the bigger the better remains the consensus, especially among radiologists.

But could there be a sea change on the horizon?

Stephen Kennedy certainly hopes so. He is UK country manager for Esaote, the company behind a range of MRI scanners which pack a punch way above their weight.

"It's still the case that when you're in a room talking to people about a scanner, their first question is almost always 'How big is it?'. It's never 'How good is it?'. The whole industry has been built on the idea that you have to have a huge tesla [magnet] size; I think that needs to change. Yes, you'll need the bigger machine for some things, but for many, many others – such as joints, you can get just as good images with a smaller, more dedicated system. And it's much more efficient as well."

This is a message that has long been grasped in mainland Europe, and is beginning to take hold in the UK. A growing number of radiologists, and hospital managers, are looking beyond the issue of size and starting to consider instead what best fits their needs.

Among them are Lancashire Teaching Hospitals Foundation Trust, and Direct Medical Imaging, a company in the north west providing scanning services to both private and NHS patients (see case studies, overleaf).

The economic benefits of investing in a smaller scanner are clear, says Mr Kennedy. For example, the O-Scan, a compact MRI unit for extremities scanning, uses significantly less space and less power than its larger counterparts, as well as costing much less to buy, install, run and maintain.

"I don't see the smaller machine as

replacing large scanners," he says. "I think they complement each other. But for MSK work the system can perform just as well and at a fraction of the cost. What's more, the patient experience is much nicer."

Anyone who has ever had an MRI scan in a traditional whole-body machine will know what he is talking about. Despite advances and the best efforts of staff, it's a noisy and potentially claustrophobic experience, and having to lie still in a somewhat unnatural position can be a strain.

The O-Scan, on the other hand, is a quiet machine, and as the patient is not in an enclosed space, is more comfortable for the person being scanned.

For radiologists, however, the key consideration is image quality – and for some, seeing has meant believing.

For example, Plymouth Hospitals Trust took delivery of an Esaote scanner in March, but the order was only made after thorough research, including testing it in situ.

The aim, says Lee Arkins, contracts manager – capital, estates and facilities, was to improve services for patients, as well as help the trust meet its targets and objectives.

"The main focus for our radiologists, and for us, was image quality," he says. "We had to be sure that the scanner would do the job we needed it to do. So we had a scanner delivered to us on trial, and we also linked up with a hospital in the north west of England to make sure that the radiologists were completely happy with the images from the scanner. The radiologists are very happy, so we have gone ahead with it."

The new scanner complements the trust's existing large MRI machines: by diverting extremity scanning, it frees up whole-body scanners for those who really need them, cutting waiting times and improving access.

Fewer visits to hospital, faster diagnosis and commencement with treatment, and



improved resilience if one or more of the trust's three existing scanners go down are also expected benefits.

An added advantage is expected to be saved bed days – because inpatient waiting times for scans will also reduce, making the new scanner an efficient choice.

“By releasing capacity in the main Derriford MRI scanners we will be able to release up to 134 scans per month to be allocated to inpatient MRI,” explains Mr Arkins. “This will significantly reduce the length of wait for an inpatient scan, and potentially save bed days across the trust.”

The radiologists have already taken the scanner to their hearts, he says, and it also helps the trust comply with Any Qualified Provider requirements.

At a time when all trusts are under financial pressure, compact scanners could be seen as contributing to reining in costs in some particularly tough areas. They use far less electricity for one thing, says Mr Kennedy – startlingly so. Power costs for

‘By diverting extremity scans, the new scanner frees up whole-body scanners for those who really need them’

operating the O-Scan for a year are £1,000, compared with around £50,000 for a larger machine.

There are fewer failed images because patients find it easier to keep still, saving staff time and boosting efficiency.

There are other savings too: large scanners require expensive helium for cooling but there is no such requirement with the small systems. The footprint of the machines is also considerably smaller, meaning that less space is used, and installation takes just two weeks. “Maintenance costs are a third to a half [of

bigger scanners] and capital costs are at least 50 per cent,” says Mr Kennedy.

He believes that smaller scanners are only going to become more popular as the NHS struggles to cope with the twin pressures of rising demand and tightening budgets. But changes in clinical practice will also make change more likely.

“People want to do less with CT and plain X-ray,” he adds. “This obviously puts pressure on MRI scanners. Because a smaller machine is more affordable, it means you can see more patients, cutting waiting times. The pioneers are already seeing it that way, and we hope the message is getting across to others.”

Above all, Mr Kennedy says that size shouldn't be seen as the “macho” issue it has become in the scanning world.

“We're not exactly saying small is always the most beautiful,” he says. “But what we are saying is that, for maximum efficiency, you want to get a scanner that's the right size for the job.” ●

TECHNOLOGY: CASE STUDIES

‘PATIENTS REALLY LIKE IT’

How trusts are using compact scanners to save money, improve patient experience and reduce waiting times

LYTHAM ST ANNE’S AND COPENHAGEN

Consultant radiologist Roger Bury has been a UK pioneer in the use of compact MRI for extremities scanning.

His company, Direct Medical Imaging, based in Lytham St Anne’s, Lancashire, has recently bought its second compact unit from Esaote, having been very happy with the quality of the first.

Dr Bury, who also works as a consultant diagnostic and interventional radiologist at Blackpool Teaching Hospitals, says the O-Scan scanner performs well in imaging areas such as knees and feet. Indeed, he believes it is actually better for some areas, such as hands, than the traditional full body scanner.

“The image quality for the wrist and hand is fantastic,” he says. “The patient is in a comfortable position, so the limb remains still. In the full-body scan the patient lies in a ‘Superman’ position – and even the fittest people start shaking, which obviously has an effect on the image.”

He spent quite some time trying to find a smaller scanner which suited the purposes of



Supine: a patient in a whole-body scanner

Direct Medical Imaging, which sees both private and NHS patients.

“It was important to me that the image quality would be at least as good as the whole-body scanners I use in my NHS practice,” he says. “Image quality is the most important thing. But the other benefits are that this is substantially cheaper to buy, install and run – and it doesn’t take up much space; in fact we have it in the room the size of someone’s dining room!”

Patients really like it, he says, because they don’t have to lie in an enclosed, noisy whole-body scanner. “Even patients who aren’t claustrophobic really appreciate it,” he says.

Direct Medical Imaging, which also offers whole body MR imaging, as well as ultrasound, plain x-rays, and other forms of medical imaging, has contracts with local clinical commissioning groups for direct GP referrals.

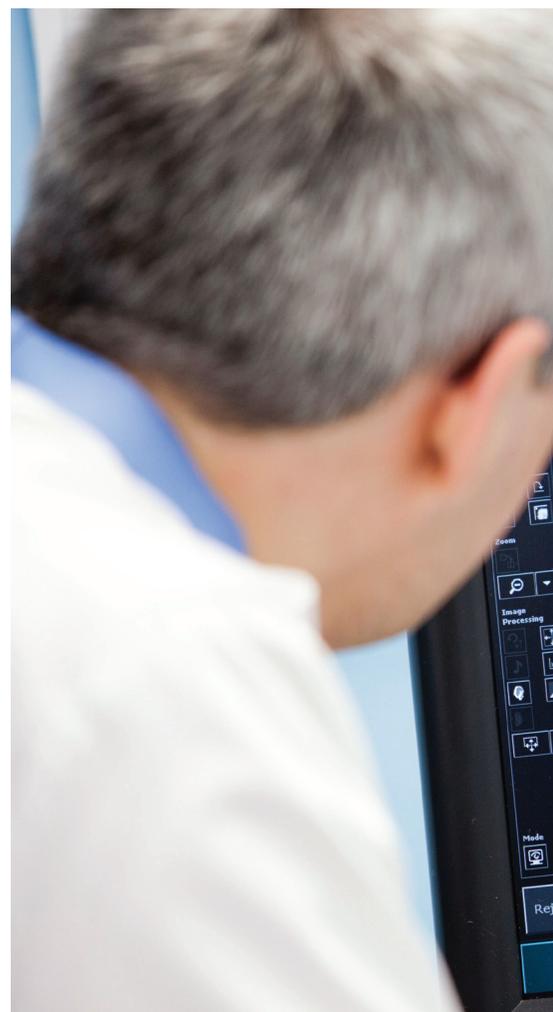
One contract is specifically for knees, which means that these form the bulk of work performed by the dedicated extremities scanner. The new scanner complements the centre’s whole-body scanner, and also provides new scan sequences to allow better assessment of cartilage and bone.

As a consultant radiologist of many years’ experience, Dr Bury says it has taken time for his colleagues to recognise the benefits of a dedicated extremities scanner.

“There was a lot of scepticism,” he says. “I used to get comments like ‘how’s your fridge magnet?’. But I think that attitude is beginning to change, and people working in the NHS are beginning to see the benefits.”

In mainland Europe, compact scanners are more widespread and, in some cases, are helping doctors to do things they have been unable to achieve with whole-body scanners.

Dr Mikael Boesen is an MSK specialist radiologist and research lead at the Parker



Institute in Copenhagen, where he is using Esaote’s G-Scan. This machine allows images to be taken of weight-bearing joints (unlike whole-body scanners where the patient is supine). Two or more images showing what happens when the joint is bearing weight, and in different positions, can give a better idea of the mechanical issue which might be causing patients pain.

“We’re still working on it – this is very new,” says Dr Boesen. “But it’s something we can’t do with the large scanners.”

“It helps the patient to know why they have the problem. It doesn’t affect everybody – perhaps around a third of our patients – but it means we can give them an explanation.”

Smaller scanners are also coming into their own in other clinical areas, such as rheumatology, he says, while they are being increasingly utilised in trauma patients. “They can depict fractures that wouldn’t show up on plain x-ray,” he says.

“I believe that smaller scanners are best used in a radiology department where there are high-field scanners too, then you can decide what is needed in each case.”

Back in the UK, Dr Bury, a past president and secretary of the British Society of Cardiovascular Imaging, and past chairman



Image challenge: good image quality is a priority for clinicians

– you don't have to enter a doughnut," he laughs. "We've had no patient unable to be scanned with the new machine, and we haven't had to repeat sections [because a patient has moved making the images unusable]."

Some of his colleagues have been sceptical about whether you can get sufficiently good images with a smaller magnet, he concedes. "I'm quite clear that we manage to get images that are more than adequate for diagnosis," he says. "Reporting is consistent with images from larger scanners."

Size does matter, he says – but in a positive way. "This machine takes up much less floor space; we've managed to convert an old office."

He actually believes that, for certain purposes, the smaller scanner performs better than the trust's existing large machines. "Knee images are very good in particular. I think that cartilage is better seen on the smaller machine, although that could be because our larger scanner is quite old now."

Radiology and scanning in particular have taken huge strides in the last 20 to 30 years, he says, with the advent and widespread take-up of once revolutionary technologies such as CT and PET scanning. But the field is still developing, and he believes that a wide range of scanners can work well together to provide an effective and efficient service.

"We've been able to cut waiting times for extremity scans, which is great for patients and helps us meet our targets," he says. "It means that patients can get a diagnosis more quickly, and can start treatment earlier. For some patients that means they can get back to work more quickly."

"It also means we're spending less on buying scanning capacity from the private sector."

"And because our capacity has improved, we've been able to open it to GPs, bringing new business to the trust."

According to Russell Dineley, general manager of the trust's imaging directorate and medical imaging department, finding a cost-effective solution to rising demand for MRI scans was an important driver in the decision to invest in the O-Scan. "Our requirement was for additional MRI procurement that was cost-effective, hence our decision to purchase the O-Scan, which requires less space, less power, and lower capital expenditure in terms of associated building costs, compared to a large bore system."

"Our consultant radiologists are extremely satisfied with the image quality and have been pleasantly surprised that patient throughput time is comparable to that of large bore scanners." ●

of the North West Regional Radiologists, hopes the day of the "fridge magnet" comments are ending. "It's a good choice in terms of image quality, cost and size. Patient feedback has been excellent too. We're very happy with it."

ROYAL PRESTON HOSPITAL

Lancashire Teaching Hospitals Foundation Trust has turned a financial drain into a revenue stream by investing in a compact MRI unit. Used for extremities, such as knees, feet and hands, the Esaote O-Scan is helping the Royal Preston Hospital to reduce waiting times and to reduce expenditure on private sector scans.

Importantly, however, it also means the department can now offer direct GP access, bringing additional income to the trust.

According to consultant radiologist Dr Chooi Oh, the new scanner is having a positive impact on patients, as well as the financial bottom line.

"Although the trust had three high field large MRI scanners we were finding it difficult to keep up with demand," he explains. "There was a particular demand for musculoskeletal scans, for knees in particular.

'I used to get comments like "how's your fridge magnet?" But I think that attitude is beginning to change'

We don't actually need a large scanner to do that."

The trust started to consider buying a smaller scanner in 2012, but the money only became available last year. By then, managers – and radiologists – had done their homework and had decided that what they needed was a smaller scanner to complement and relieve pressure on the larger machines.

The doctors in particular needed to be convinced that the image quality would be good enough, says Dr Oh. "We insisted that we wanted to see it in action, so went to see one in Berlin," he says. "We were very happy with the image quality so were pleased to be able to go ahead."

The new scanner is a better experience for patients, he adds. "It's much smaller and it isn't nearly as scary or daunting to the patient



“ Jeremy Hunt recently called for a fresh commitment to simple measures to improve patient safety in the NHS.

Few could be simpler than ‘credentialing’: the process of obtaining, checking and assessing the qualifications of healthcare industry representatives to ensure compliance with hospital access and safety policies.

In the US, impartial and independent credentialing is commonplace. Over 6,000 healthcare providers use IntelliCentrics’ Reptrax system to know which reps are on site at any one time, what they are doing, and that they have area appropriate health and professional certifications – from immunisations to training qualifications.

Credentialing systems safeguard patients by controlling access to sensitive areas, and improving infection control. They also help procurement by making it harder for healthcare industry representatives to circumnavigate central buying policies through unscheduled visits to individual clinicians.

Until now, this process has been neither requirement nor habit in the UK. That’s about to change, with Leeds Hospitals leading the way.

But what should trusts be mindful of when deciding on a credentialing system?

Proven track record is a given. Well

‘Credentialing systems will typically be free of charge to hospitals’

established service elements and data governance structures need to be in place. In this respect, credentialing should be a core competency of any provider being considered, rather than a “one of many” service.

Also, while credentialing systems will typically be free of charge to hospitals (with vendor companies paying annual subscriptions), it is important to check other resource requirements. Credible services will take on the administrative burden of data input and service rollout. It’s also worth checking that confirmation of a healthcare industry rep’s compliance is truly automated and reported in real time at point of entry.

Ultimate control of the system, however, should always sit with the hospital.

Trusts also need to consider flexibility. It’s no good introducing a system that can only safeguard blanket policies when it is likely that specific hospital departments or areas have differing needs. Linked to this is scalability – it’s worth checking how easily new areas, entrances or sites can be added to the system.

Ultimately, however, a system needs to be the right fit. I believe credentialing has huge benefits for the NHS, but only if hospitals adopt solutions bespoke to their specific needs.

Azadar Shah is managing director of IntelliCentrics in the UK.
www.intellicentrics.co.uk



PATIENT SAFETY

JUST VISITING

Jennifer Trueland on the UK’s first ‘credentialing’ system, which controls access for suppliers and industry reps to trust areas, improving patient safety and infection control

When George Anderson first heard about healthcare representative credentialing, it was as if a light bulb had come on in his head.

“I just thought, wow, this is exactly what we need,” he says. “It seemed to be the answer to some of the issues we were facing, and I was very keen to find out more.”

Two years later, Leeds Teaching Hospitals Trust, where Mr Anderson is senior category manager working in procurement, has become the first UK trust to implement the Reptrax credentialing system.

Healthcare representative credentialing allows hospitals to control access by people representing suppliers, or potential suppliers, such as reps from pharmaceutical and medtech companies.

By controlling access to sensitive areas such as operating theatres it has the potential to contribute to trusts’ efforts to combat healthcare associated infection, as well as ensuring that procurement processes are followed properly, with a consequent impact on efficiency.

It is widely used in the US, and, indeed, it was on a trip to Boston that Mr Anderson’s colleague first came across it, bringing the idea back to Leeds.

“So many people visit Leeds,” he explains. “At Leeds General Infirmary alone we can have 25-30 visits per day. We deal with around 3,000 companies, 500 of them regularly. With seven main sites, including two teaching hospitals, some of them considerable distances apart, it can be a challenge. Even managing one site is a challenge.”

Healthcare representative credentialing essentially does what it says on the tin: it ensures that reps who are visiting hospitals have the correct training and meet the required criteria to do so safely.

For example, if a rep, as the acknowledged

expert in a particular piece of equipment is attending an operation, trusts need to know that procedures won’t be compromised. This means making sure that the person has the relevant vaccinations – for example, against hepatitis A and B, or flu – and has also completed the relevant qualifications, for example, a theatre access course.

“This is important for patients, as you don’t want someone who isn’t aware of the protocols leaning over and infecting them,” says Mr Anderson. “Plus, it’s important for the expert to be protected.”

After an unsuccessful search to find an appropriate system in the UK, Leeds turned to America. “We picked IntelliCentrics’ system Reptrax for a number of reasons,” he says. “It was by far the largest, and we felt the charging model was reasonable.

“I also liked the fact that I never have to look at the credentials – if someone has a badge, I know that he or she has the qualifications and meets the criteria required.

“It can take six or seven minutes to check each person – imagine the queue if you were doing that for 50 people a day. But this system allows the rep to book in, and we can be confident that everything is in order.”

Since that approach, IntelliCentrics has set up a UK division, and has adapted its Reptrax system for UK healthcare systems. Part of this was simply down to anglicising spellings and terminology, but it was also about creating a bespoke suite of options to suit UK trusts.

For example, the system can differentiate between requirements of different hospital zones. For instance, people visiting areas where there are children or other vulnerable groups will need the appropriate and up-to-date DBS (previously CRB) check.

Reps themselves (who have to pay a fee to be registered with Reptrax, the system being



free to NHS trusts) have largely been accepting, says Mr Anderson. “They know it’s the right idea – they know that trusts have a duty of care to their patients, and it’s for the benefit of reps too that the safety procedures are in place.”

According to Azadar Shah, managing director of IntelliCentrics in the UK, healthcare representative credentialing is a way of life in the US but is only just beginning to take off here. Like the Leeds experience, other managers have been inspired by the American example.

“Around three and a half years ago, a group of health service managers from the UK went to the US on a best practice mission – and were asked to sign in to the visitor compliance and credentialing system. They were impressed by what they saw and enquired further about it, and it happened to be the Reprax system. We’ve now been here since the middle of last year, and have been working with Leeds to develop their bespoke system which fully launched in April.”

A good credentialing system has multiple

‘People visiting areas where there are children will need the appropriate and up-to-date criminal checks’

benefits for trusts, he says, and has a big impact on efficiency, partly through helping to control the risks of healthcare associated infection, and by improving compliance with procurement.

“Too often trusts simply don’t know how many healthcare reps they have coming through their doors. I’m not saying anything against reps – they do a good job supporting hospitals. But there needs to be transparency.

“We have a situation where poor old procurement gets beaten up – unfairly – because there is disparity in pricing between hospitals, and even between wards in the

same hospital. But if it isn’t clear what’s happening, then how can they be expected to enforce procurement processes?”

At the moment, trusts tend to rely on vendor companies to ensure their reps are trained and compliant with policies around things like HAIs, says Mr Shah. “The best companies are already doing this – and these are the people who are welcoming credentialing,” he says. “They see it as an advantage that their representatives can show they are doing the right things.”

For Mr Anderson at Leeds, having a credentialing system seems like the absolutely natural step for a trust which has always been at the forefront of e-enablement. And he believes it’s only a matter of time before the rest of the health service follows. “I think trusts recognise that they need to be far more aware of who is going in and out of hospitals, particularly clinical areas where there are vulnerable people.

“As a concept, healthcare representative credentialing’s time has come.” ●

TECHNOLOGY

IMAGE PROBLEM

The surging number of scans and scan appointments is a challenge across Europe. Kim Thomas and Claire Read report on steps taken by hospitals in Belgium and Germany to connect and streamline their systems

Modern radiology departments face rising demand for their services: throughout Europe, the number of scans performed increases each year. Patients expect to be seen more quickly, and to have more say in their own treatment. At the same time, there is pressure – particularly among publicly funded services – to provide a more efficient service, doing more for less.

Hospitals are finding that they can meet increased expectations through more intelligent use of technology. AZ Sint-Lucas Hospital, based in the Belgian city of Ghent, is a good example. With 805 beds and 70,000 patients admitted a year, it is also typical of the modern hospital. Its busy radiology department, employing 15 radiologists, carries out 140,236 examinations annually, with the number rising each year.

In 2008, the radiology department decided to move from film-based processes to a digital system. It installed a picture and archiving communication system from Merge, and a radiology information system (RIS) from medavis. The aim was to provide a more patient-centric service and to minimise waste and inefficiency.

Dr Adelard De Backer, head of radiology, says that the medavis RIS appealed for a number of reasons. A key factor was its ability to integrate with other healthcare systems, such as the hospital information system and the electronic patient record system. “RIS is a very important tool in the radiology department because it crosses the whole of the workflow,” he says.

“It was essential that it could integrate with other systems, especially the picture archiving and communications system (PACS). The medavis RIS was the best at fulfilling all the requirements we needed at the time to develop a digital workflow.”

The medavis RIS uses the HL7 and

DICOM protocols to connect to other systems, and it is now “integrated deeply into the digital workflow of the hospital”, says Dr De Backer. Not only that, but the RIS feeds information and medical reports into a local distribution platform serving general practitioners, improving the efficiency and reliability of communication between the hospital and primary care.

The RIS’s powerful billing functionality was also a very strong point in its favour. “In Belgium, the billing process is characterised by a lot of rules which we have to follow very closely,” explains Dr De Backer.

Although the number of yearly examinations has increased each year since the initial implementation, the radiology department hasn’t needed to recruit extra staff because the medavis RIS has improved efficiency, and the initial outlay has already been paid back.

When they make an appointment for a patient, staff know how long the examination will take, and this enables them to create a worklist that minimises the time in the waiting room, resulting in greater patient satisfaction. “We now have a standardised workflow. Everybody knows how to perform a standard examination, how to make an appointment and how to bill it in the worklist,” he says.

The RIS has been extended into additional departments such as cardiology and nuclear medicine. Its flexibility has enabled the workflow to be adjusted to the specific requirements of the individual departments.

Although the quality and functionality were the key selling points of the RIS, Dr De Backer says he has also been impressed by a strong client/customer partnership. He attributes the smooth implementation of the system to the large amount of preparation medavis did beforehand, consulting with



healthcare, finance and IT staff to develop a good understanding of what was needed. Within a few weeks, radiology staff were using the RIS without difficulty. The RIS has been very stable but, if there are technical issues, Dr De Backer reports that they have always been resolved quickly – a single point of contact in the medavis technical support team responds to questions in a timely fashion.

It is a point echoed by Jens Brenk, IT project manager at the Klinik Dr Hancken in Stade, Germany.

Until recently, the seven site organisation had two different RIS systems – as well as a separate ward information system, hospital information system and radiology therapy information system. Support and maintenance of this complicated IT infrastructure was complex and expensive and, when problems occurred, it was often difficult to find the source of the error.



In 2013, the decision was taken to introduce medavis RIS at all sites. This ensured that a system with three databases could be united into one central system.

All seven sites are connected via high speed broadband to a central, high performance service and 400 users have access to the RIS and to all patient data.

The conversion provided two big challenges, however. First was a technical one: uniting the many different IT systems in medavis RIS. Second, about 400 people had to become acquainted with the new system.

To make the system as efficient as possible for users, medavis RIS has sophisticated user roles defined within it, all workflow-oriented. An important prerequisite for the creation of these was comprehensive on site visits. Departments were visited, and users interviewed on their requirements for the new system.

According to Mr Brenk, each day invested

'A 2012 Department of Health report said the number of scans carried out for the NHS has increased threefold in the past 10 years'

in this preparation phase paid off during the implementation phase. Only by knowing the requirements of particular user groups could the system workflow, and training in that workflow, be adapted precisely to the individual needs of users.

These on site visits were combined with training sessions. Users were trained in specific groups – nuclear medicine, physicians and finance, for instance.

"The medavis training concept has great merit," argues Mr Brenk. "All users were provided with a manual beforehand so they had previous knowledge at the time of the training and were able to ask specific questions."

That involved up to four medavis trainers, who were on site for several weeks. Many of these individuals become support staff once the system was live – meaning users already knew such individuals well.

The conversion of all seven sites was done in only five months – from October 2013 to February 2014 – with the final system conversion taking place over just one day. "There was not a single day of delay during the whole process," reports Mr Brenk. "We could meet all deadlines."

With the implementation of a uniform RIS, Mr Brenk says the stability of the system has been improved and error finding and debugging has been made easier. The medavis Agent software distribution tool has also significantly reduced the amount of time administrators need to spend monitoring systems. It ensures updates as well as improvements are installed automatically.

There are efficiency improvements for patients too. "The central appointment scheduling was especially important for us in order to be able to offer patients an appointment at another site if no appointments are available at the requested site."

The growing demand for statistics can also be satisfied quickly and easily, due to the central medavis RIS database. "We now have only one RIS to access radiological and nuclear medical information and [can] create analyses across all sites from one database," he explains.

The increasing need for data illustrates how the requirements on healthcare organisations can change over time. Here too, the management at Klinik Dr Hancken have found benefits from working with medavis. As a medium-sized enterprise, the company can be flexible, responding speedily to requests from customers. It also means that the medavis RIS can grow continuously in step with the needs of its clients.

While it may be difficult to predict some future trends in healthcare, the ongoing demand for radiology services is unlikely to change. A 2012 Department of Health report cited data which showed the number of CT and MRI scans carried out for the NHS has increased threefold in the last 10 years. Others have reported that the number of some common imaging tests shows an average increase of up to 15 per cent every year.

It is clear, then, that hospitals must have strong systems to help meet this demand. As the experiences of staff at AZ Sint-Lucas Hospital and Klinik Dr Hancken show, smarter use of technology may be one important solution. ●