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INNOVATION THROUGH TECHNOLOGY

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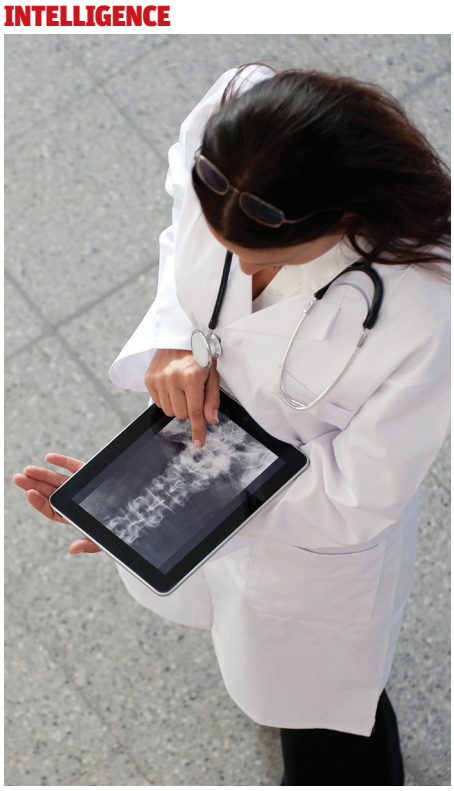

ED KENNY AND TIM HATCH ON DATA CENTRES

The focus for this supplement is transformation through technology. One key area for delivering that transformation is in the data centre – the backroom of the IT department where all critical patient and business information is stored, processed and, ideally, shared.

Patient care in the NHS is becoming increasingly reliant on clinical IT applications mostly running on Intel servers. The NHS could save millions by no longer running these on out of date, inefficient hardware and systems.

Modernising the data centre and upgrading your servers, SAN fabric, storage and back-up will transform not just the cost of running the key systems but also the way IT works for clinicians. A modern data centre based on an Intel-based converged technology stack ensures agility and a faster response to clinical, patient and administration demands. Most importantly, it enables the delivery of better healthcare outcomes, helping NHS organisations to meet their objectives of achieving clinical excellence, improving patient safety and improving patient experience.

In a modern data centre, new applications can be easily and seamlessly installed, ensuring ease of information sharing with other clinical and administrative applications.

A modern data centre frees your IT team to focus on the issues that matter to the organisation rather than maintaining the servers, re-engineering the cables and managing unnecessarily complex networks. A data centre based on converged technology is more reliable, cheaper and easier to run and maintain, takes less physical space and consumes less electricity.

It also paves the way to a private cloud in which data is securely held on your site, opens up new ways of understanding the costs of IT provision and most importantly helps with the sharing of patient information.

By improving the information flow to clinicians and administrative staff through consolidation and rationalisation in the data centre, improving security and managing access to systems safely, data centre modernisation can help acute trusts achieve the goals of improving patient care, patient safety, patient experience and delivering efficiencies.

Achieving these gains requires the right partners: Intel's technology is proven and with a place on all major government contracts and a track record with over 100 NHS customers, Computacenter understands your key issues, potential risks – and how to mitigate them.

NHS ICT can do more than just add value. It can drive organisational change, enable better care and provide the foundations for a more cost-effective and efficient NHS.

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INFORMATION MANAGEMENT

OUR OWN PRIVATE CLOUD

Daloni Carlisle on the benefits of creating a new data centre to replace historic, fragmented systems

North and East London Commissioning Support Unit, like its counterparts around the country, has a complex job looking after IT for GP surgeries and meeting the data and business intelligence demands of a wide variety of customers.

Thanks to a modern data centre, this job should be much easier in future. It should also future proof the CSU and make it agile in responding to increasing demand for information and analytics.

The data centre is basically the server room; it's where all the applications that clinicians and managers use on their desktops are housed along with the data. Typically, they have grown up higgledy-piggledy, with multiple servers connected by multiple cables and managed via multiple interfaces.

"Back when we were a PCT cluster in 2012 we had already started to look at modernising our data centre as we were not flexible enough," says NELC CSU IT manager Greg Peacock. "If we wanted to add an extra chassis, we needed to do all the fibre work and all the data work separately. It is quite a complex and expensive process."

So with nine PCTs coming together, in 2012 North East London NHS (as it then was) set about modernising the infrastructure. "We knew we had to position ourselves in a much more flexible way," says Mr Peacock. "Sticking with the old technology just was not going to do it."

Cisco and NetApp Flexpod systems were selected through rigorous research into best-fit technologies, working with Computacenter to configure, test and install the new data centre. Computacenter made sure there was one point of contact for all technical matters.

Scott Salter, who worked on the project for Computacenter, says: "NEL NHS already had an existing VMware and NetApp Storage estate, and were very conversant with Cisco Networking, so this accelerated the learning process. The support staff could quickly focus in on the newer technologies. Computacenter built the platform to a running condition and handed it over to the support teams.

"The deadline was to meet the start of the London 2012 Olympics, and for the support teams to have a virtualised platform ready for remote users. NEL NHS met their target."

At a stroke, the CSU quadrupled its data storage capacity and can add more storage and processing power quickly and easily. Four cables have replaced the 15 the data centre used to use and two blade enclosures replaced four. It's smaller, neater, uses less power, is easier to manage and quicker to expand.

The new platform now supports core services including email, file servers and data warehouses. With a single management interface for compute, network and storage elements, the infrastructure is easier to manage and enables Mr Peacock and his team of three to deliver new IT services quickly and efficiently.

"It's now a simple job to expand and add another chassis or extra shelves," says Mr Peacock. "We can do it in house. We used Computacenter for the initial set up but part of the contract was to skill up my team so that we can manage the infrastructure and network ourselves."

Essentially, the CSU has now got a "private cloud". Instead of individual applications and data being stored on individual, locatable servers, all data and applications are housed within one system. It's a cloud in that the data does not exist in a given space; it's private in that it is all in one place that is controlled by the CSU.

This has important implications for the

‘The picture in the NHS is typically confusing and complex. One trust had 837 applications in its data centre’

CSU which is now also a remote processing centre for the Health and Social Care Information Centre.

“We have the ability to build an isolated environment secured from the rest of the environment using this technology,” explains Mr Peacock. “We have firewalled the servers within the virtual environment but it still sits on the same physical equipment.”

The next step is to build up the CSU’s informatics system and this is a work in progress. The SQL platform, which is already housed in the new data centre, should be able to handle the ever-growing demand for analytics.

“People are always asking for bigger and bigger servers,” says Mr Peacock. “We can now meet that demand without having to go back to market.”

It’s a common refrain. “You’ll find the same pressures everywhere – and not just in the NHS,” says Ed Kenny, Computacenter’s client director for health.

“With all the applications and clinical information stored and collected in many different systems in the data centre, the picture in the NHS is typically confusing and complex. We have worked with one trust with 837 applications in its data centre.”

Managing this is expensive, he adds. Modern data centres put everything into one place, centrally managed. They use less electricity and require fewer IT engineers. They are also easier to expand to meet new needs and can join data more effectively.

“Because all the information sits in one place, it can all be easily connected,” says Mr Kenny. “When you start to think about the information needed to care for people with multiple co-morbidities and to care for them along care pathways, this becomes ever more important. Delivering that information securely, quickly and reliably to frontline carers and clinicians will make information the new super drug.” ●

CLOUD SHIFT

One of the benefits of moving to a private cloud – where all the applications and data are hosted on virtualised servers – is that it allows organisations to get control of their IT costs.

“In the past, organisations invested in IT as an act of faith – they knew they had to have it but it was hard to work out what it cost and what value it brought,” says Alan Priestley, strategic marketing director for Intel.

Moving to a private cloud allows an organisation to view its IT as an operational cost rather than a capital expenditure, he says.

“You can move to a position where the IT department can tell you it will cost this much to provide, for example, email services to this many people.

“IT can provide costed services to the business units that are required to use it.”

Yes, Mr Priestley says, modernising a data centre and moving to a private cloud requires initial capital investment but he argues: “In the long run your overall costs will be lower.”

He adds: “None of this is without risk and it is vital that you choose the right partner who understands the process from end to end.”

ALAMY

TIM VERNON ON CUSTOMER FOCUS

IN ASSOCIATION WITH OPTEVIA

Optevia

Organisations providing healthcare services face increasing pressures to maintain the quality and consistency of care whilst the sector undergoes transformation to meet the vision of an NHS built around patients, led by health professionals and focused on delivering world class healthcare outcomes.

Optevia, a leading provider of CRM solutions to the healthcare sector, is helping health and social care trusts to create innovative and bespoke solutions based on the Microsoft Dynamics CRM framework, designed by the users themselves to reflect the work that they do in the ward, the community or office. This not only provides a better patient experience by meeting the higher expectations of services but also reduces costs and operational waste.

Dynamics CRM opens up many capabilities for trusts and providers to rapidly respond to their business needs. Whether it be a new patient portal, managing a new initiative or deploying community mobile working – users soon realise they can create multiple business applications with full integration to other data sources.

All implementations of Dynamics CRM in the healthcare sector depend on understanding and mapping ways of working and processes across the different occupational groups. Each implementation reflects the analysis and diagnosis of how professionals wish to work and meet their information needs.

Complex business relationships and continued customer and stakeholder engagement require digital and online interactions that cut staff costs while improving customer service. Optevia provides Dynamic CRM solutions that track, log and manage these interactions across any health organisation.

Optevia has been a Dynamics CRM reseller and integrator, dedicated to the UK public sector, since helping Bill Gates launch the product in 2004. It has now completed over 150 deployments of Dynamics CRM. Projects include clinical and non-clinical services, community-based organisations, integrated health and care trusts and commissioners. Optevia has a range of CRM solutions designed for UK healthcare that reduce the effort, time, cost and risk of implementing Dynamics CRM. Optevia Health Essentials includes:

- **a single community care record including full mobile working on and offline for community-based staff**
- **membership, stakeholder, communications and marketing operations**
- **commissioning stakeholder relationship solution**
- **self-service portals for patients to access and update forms and workflow for long term condition management such as diabetes and mental health**
- **hospital acquired thrombosis management**
- **case management activity and load balancing for wards.**

Tim Vernon is managing director of Optevia

www.optevia.com

INTELLIGENCE

READY FOR A CUSTOMER RELATIONSHIP

CRM systems are fundamental to many businesses. But what can they do for the NHS? Jennifer Trueland finds out

In the new NHS, it's even more vital for trusts to consider what's important to the people who matter – the staff who work for them, the patients they serve, and the commissioners who buy their services.

That's the view of Tom Bell, GP stakeholder engagement manager at Cumbria Partnership Foundation Trust. "We've got the perfect storm coming in terms of increased competition; we've got to get more outward looking," he says. "As [management guru] Peter Drucker says, you have to know who your customers are and what's important to them."

He believes that CRM (customer relationship management) is the way to do this and has been working with Optevia to achieve this.

As a model for managing an organisation's interactions with clients and stakeholders, CRM has become part of the fabric of business life. Only relatively recently, however, has it started to make inroads into health services and the NHS.

Yet according to Steve Lyon, business development manager for health and housing at CRM specialists Optevia, CRM is a great way to create staff and resource efficiencies, and to improve the patient experience.

Optevia – a Microsoft "inner circle" partner and expert in Microsoft Dynamics CRM – supports users of the software to exploit the technology to meet their needs, and those of their customers.

Rather than an off-the-shelf solution, trusts can work with Optevia to create their own systems to meet their exact needs, whether these requirements are around clinical or business functions.

"CRM is a technology framework for creating solutions," explains Mr Lyon. "Often that means managing customer interactions, but it's much more than that; it's something that gives organisations the capability to produce ways of delivering solutions."

In a commercial setting, he adds, CRM is a way of managing existing customers, prospective customers, and customer complaints, with the idea of building and maintaining a healthy customer base. In the public sector, however, it has the added value of being able to feed back into the service the information which can help it perform better and improve effectiveness.

"The public sector is still catching up, but we're increasingly expecting all our interactions, in whatever settings, to be digitised, and health is no different," he says.

He sees enormous potential for CRM across the health sector, in clinical and non-clinical settings. It's a great way of interacting with stakeholders (see Lancashire case study, overleaf), be they the local CCGs or patients.

Business development

This can build the intelligence that is vital to business development in terms of bidding for contracts.

"In clinical terms, health service organisations are looking for effectiveness, which might be based around CQUINs," adds Mr Lyon. "But more importantly, the overall ambition is to reduce the costs of the old-fashioned ways of working. Trusts have a whole range of requirements and have to ask what they want to do and what they want to know. CRM can help." (See case studies, overleaf)

For this to happen, he says, the system has to be usable and, ideally, designed in conjunction with the end users. "The obstacle is that people have busy lives elsewhere, but this is a short term obstacle and the results are definitely worth it."

CRM is designed for modern ways of

CASE STUDIES OVERLEAF ▶

ALAMY

working, including mobile working, making it ideal for community teams. Community nurses can add to the patient notes on tablets while out in the field, for example, and this is automatically transferred to the record back at base. "Online or offline, the CRM doesn't care," he says, explaining that it will transfer whenever it gets a signal.

CRM has its fans in the health service, sometimes among managers who have experienced it elsewhere. With a background in business, having previously worked for the government's Business Link, Mr Bell already knew the value in having a reliable system for connecting with customers and recording interactions.

"When I joined the trust, there was already an old CRM in place but it was gathering dust. It was only used for membership, so the best value wasn't being extracted from it. The trust has learned that you need to continually invest in IT projects to get the best out of it, and so we wanted to customise the CRM so that it worked well for us."

As a foundation trust, capturing the views of members is vital for Cumbria, as is making the most of engagement opportunities. "We had some clear objectives; we wanted to build bridges out to the stakeholder world, such as GP practices and leagues of friends.

'We wanted to build bridges out to the stakeholder world, such as GP practices and leagues of friends'

"If you capture issues from stakeholders then you get clarity over what you're doing and where you're going."

Engagement is increasingly important for the trust in the new world of clinical commissioning groups and health and wellbeing boards. But it can be hard to prove the value of engagement activity. "It's about impact, but there are lots of roles and it can seem quite woolly if there's no sense of what you want to achieve," says Mr Bell.

By bringing together a proper record of all engagement, and the resulting comments, you can create a full picture of what's important to your customers, and how you are doing in relation to that. CRM adds hygiene to the audit trail, he adds, and also ensures that the intelligence is gathered, stored, and available to colleagues. "It's the old thing of what happens if you get run over by a bus – with CRM there's continuity, there's information which is of use to your colleagues."

CRM is a great tool for reporting to senior managers about what's actually going on, he says. "It brings the information to life in terms of the bigger picture," he adds.

Optevia worked with the trust to configure the dashboard reporting tool within CRM, effectively embedding the "big picture" element. The dashboard means that all data can be recorded on the system from any device, which avoids replication and saves on travelling time as the engagement team doesn't have to return to a desktop computer to record outcomes of meetings. The dashboard can also transform the data into simple graphics for presentation purposes.

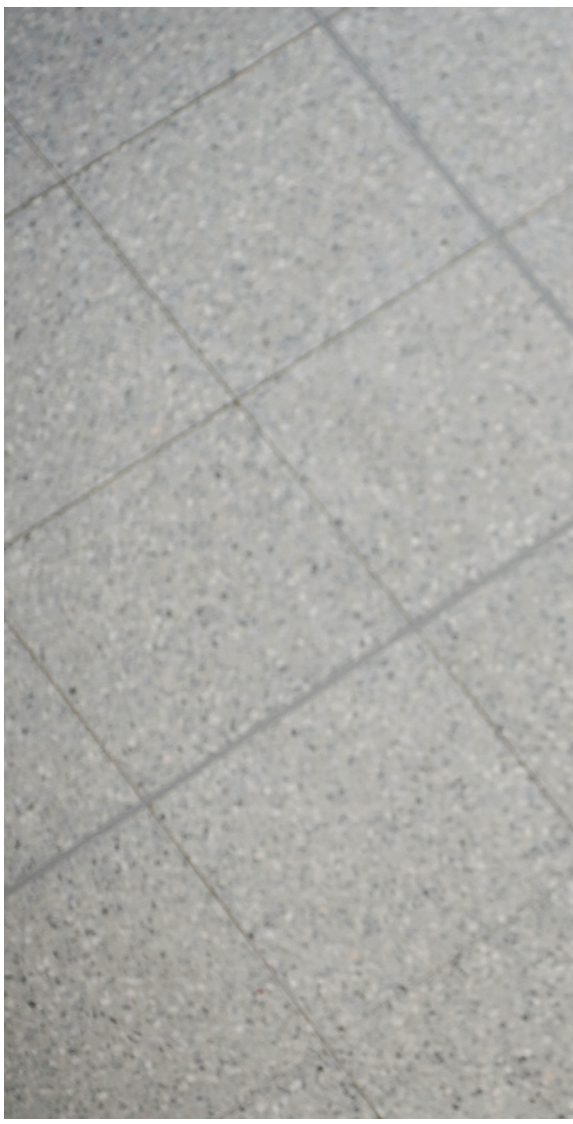
Cumbria takes engagement seriously, and has recently built a team of engagement workers. "At the end of the day we're selling something – we're managing and building our reputation with stakeholders. The CRM is key to helping us do that." ●

Optevia

INTELLIGENCE: CASE STUDIES

WHAT THEY REALLY THINK OF YOU

CRM systems can reveal stakeholders' perception of services, engage clients and improve care



LANCASHIRE: USING CRM IN ENGAGEMENT

As a foundation trust, Lancashire Care is understandably keen to engage with its 14,000 members and stakeholders, and to do so in an organised and structured way.

So it has turned to public sector CRM specialist Optevia to make that happen, and is very happy with the results.

"At the trust, there were a number of separate databases viewing different aspects of management information," says stakeholder engagement manager David Keddie. "We had a membership database which was externally managed, and there were others recording different outputs, such as a log for GP enquiries. We wanted to try to rationalise this to have a single resource which would be a repository for all that information."

The trust worked with Optevia to develop a solution that would lead to all its engagement information being stored in Microsoft Dynamics CRM, a project that took around six months to complete.

An important aim for the new system was capturing all the engagement activity being carried out at the trust, and that by no means stops at the membership.

Stakeholders such as GP practices, local politicians, local authorities and third sector organisations are each important to the trust, and often have valuable insights to share. The Microsoft Dynamics CRM solution allows all engagement activity to be recorded in the single resource, so that senior management can see at a glance exactly who has been talking to whom, when and, crucially, what has been said.

The result is an unparalleled picture of what members and stakeholders are thinking, what they like, what they don't like, what they feel is going well, and what isn't working.

"Sometimes there's a lag between stakeholder perception and what the trust is doing about an issue, so one of the aims of CRM is to sharpen up communications with stakeholders," says Mr Keddie.

"You can do stakeholder bulletins, but you can also make them more specific. For example, you might have a general bulletin for GPs as a whole, or something more bespoke."

When issues are raised with the trust, there is an opportunity for specific comments to be recorded and captured. This could be to do with eligibility criteria for referrals, for example, or waiting times. The comments facility gives a fuller picture to managers about what is actually causing concern on the ground.

"In broad terms, the trust is seeking to protect and grow its business. To do that, it has to provide services of a particular quality. CRM lets us record engagement activity with dialogue, so it gives us a more sophisticated understanding of what comments are."

This ensures that the trust remains competitive as intelligence from stakeholders becomes part of the corporate memory.

As the range of engagement increases, other features of the solution are becoming invaluable. For example, using an engagement calendar that records all instances of engagement helps ensure there isn't duplication. "With 7,000 staff over 400 sites we don't want to be uncoordinated," says Mr Keddie. "We don't want several people targeting the same GP practice at the same time – that's not helpful for the GP, and not great for us; the information we have means we can plan our engagement."

Lancashire Care is also using the CRM to segment stakeholder communications and target audiences more specifically. As an example, the CRM has been used to target public members within a particular trust constituency to inform them of forthcoming public governor elections and to encourage members within that constituency to stand for election as governors.

Mr Keddie has a number of tips for other organisations thinking of taking the CRM route. "It's an incremental approach. Start the conversation as widely as possible; the initial scoping needs to be as broad as you can make it. Technical input is also key.

"With any database you have to establish a critical mass of colleagues who can see value in the resource. Manage the process so that colleagues have access to CRM, that they have "how to" guides, and protocols. Information governance is important too.

"It's working well, but it's not completely finished. We appointed relationship managers several months ago and as the range of engagements increases, the quality of the intelligence is improving. CRM is a key piece of infrastructure that underpins what the engagement team is doing."

On the move: clinicians can access CRM systems via mobile devices

ALAMY

USING CRM TO IMPROVE PATIENT CARE

Trusts free to choose their own solutions are now starting to work with Microsoft and Optevia to develop joined up solutions to manage multiple data sources and to meet specific needs. For managers and clinicians alike, Microsoft Dynamics CRM is ticking the right boxes.

Most trusts share the problem of managing multiple data sources in which there are data silos. Data is not shared; it may be duplicated in multiple sources; and can lead to errors and mismatches, for example where one data source is updated with a new address but a second is not. There are also usually some applications that have been set up in-house by clinicians. For example, a doctor might have developed an application to meet a need that has grown into an enterprise solution for just one group of medics.

The health service is not unique in encountering such challenges. Other enterprise-sized public sector organisations share them too and have started to solve them with CRM in which they can offer applications that meet the needs of particular teams but have the ability to pull in data from different sources so that it can be updated, shared and viewed consistently. In other words, offering bespoke applications without data silos.

'Being able to work in a coordinated way with patients and with colleagues soon starts to bring its own rewards'

As trusts start to develop strategic objectives for offering streamlined care, increasingly clinicians are working in a more joined up way: for example, a patient coming to hospital for heart surgery might have rehabilitation at home, or in the community. That means that clinicians in the community will need information about what happened to the patient in hospital.

The end objective is for a truly joined up system that allows clinicians to call up and add to the patient record in whatever setting they happen to be. Getting there is often a journey involving lots of small focused projects and iterations involving the business users – Microsoft Dynamics CRM providing the glue that will hold it all together in the background – for example, to get data feeds from different sources and to maintain a data model that holds all the information for each patient.

Although most users access their solutions through desktops, Microsoft Dynamics CRM can offer exactly the same experience on mobile devices regardless of whether they are connected to a network. The latest version of CRM includes native deployment to W8 and iPad devices.

Data protection issues with hand-held devices are avoided by offering a high level of security and writing to the application rather than the device – for example, a photograph of a wound is held against the visit record for a patient and not in the device's image folder.

Clinical engagement

The success of Microsoft Dynamics CRM projects depends on meaningful engagement with clinicians. The days of IT departments imposing a system on clinicians is over. Project teams work closely with Optevia in ensuring that their business users are involved in the analysis process and have a hands on design role. There are no surprises for the users when the solution is released for their use and they have had a say all the way along.

Trusts choose Optevia and Microsoft Dynamics CRM for several reasons. They often already have access to Microsoft technology and want to continue to invest in a platform that will be supported for a long time. In addition to sustainability, Microsoft Dynamics CRM is also very scalable: projects can include a few users up to a few thousand.

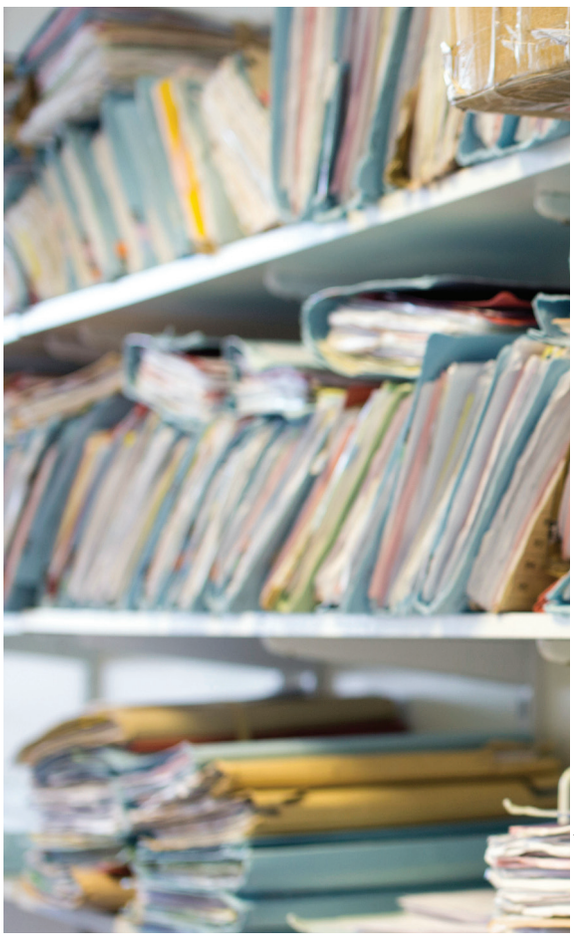
Although most trusts expect to see new systems bring some financial benefits in terms of reducing duplication, and being able to close down some existing computing systems, often that's not the main measure of success. Being able to work in a coordinated way with patients and with colleagues soon starts to bring its own rewards.

Introducing new IT systems and ways of working like Microsoft Dynamics CRM is getting easier as generations migrate through their careers. Junior doctors and nursing staff coming through have grown up in a computerised world, and they expect to use IT; it's never been a problem with them. At home, all generations are exposed to technology in the proliferation of devices and apps for fun and shopping and gain access to information easily. ●

ELECTRONIC RECORDS

NOTES THAT CAN STILL BE USEFUL

Scanning records can ensure the NHS makes best use of past information – and digitising miles of notes is less daunting than it looks. Jennifer Trueland reports



What do you do if you've got medical records stretching some 10 miles, taking up valuable NHS real estate over several hospital sites?

You don't necessarily want to destroy them: even much older notes can contain vital clues to a patient's condition today and, in any case, you're creating new records all the time, which need to be housed and which contain information about patients that clinicians need.

The challenge for the NHS is to capture the vast amount of intelligence from the paper documents and make it useful – at the same time as releasing vital space.

Aintree University Hospital Trust is one trust to take this on. "We had to find a way of managing what was a very large record store – we were going to have to build another building, and didn't have the capital to do that," says Mike Pearson, consultant physician and professor of clinical evaluation. "So we had to come up with another solution."

Aintree had its medical record library scanned by Capita TDS and, using advanced optical character recognition (OCR) software, added intelligence to the data that was harvested.

The medical records are now electronic, can be accessed by more than one clinician or coder at a time (within strict governance protocols), and have been customised so that the most useful documents can be retrieved within two or three clicks.

The OCR software has allowed the most commonly used forms for each specialty to be recognised and filed so that, for example, the clinician can view the latest echocardiogram and, importantly, can then look at it in context by examining the pages which succeed and precede it in the record. This, says Prof Pearson, gives a sense of the record being in 3D rather than on a 2D screen.

At Aintree, it's been a big success. It is also taking the trust towards the goal of, if not paperless by 2018, then certainly paper-lite.

Scanning and digitising the paper record seems an obvious thing to do, but past attempts have faltered because the technology simply hasn't been up to it.

Vijay Magon, managing director of CCube Solutions (developers of the software used by Aintree), has more than 20 years' experience in the electronic document management industry so is deeply familiar with the challenges of moving away from paper-heavy.

"To get a clinician to move away from paper, that record needs to be as complete as possible," he says. "In fact, what you have to provide is something that is better than paper. With recognition technology, you can get the software to make sense of the data trapped within the paper record.

"The key is making that information available quickly and easily, so that you don't have to flick through pieces of paper: you don't have to search for a record, you don't have to navigate through endless pages, and you don't have to press too many buttons to get to the information you need."

High quality scanning is of course vital, says Neil Murphy, Kodak Alaris' UK sales manager for document imaging. "Our scanners range from low to high volume as was required on these CCube Solutions projects ," he says.

"But it's no good having that speed if it doesn't feed documents reliably – you don't want documents getting jammed up. Our scanners are designed to feed documents of different lengths and different thicknesses, and are very robust at high speeds."

Notable achievement: St Helens and Knowsley trust was first to stop using paper clinical records

ALAMY

Scanning just one set of notes can involve "normal" pieces of uniform A4 paper but can also include results of varying sizes and thickness and even the lengthy document of an ECG tracing. Some can also be hard to read. "We're looking for maximum image quality," says Mr Murphy.

He senses that the end of the National Programme for IT has led to an upsurge in interest in scanning and digitising records. "There's a lot more of this going on now that the national programme has effectively ended. Now there's the opportunity for individual trusts to find the solution that's right for them. People's needs vary, but these are exciting and interesting times, with great opportunities to improve things for clinicians and for patients."

It can also mean significant performance gains, says Jacqui Page, divisional general manager for surgery with Milton Keynes Hospital Foundation Trust.

Ms Page, who led the trust's move to digitise its entire patient records library, says the investment is already beginning to pay off in terms of patient safety and cost efficiencies.

One of the main benefits has been in ensuring that patients attending outpatients are always seen with their notes. "Like other trusts, our medical records retrieval rate was about 98 per cent – that meant that 15 to 20 patients a day were seen without notes or, on rare occasions, had to have their surgery cancelled. This has been a real transformational project and since it was put in place, there hasn't been a single patient cancelled because of no notes; that's a real achievement."

'My main tip is to be brave: it is achievable, but you have to be focused on the end goals'

There was also a space issue, she adds, with the library already holding 287,000 records – just three years of notes.

Previous efforts to digitise had been less than successful. "We had a cull and made the notes available on CD but it was really clunky and the clinicians hated it," she says.

"We wanted a complete and comprehensive back scan of the records and took the decision to scan them over a nine month period. We outsourced this to Hugh Symons Information Management, but, going forward, we wanted to keep control of patient notes so we have set up an in-house scanning bureau. That means that doctors can still write on paper but it is scanned and becomes part of the electronic notes."

The benefits are huge, she says, and some were unanticipated. "It's had a real impact on medical secretary workload. Previously people were knocking on the door looking for medical records, but that's not the case now.

"It's also made it much easier to conduct research and do audits – you don't have to spend ages gathering 200 sets of notes: they're available on a screen."

That also helps the business side of the trust, she adds, as it's easier to provide evidence to commissioners.

"The notes are available 24/7, 365 days of the year," adds Trudi Mynard, the trust's head of patients' services. "My main tip is to be brave: it is achievable, but you have to be focused on the end goal."

Getting everyone onside, including clinicians and senior management, is also crucial, adds Ms Page. "You can't underestimate the amount of encouragement and persuasion; it has to come from the top, and the bottom, and meet in the middle."

She believes that it was important that the change process was led by business rather than IT – but having said that, you have to get the IT right. "Don't go for the minimum spec, go for the spec that makes it work; you can't skimp on IT."

As one of the pioneers of digitised records, Neil Darvill, director of informatics at St Helens and Knowsley Health Informatics Service, is well aware of the importance of good IT.

St Helens and Knowsley Teaching Hospitals Trust began the mighty task of moving to electronic records in 2009 and in 2010 announced it was the first to stop using paper medical records in clinical practice.

Although there were the usual drivers of saving money and improving patient safety, there was another, quite pressing need to make the change: a move to new hospitals without storage for medical records. "It meant we had a hard deadline," he says. "The logistics were challenging, but it was an incredible project to do and it's been really quite revolutionary."

The service has won awards for the system that has seen the creation of an in-house scanning bureau and is now using its experience to offer a fully managed service to digitise Lloyd George records in GP practices.

"We've mopped up the bulk of the paper [in the trust] although nursing observations are still done on paper," says Mr Darvill. "We've had really good clinical engagement; it has to be designed by and for clinicians. We're on version four now and it's improving all the time. Nobody would go back to the way it was before."

So while fully digitised care records may be the future, the experience of these three trusts shows that the path to that future includes making the best of the paper records that we already have. ●