

Achieving Digital Excellence in the NHS

A Strategic Analysis of Digital Transformation Projects in the NHS

January 2018



A high-level policy publication recognising excellence in healthcare digital transformation projects and strategies, from across the NHS, with a view to encouraging rapid adoption and replication of technology-enabled services by other NHS organisations.

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Executive Summary

A high-level policy publication recognising excellence in health-care digital transformation projects and strategies, from across the NHS, with a view to encouraging rapid adoption and replication of technology-enabled services by other NHS organisations.

“Achieving Digital Excellence in the NHS” is a publication series designed to showcase, and analyse, the very best of digital transformation projects from across the UK’s NHS. Following the success of our 2017 inaugural report, this 2nd edition provides a compilation of exemplar case studies which discuss and evaluate projects where digital, connected and mobile technologies are having a substantial impact upon clinical, administrative and organisation processes.

Strategic decisions about digital transformation and the associated investment in information and digital technologies can all too often be a footnote to NHS board discussions. This report sets out existing opportunities to transform health-care using proven digital technologies, providing essential insight into successful methods for the implementation of these technologies and an analysis of the benefits realised by those organisations furthest on the digital roadmap.

This series provides Senior NHS Managers, Digital Transformation Teams, Healthcare IT Managers, Clinical Planning Teams, CIMOs, CIOs and Healthcare Professionals with detailed case studies from existing digital projects with a view to disseminating best practice, shaping future policy, preventing development duplication, and encouraging rapid adoption of digital services.

Publication Priorities

- » Showcase a detailed collection of digital project case studies/reviews from across different NHS organisations that demonstrate excellence in delivery

- » Analyse project components driving success
- » Understand strategic objectives and implementation policy
- » Recognise lessons learnt, avoidable implementation problems, and challenges of implementation
- » Analyse key project metrics (investment and resource requirements)
- » Document ROIs and outcomes
- » Highlight different technologies and the opportunities they present

Digital Transformation – Sharing Best Practice

The series is designed to provide key decision makers with access to case studies which capture barriers and facilitators to implementation of digital health from across the healthcare ecosystem. These are all examples of projects that have had extremely successful implementations and which are driving significant returns on investment for the organisations involved.

Providers are all facing the same financial and service delivery constraints whilst at the same time being asked to provide greater efficiency and standards of service delivery. Digital technologies are widely accepted as having a major role to play in this equation, and this regularly leads to duplication in terms of service redesign, care pathway transformation, digital integration and IT development projects. Shining a spotlight on the organisations that are leading the way in particular areas of digital transformation has the benefit of identifying those effective implementation methodologies and sharing lessons learnt from those deployments. Helping organisations to utilise resources more effectively and reduce the time to deploy digital technologies and services. ■

Creating High-Value and Sustainable Health Systems



InterSystems is the engine that powers some of the world's most important health-care solutions. Our products for data management, interoperability, analytics, and health information systems are used to turn the vision into a reality - improving patient care and safety while managing costs.

Our technology is being put to the test by frontline staff today in England, Scotland, Wales and Northern Ireland, to make a real difference to patient care, and we are working with some genuine pioneers, in hospitals and other care settings, to help them join services across a full range of health and social care environments. Interoperability and integration is fast becoming a reality alongside digital maturity.

For more than 35 years, InterSystems has been the engine behind the world's most important applications and we are dedicated to working with the NHS and making our customers successful.

Our priorities remain to:

- » **Empower individuals** – where care providers and payers have timely and accurate information, tools and services they need to efficiently manage workload, improve workflow and make the best care and business decisions. And where patients become more engaged in their care, with access to a comprehensive view of their health information and services, including appointments, prescription refills and communication with clinicians

- » **Connect care communities** – where knowledge-driven, evidence-based care is provided seamlessly across organisational and disciplinary boundaries

- » **Enable responsive organisations** – where health-care professionals can work effectively as individuals and as part of coordinated teams, with powerful, reliable software to keep everyone synchronised while adapting to ongoing change

That is our shared passion, and it drives a continual commitment to excellence in our software and services. Whether in financial services, healthcare, government and wherever lives and livelihoods are at stake, millions of people worldwide depend on the power, scale integration and performance of InterSystems – the power behind what matters.

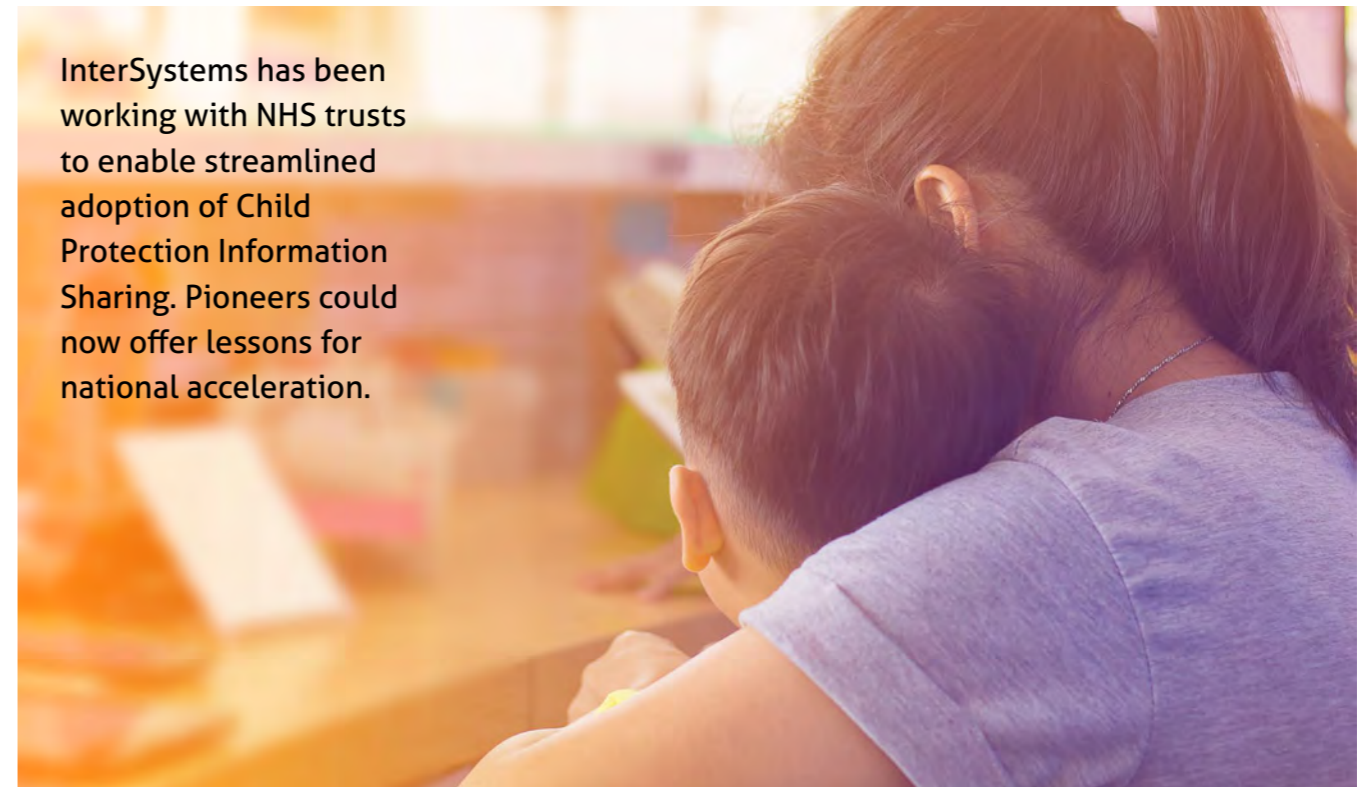
For more information visit: InterSystems.co.uk

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Child Protection Information Sharing: An Integration Mission to Protect Vulnerable Children

InterSystems has been working with NHS trusts to enable streamlined adoption of Child Protection Information Sharing. Pioneers could now offer lessons for national acceleration.



Set up to help save lives, Child Protection Information Sharing (CP-IS) launched in 2012, to provide frontline unscheduled care professionals with access to pertinent but vital information – background that can quickly inform a decision to contact relevant social services when a child may be at risk.

Doctors and nurses can instantly see, via a flag on the child's record, if the individual they are treating is subject to a child protection plan or is being looked after by the local authority.

CP-IS has started to enable important results for safeguarding. Approximately 60,000 at-risk children are so far covered, but there is a long way to go to create the national picture necessary to protecting children whichever unscheduled care provider they visit in any part of the country.

With only 14% of health organisations and fewer than a third of local authorities using CP-IS as of March 2017, renewed vigour for widespread adoption is now being encouraged from the centre.

Important lessons can be learnt from pioneer adopters where CP-IS has been deployed with relative ease, to now help health and social care organisations across the country protect children.

Where trusts have made deployment easy:

- » Homerton University Hospital NHS Foundation Trust became the first NHS provider to go live with real-time ac-

cess to CP-IS in 2014. Determined to spearhead national adoption, the trust concluded that it would be too costly and time-consuming to develop and certify integrations between its individual IT systems and NHS Digital's centrally held CP-IS database. Instead the trust worked with InterSystems to connect to CP-IS, using the HealthShare informatics platform, accredited by NHS Digital.

» Child protection information is transmitted securely from local authority IT systems to the central NHS Spine. InterSystems HealthShare is used to access the Spine and incorporate CP-IS information into the hospital's electronic patient record (EPR) to notify professionals when they are treating a vulnerable child.

» Calderdale and Huddersfield NHS Foundation Trust, already had HealthShare in place when it embarked on its mission to connect frontline staff to CP-IS. It is now using HealthShare for a real-time connection to the Spine 2 national patient demographics database, and direct access to CP-IS.

» The Pennine Acute Hospitals NHS Trust has started to drive CP-IS adoption throughout its region, following a go-live using HealthShare to deploy CP-IS "out of the box". The trust went live with CP-IS, flagging vulnerable children on the trust's Symphony emergency department system.

CP-IS will become increasingly effective in safeguarding the most vulnerable children as more NHS organisations and local authorities come on board. Policy makers, regulators, the NHS, local authorities and the government each have a role to play in achieving important widespread adoption, so that vulnerable children can be protected wherever they are.

Interagency Information Exchange: Scotland's Blueprint for Integrated Care



A specially created Interagency Information Exchange is drawing together real-time patient data from across health and social care at significant scale in Scotland, providing frontline staff with the ability to make better informed decisions for individual patients and clients, and to co-ordinate interventions across organisational and care boundaries.

Working with technology provider InterSystems, NHS Lothian has developed an Interagency Information Exchange (IIE) that is successfully connecting crucial information from a myriad of systems across partner providers.

A major milestone in health and care integration in Scotland:

- » The health board has led a collaboration with four regional local authorities to provide health and social care professionals with a real-time view of patient pathways across each of the five organisations.
- » Professionals in acute, community and social care settings now have the functionality to co-ordinate more effective interventions across organisational boundaries.
- » The system is simplifying and standardising referral processes, health request services from Social Care electronically, with the latest assessments being available and which services are put in place.
- » Information is not held centrally, but is drawn together in real-time from the various health and social care providers, at the time professionals in each organisation request it.
- » Significant amounts of time are being saved. Professionals in the NHS and across Lothian's four councils can now receive real-time information from each other's systems at the click of a button. Social care professionals can access appropriate data on their active clients directly

from the health board's system and other councils' systems, whilst NHS staff now have access to their patient's information from each of the councils we are currently integrated too. This means significant improvements to the working lives of regular users across acute, community and social care settings, who include nurses, physiotherapists, occupational therapists, re-enablement staff and social work hubs.

- » Robust data sharing agreements, based on patient consent, have been a fundamental and key achievement, addressing information governance and privacy requirements from all partner organisations.
- » The Interagency Information Exchange is now allowing a more cohesive and safer approach to care, with ready access to information making it far easier for staff to understand patients' requirements and to ensure visibility across organisations as to when care packages are put in place and delivered.

"The Interagency Information Exchange represents a major milestone in health and social care integration in Scotland," said Kelly Smith, eHealth senior project manager, who has led the development of the IIE at NHS Lothian. "The project has allowed significant gains for safer, timely and appropriate care, through more effective, less time-consuming communication of crucial information, including adult care packages, health episodes, diagnoses and interventions."



Coordinate My Care: Enabling Patient Choice for End of Life Care

Sharing patient's wishes with health and care providers across London through Coordinate My Care's personalised urgent care plan is helping to avoid people spending their final days in hospital.

More than 500,000 people die in England and Wales every year, and almost half die in hospital – despite the fact that less than 3% of people say that is where they want to spend their final days.

National statistics such as these highlight why the Coordinate My Care service is so important, beginning in London's Royal Marsden hospital as a way of recording an individual's end of life care wishes. Now, the service is sharing this information between the capital's multiple health and care providers especially when urgent care is required.

Based on InterSystems' health information sharing platform HealthShare®, Coordinate My Care has developed into an intuitive, personalised urgent care plan that is putting patient choice at the heart of healthcare. The project has now been recognised by the NHS Innovation Accelerator.

Results are impressive:

- » Coordinate My Care is in use in more than 900 GP practices across London; more than 31,000 plans have been created, up 10,000 in 2016 alone, thanks in part to its strong ability to share information across vital care providers, and its simple user interface.
- » For those Coordinate My Care patients who have sadly passed away, 80% died in their preferred place. One in five are dying in hospital, rather than almost 50% doing so at a national level. Families can be confident that their

loved one's wishes are known and should be respected, without having to repeat the same information at times of distress.

- » Medical staff are seeing a similar transformative impact. Paramedics have information available via mobile devices, enabling them to make crucial decisions that reflect the patient's choice.
- » Out of hours and 111 operators have access to a much more rounded view of the patient.
- » Coordinate My Care is, on average, saving the NHS £2,100 per patient, equating to an annual saving of over £16.8m in London alone. If implemented throughout England, projections for annual savings have been cited at close to £900m.

David Whitmore, senior clinical advisor at the London Ambulance Service says: "Coordinate My Care plans have radically changed the way patients are treated. Beforehand, we were not sure what the care plan was and may have taken people to hospital when it was not the best thing for the them. This system has changed that, so patients can receive the care they want."

By working together with clinicians and patients, InterSystems and Coordinate My Care are delivering and developing technology that will help provide the best in care at often the worst of times, because respecting a patient's wishes when it matters most is something that we should not get wrong.



SmartCare: Clinically Advanced EPR to Help Hospitals Enhance Care for Thousands

A regional collaboration between three NHS trusts marks a major step in paperless ambitions, the delivery of safer, better co-ordinated care, and projections to save millions of pounds

A collaborative procurement exercise has allowed three NHS trusts to deploy InterSystems TrakCare as their electronic patient record (EPR).

Yeovil Hospital NHS Foundation Trust, Gloucestershire Hospitals NHS Foundation Trust, and Northern Devon Healthcare NHS Trust, are all now using the system, in an effort to allow thousands of patients to receive safer and better co-ordinated care.

Yeovil became the first site to go live:

- » In a major step towards becoming paperless, Yeovil District Hospital became the first to go-live in 2016. Some £27.5m of benefits are expected at Yeovil Hospital alone, now that previously separate patient information systems have been replaced with TrakCare.
- » Phase one in Yeovil allowed crucial information to be migrated into TrakCare from the trust's aging patient administration system, and previously isolated systems across emergency, maternity, inpatient and outpatient departments.
- » Significant benefits were quickly realised including improved alerting and accurate electronic capturing of clinical outcomes, which is enabling more timely actions and confidence in planning. In addition, with the ability to now track real-time bed state information, specialists can search for patients with specific conditions and free up beds. Clinical teams can access the new system directly at the point of care, and remotely.
- » The second phase is expected to make Yeovil Hos-

pital one of the most digitally advanced NHS trusts in the UK. Enhanced clinical functionality, electronic notes, electronic prescribing and much more will be delivered.

- » Burdens on IT and management staff have also been reduced, so that they can better focus on the delivery of the best possible care.
- » TrakCare will also support national drives to personalise health, manage populations and integrate health and social care.

Jason Maclellan, chief information officer, Yeovil Hospital, said: "Better information is about more than efficiencies and savings. The big prize of bringing data into one place rests in the possibilities for real transformation. Our TrakCare go-live has laid the foundations for integration across the entire health economy. A single source of information will ultimately allow healthcare professionals to manage health across the entire population, spot gaps in care, and identify variation in cost and outcomes, so we can better connect with our patients and deliver services closer to their needs."

Similar benefits are in the process of spreading to clinical teams and patients in Gloucestershire and Northern Devon. Once fully live Gloucestershire expects TrakCare to improve patient safety, support clinicians in taking decisions on treatment, speed up the ordering and turnaround of tests, reduce medication errors, put an end to problems caused by missing notes and reduce or eliminate the use of paper. Northern Devon also anticipates the benefits of "a fully integrated health record". ■

South Devon: Integrated and Informed Care with HealthShare

Acute and community teams are working closer together than ever before, through the integration of IT systems across health and care settings in South Devon.

The NHS in Torbay and South Devon achieved NHS England vanguard status in January 2015 for developing joined-up services, with the aim of reducing health inequalities in areas of deprivation.

Making rapid progress, Torbay and South Devon NHS Foundation Trust (TSDFT) soon became an integrated care organisation, merging acute and community trusts and bringing together more than 6,000 staff members and dozens of IT systems.

To tackle care fragmentation across primary, acute and community locations, silo based information had to be unlocked. A region-wide clinical portal was created, with the help of InterSystems' HealthShare, to amalgamate all patient healthcare information from across health and social care services and systems, and deliver an integrated digital care record.

The project has allowed complex challenges to be addressed:

- » Creation of the South Devon Clinical Portal: bringing together South Devon's complex, multi-platform health

IT infrastructure into a single point of access.

- » Enabling a single sign-on capability to a system integrating a host of clinical platforms. With more than 100 systems by different providers, installed and implemented at different times, the challenge was vast.
- » Addressing and responding to a shared clinical vision and finding a solution popular on the ground.
- » Helping clinicians create more informed care in the hospital setting, and enabling information to be shared across the whole patient journey on discharge.
- » The clinical portal is growing into a comprehensive repository for essential data, enabling acute and community teams to work closer together than ever previously achieved.
- » From pilot to full implementation, HealthShare has helped to reduce duplication, improve communication, power collaboration and improve outcome for patients.

"We were looking for a flexible and scalable interoperability system that would enable us to support our health and social care integration strategy. HealthShare met all our requirements," Mike Green, chief clinical information officer Torbay and South Devon NHS Foundation Trust.

Global Digital Exemplar: Taunton and Somerset success signals a blueprint for NHS digitisation



Taunton and Somerset NHS Foundation Trust (TSFT) achieved a significant milestone when it deployed the UK's first open source electronic patient record (EPR) from IMS MAXIMS.

This pioneering move was part of the reason TSFT was named as a Global Digital Exemplar for the NHS (GDE) in 2016, with two further IMS MAXIMS customers since named as fast followers by Health Secretary Jeremy Hunt in September 2017.

TSFT is working with IMS MAXIMS as its GDE partner, and its two fast followers Wye Valley NHS Trust and Blackpool Teaching Hospitals NHS Foundation Trust, to pursue digital excellence in the NHS. This is about sharing best practice and fast-tracking plans to deliver better, safer patient care at the same time as helping staff achieve greater efficiencies, and enabling better organisational workflows.

THE CHALLENGE

As the largest acute hospital in Somerset, the trust and its 4,000 staff serve a population of more than 340,000 people. TSFT wanted to replace its legacy patient administration system implemented as part of the National Programme for IT and looked for new ways of delivering an EPR. It needed a system that would underpin its ambitions for transforming care delivery, reduce costs and provide greater control over software development.

THE SOLUTION

Involving its clinicians in assessing the options, TSFT decided to use the open source version of the IMS MAXIMS EPR; a flexible, cost effective option that provides more local control than a proprietary solution.

The trust also recognised future benefit to the NHS overall, being able to develop and share improvements with other NHS trusts, taking advantage of economies of scale.

NHS trusts can use 'MAXIMS' and access £45m worth of software development with no licence fees. The open source software has since been developed in close collaboration with clinicians over 30 years, resulting in a proven, safe and flexible clinical information sharing solution.

Eight million records were migrated into the new EPR with minimal disruption to service delivery.

NHS England has been highly supportive, endorsing the trust's approach. Richard Jefferson, then Head of Programme Commissioning at NHS England, said the project "represents a landmark moment in the use of open software in the NHS and validates the idea that open source can play a significant role alongside proprietary offerings".

Subsequent national recognition for TSFT as a GDE, and for Wye Valley NHS Trust and Blackpool Teaching Hospitals Foundation Trust as its two fast followers, has highlighted the work at TSFT as a blueprint for NHS digitisation.

THE BENEFITS

Greater clinical engagement

The partnership forged between IMS MAXIMS and TSFT has been key to success, resulting in unprecedented levels of clinical ownership and adoption. One early open day involved clinical staff demonstrating the new EPR to 500 other staff.

The TSFT EPR team, building the system alongside IMS MAXIMS, also explained to clinicians how they would co-create it, right down to drop-down menu configuration, to meet exact workflow needs of each clinical team. This has led to significant usability benefits.

Once 2,500 staff had been trained, the trust was able to use a full replica of the software on the intranet and work through different scenarios. All of these factors meant that nearly every member of staff had seen the software before it went live, resulting in faster and better adoption.

Safer, more effective patient care

Improving the patient experience was an important driver for the project. The trust has been able to make processes for admission, transfer and discharge of patients more efficient and coordinated with the help of real-time bed management and discharge planning.

Financial savings and paperless

The cost of moving to MAXIMS will pay for itself within three years. The EPR will also save the trust £600,000 a year by 2018 and has ensured TSFT is on course to achieve the

NHS paperless agenda which supports better care. GDE funding will accelerate the delivery of its technology road-map including paperless nursing, e-prescribing, clinical decision support, medicines management and integration with GP systems.

Moving paper-light

The first phase led to some new outpatients activity becoming electronic, such as real-time outcoming of patients instead of completing forms. Clinicians are triaging letters online rather than printing and also making decisions online for referrals.

Providing a real-time electronic document management solution and real-time back-up means correspondence no longer needs to be filed in paper case notes. Printing of correspondence has reduced from 30,000 episodes a month to 2,000.

Primary Care Viewer

Providing access to the primary care record for 95% of the population of Somerset is leading to avoided admissions, more informed drug interactions and reduced administration time for junior doctors.

County-wide sharing

Real-time sharing of patient alerts, starting with the learning disabilities service, will enhance patient experience and ensure the best possible care is provided.

Benefits in progress

Quicker identification of deteriorating patients (with the added use of mobile apps) – through electronic observations, identifying and escalating deteriorating patients to the appropriate care teams faster.

Paper-light Inpatients – working on a suite of mobile apps that will connect to the back-end database using APIs.

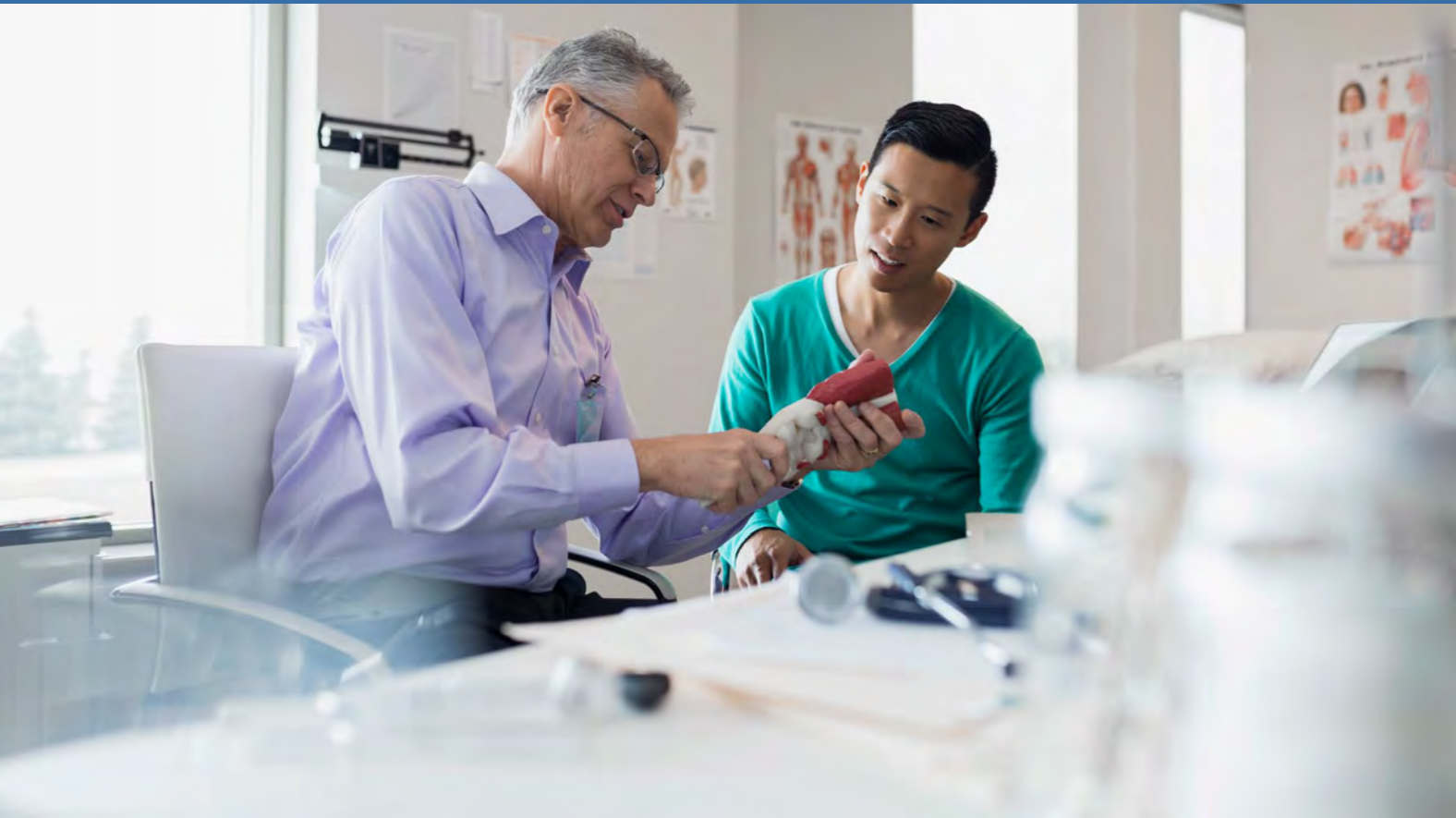
Scalable benefits to the NHS – As the community of MAXIMS users grows, software will advance more rapidly as benefits are shared between the open source community. As a GDE site, TSFT will also be working with IMS MAXIMS to develop a blueprint that can be easily replicated and implemented by other trusts across the NHS. ■

Quote from the Trust

Andrew Forrest, Chief Information Officer:

"IMS MAXIMS is working with the clinicians in the Trust to develop and implement mobile clinical systems that support better patient care, clinical safety and helps efficient working. Using 'Open standards' in the applications means that clinicians will be able to use the IMS MAXIMS electronic patient record and link seamlessly to departmental systems for the information they need."

DynamicHealth Maximises Front-line Services with Speech Recognition from Nuance



SYNOPSIS

Delivering NHS physiotherapy and specialist services across Cambridgeshire and Peterborough, DynamicHealth was facing challenges of a growth in demand and dependence on back-office support. To maximise front-line services and reduce the administrative backlog, DynamicHealth invested in Nuance Dragon Media Practice Edition to provide front-end speech recognition, which resulted in improved services; a better work life balance for the team; and patients feeling more involved in their care.

INTRODUCTION

DynamicHealth provides NHS physiotherapy and specialist services in addition to occupational health physiotherapy and pelvic health physiotherapy to people with musculoskeletal (MSK) problems across Cambridgeshire and Peterborough.

The services are delivered by eighteen Specialist Physiotherapists and one Specialist Podiatrist, with support from administrators working virtually and on site to process referrals, book appointments and manage patient pathways.

A Specialist will see between eight and twelve patients per day. Spinal patients are allocated forty-five minutes and peripheral limb patients thirty minutes. Previously, following the consultation, each patient assessment was typed by a Physiotherapist into the electronic patient record (EPR) and the GP or patient letter was created by an administrator from the Physiotherapist's analogue dictation. The turnaround time of a letter was between six to twelve weeks. The letters would often need additions or amendments, so the Physiotherapist would regularly need to review notes to remind themselves of the case.

To accommodate the growth in demand for services, and reduce the dependence upon back-office support, Sarah Saul, Service Manager, DynamicHealth chose to invest in solutions and partnerships with technology providers that would maximise front-line services, and release administration backlogs and workload.

SPECIALISED MEDICAL SPEECH RECOGNITION

Sarah chose Nuance Dragon Medical Practice Edition front-end speech recognition, integrated into the clinical documentation workflow. The team had some previous experi-

ence of using a non-medical version of Dragon, but were frustrated with the poor accuracy in recognising medical terminology and the inability to integrate it into the workflow or the EPR.

Incorporating over 60 medical specialty vocabularies and, most importantly for this team, a musculoskeletal vocabulary, Dragon Medical Practice Edition has provided an effective solution. This boosted speed and accuracy in capturing the patient story into treatment plans and other clinical documentation.

During or between patient appointments the Physiotherapists use the technology to directly update the EPR using voice macros to speed navigation between fields and populate regularly used blocks of standard text.

For clinic letters, a voice command is used to call up the template for the clinic letter with pre-created 'Clinical Impression' and 'Management Plan' fields followed by an area for free text. Letter creation, proof reading and finalising now takes five to ten minutes for a new patient and less time for a follow up appointment.

The solution was delivered and implemented by Nuance Healthcare Connections Partner, GHG TalkingPoint. First piloted at one site, GHG TalkingPoint liaised closely with Specialists and administrators, taking care to incorporate their feedback to ensure a streamlined workflow. A trusted partner, the team is still very much involved with the DynamicHealth team, providing day-to-day support and continuing to identify opportunities for workflow improvement.

DELIVERING ROI

The goal for the length of time on the MSK pathway is eighteen weeks and the whole team has experienced improvements to this timescale as a result of the reduced report

and letter backlogs, faster referrals to secondary care, and time freed up for patient facing activities.

Dragon Medical has improved the accuracy, completeness and quality of notes. Physiotherapist Chris Sadie reported that due to the improved accuracy, he no longer has to try and remember or look up the patient clinical details when reviewing a letter – often weeks later – saving his time and improving patient safety.

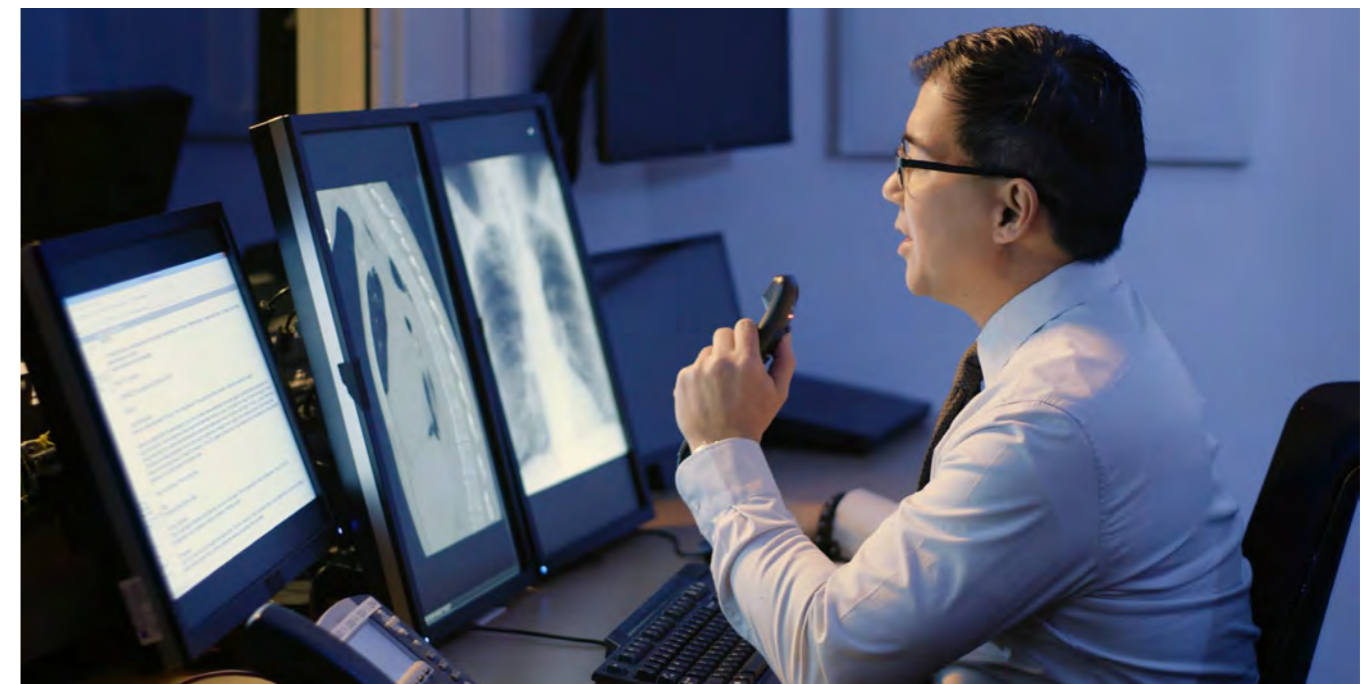
Now that the medical notes are held within the EPR, some members that are very slow at typing and another with dyslexia indicated that the opportunity to use speech-recognition instead of typing has been very useful and relieved a lot of stress from their working day.

Chris also indicated that, when a patient gives permission, he is comfortable dictating notes in front of them. "By dictating my thoughts into the patient record with my patient present I give them the opportunity to correct me if I haven't understood or have misinterpreted what they have said. This ensures a more accurate record of the consultation and improves the communication and understanding between us" he said.

Administrative time has also been freed up to allow more patient contact, and increase the throughput of patients and reduce waiting times.

Letter turnaround has been reduced from weeks to days, letting patients know what to expect in the future with their condition, which helps them feel involved in their own care. One patient even contacted the department to say it was the fastest she had ever received a letter from a hospital.

For more information on Nuance Healthcare's Dragon Medical speech recognition solution, please visit <http://engage.nuance.co.uk/digital-technology-transforms-healthcare-future-nhs> ■



Electronic Observations at Central Manchester: The Nursing View



Hospitals throughout central Manchester are delivering numerous patient safety benefits as a result of nurse-led technology-enabled care using Patienttrack. Lead nurses from Central Manchester University Hospitals NHS Foundation Trust reveal how the trust took forward pioneering electronic observations work.

Challenge: Improving care for deteriorating patients

Central Manchester University Hospitals NHS Foundation Trust (CMFT) is passionate about patient safety, and it knew that providing better care for the deteriorating patient was central to enhancing care.

The trust recognised that staff sometimes lacked confidence in dealing with sick patients, and that difficulties were being encountered in passing information to senior colleagues when patients were in urgent need of escalation.

Sarah Ingleby, lead nurse for the Acute Care Team and hospital at night, said: "We have worked closely with Patienttrack to support our clinical processes using technology. This did not come without its challenges. However, by working together with the company and our dedicated staff, we have developed the system to ensure that we can meet all their needs and ensure safer patient care."

CMFT is a teaching trust, with new staff coming through on a regular basis. This means that new members of the team

need to get up to speed quickly on applying the protocols used to care for the sickest patients. The trust implemented early warning scores in 2000 to identify deteriorating patients in many areas, however there were occasions when the policy did not achieve 100% compliance and the supporting technology has gone a significant way to improve this.

The organisation also wanted to take an approach that could work across all of its hospitals, which meant that information needed to be available to healthcare professionals across the patient pathway.

Solution: E-observations technology

CMFT became an early adopter of electronic observations with Patienttrack in 2009, and worked with Patienttrack and the trust's informatics team to apply 'track and trigger' technology across all its wards.

"We combined the technology with acute care education to engage all staff, encouraging colleagues to follow established protocols," said matron Richard Cox from the Acute Care Team. "We also worked with informatics staff to show

KEY OUTCOMES

- » Patienttrack flags patients at risk of deteriorating, and automatically alerts medical staff
- » With significant acute care initiatives, the trust has seen a 50% reduction in cardiac arrests, reduced risk of mortality for out of hours' admissions, and reduced critical care length of stay.
- » Patients benefit from improved observations accuracy, early warning scores' response rates and faster clinical attendance

the difference they can make at the frontline of patient care, through patient stories that illustrate how technology can make a real difference to individual patients."

Ingleby added: "By working closely with clinical and informatics staff, and with the help of the Patienttrack team, we have subsequently designed assessments and have configured the system to meet local needs and priorities. This, together with a concerted effort to promote the benefits of the technology, has helped us fully embed the system throughout all in-patient areas in 55 wards in adult and children's hospitals across Manchester, as was highlighted in our latest CQC report.

"For the more recent development of the assessments, we have worked closely with ward staff and our specialist teams. We have held meetings and workshops to understand the needs of the clinicians and patients and understand how they might want to adapt the system to meet their individual requirements. This has helped encourage them to get on board with using technology as part of care."

Informatics staff also carried out integration work to ensure that the patient observation process continued seamlessly across CMFT sites, and a single attendance and patient record is maintained in Patienttrack. This benefits the patient, as all their sets of observations are maintained for the duration of their care with the trust.

Results: Halved cardiac arrests, reduced critical care length of stay

"Our approach has delivered clinical benefits such as more rapid clinical attendance for patients most in need, which has helped alongside other acute care

initiatives to achieve a 50% reduction in cardiac arrests. We have improved the accuracy of observations, reduced the risk of mortality for out of hours' admissions, and reduced critical care length of stay," said Cox.

"We have already seen dramatic improvements in VTE re-assessment; from 41% to 90% compliance in three weeks of the implementation of the assessment, along with the support of the medical teams. Infection control and diabetes and acute kidney injury specialist nurses are excited that they will soon be reaping the benefits as well, as they have technology that is helping them to do their jobs."

Ingleby added: "Six months ago we reviewed our mortality over the seven-day week. There is no difference between weekdays and weekends, and we believe that this is due to Patienttrack. We have systems working 24/7 to pull nurses and doctors to patients' bedsides when needed.

"The development and trial of the Patienttrack system has been an exciting, interesting and sometimes challenging experience - in particular changing the culture and ways of working within our organisation."

Concerns over alert fatigue have not come to fruition, particularly where in areas of the trust Early Warning Scores were embedded. Data is also being collected from several thousands of observations every day, which helps CMFT see how different wards are responding to patient needs, and identify how it may improve. There's a real sense of healthy competition between wards in making sure that patients get the best care possible.

"We are continually feeding in our ideas into how Patienttrack can develop the system, helping to ensure that it adapts to our changing clinical needs. The software, and the approach to care it helps deliver, are becoming much more integrated with our clinical systems and practice. We can now see nurses of all technical abilities use technology to realise benefits for their patients. It is something that I am proud to be working on, as it makes such a huge difference to the care we can deliver to our patients," ended Cox. ■



Workforce Planning and Security Challenges: Time for Trusts to Take Control

NHS Improvement and Health Education England has issued technical guidance to encourage healthcare providers to go further in using workforce data to better measure performance and inform planning through to 2018/19.

Scott Baker, Chief Operating Officer at Hicom, explains how stopping the use of spreadsheets and a transition from traditional data management to a more collaborative, centralised approach will help trusts revolutionise operations, empower decision-making and address the increasing data security challenges.

Over reliance on spreadsheets

In order to create a sustainable NHS, effective workforce planning is vital. With the growing challenge of managing increasing demand with dwindling resources, providers know that their workforce plans must ensure that the delivery of patient services is consistently high whilst accommodating the long-term requirements of the NHS of tomorrow. The key to success is developing an efficient, trained and productive workforce

One area of opportunity is in how the NHS manages its workforce by analysing data.

The technical guidance released by NHS Improvement and Health Education England described how trusts can use this data to measure performance against workforce KPIs including absence, staff turnover and appraisals, to new recruits, agency staffing and mandatory training completion rates. With secure access to real-time information, it's clear to see that trusts are in a much better position to plan resource to meet demand, respond to fluctuating staffing levels and ensure training enables continuity of services.

This is not today's reality.

At present, there is an overwhelming reliance on spreadsheets for key workforce planning activities; employee records, staff levels, training & study leave, and safe staff rotations. Similarly, sensitive and confidential information regarding decisions around recruitment – pre-employment checks, certificates, career history, disciplinary records and basic personal details – is commonly stored on spreadsheets and accessed across shared networks. This method of storing and sharing data is inherently unsafe and puts trusts at risk of data breach at a time of ever-heightened cyber-security threat levels. Furthermore, a spreadsheet-led approach



limits the ability for joined-up decision-making, informed by real-time analytics.

The flaws in relying on spreadsheets are well-documented. Research shows that almost 9 out of 10 spreadsheets (88%) contain errors. Human errors in data input, formatting and calculations can often be the cause – but they regularly stem from spreadsheet behaviour; multiple versions, poor version control, uncontrolled accessibility and free-for-all editing permissions. It doesn't take long before spreadsheets can become unwieldy, outdated and inaccurate documents – and still numerous organisations rely on them as the basis for decision making.

The security risk

The spreadsheet's partner in crime is email. Vast amounts of spreadsheets are frequently shared across (and outside of) NHS Trusts via email – this only reinforces the issue of questionable data integrity and potential security breaches. It is a general misconception that email communication across the NHS is secure simply because it's done over the N3 network. Instead, every email that's accessed outside of the network – either via an external partner or an NHS employee working remotely – is unencrypted and therefore vulnerable.

There is no doubt that providers have worked hard to be compliant with Information Governance (IG) requirements to keep patient data secure. However, the same cannot be said for workforce data processes – leaving themselves vulnerable to breaches of the new EU General Data Protection Regulation (GDPR). It's a risky approach. In the past year,

there have been numerous examples of trusts exposing the sensitive information of NHS staff. Last month an investigation was launched after the personal details of over 500 GP trainees in Merseyside were published online. In May 2016, a Lancashire Trust was fined £185,000 for a similar breach. With the new GDPR coming into force from May 2018, it's expected that ICO penalties will increase in both volume and size. Trusts can ill afford the financial and reputational costs. Therefore, in order to gain greater control of their data, providers should consider strengthening their information management capabilities.

If the threat of an ICO fine represents the 'stick', motivating trusts to act, the value of maintaining accurate and accessible data (the 'carrot') goes beyond compliance. It can be the key to enhanced workforce planning and fuel better, more sustainable patient services. But how?

Integrated and centralised solutions

The solution to utilising information to provide enhanced workforce planning is straightforward. Powerful technology that is simple to use can be utilised to integrate all aspects of workforce information into trust-specific, centralised data repositories that support the full life-cycle of planning; recruitment, training, deployment and management. The centralised approach, underpinned by robust access control, removes the issue of data sets that are incon-

sistent, offering trusts more control over their data.

At a more granular level, centralised data warehousing allows trusts to take a bespoke, modular approach to business processes – powering solutions that support the challenges most relevant to their organisation. For example, pre-employment checks can be safely conducted by medical education and HR managers, with full visibility of all appropriate documentation. Similarly, managing and measuring mandatory training is less onerous, simplified by access to reliable data that underpins the training and development cycle; from registration and induction through to course management, delivery and certification.

Workforce teams can secure greater visibility of study leave by using technology. Often, study leave is agreed through direct communication between managers and their staff rather than recorded on accessible systems. Centralised management of this aspect alone can make a huge difference to workforce planning and help avoid substantial implications for staffing levels and services. Additionally, it can enhance a trust's ability to log, manage and report KPI data, as well as providing audit capabilities to evidence workforce activity.

The pressure on workforce planning can only intensify as the NHS gears up for some substantial challenges. Survival by spreadsheet is not an option. It's time for trusts to take control. ■

West of Scotland Creates Regional Portal

Scottish health boards covering a population of 2.2 million people are able to share patient information now that a two-year project to create a regional portal has been completed.

Five West of Scotland health boards are covered by the project to link their Orion Health portals, with NHS Dumfries and Galloway the latest to join.

Clinicians can now click on a simple link within their own health board's portal to access the regional portal links, from where they can view test results and other information.

Nick Reed, a consultant in clinical oncology at the Beatson Oncology Centre in Glasgow, says this had already led to "huge improvements in communications and time savings."

"You have the ability to access results, forms and correspondence in a speedy manner, which allows you to make decisions in clinics very quickly," he says.

Working on a common goal

Scotland has had an eHealth strategy in place since 2011. As part of this strategy the West of Scotland deployed a clinical portal, with all boards converging on technology from Orion Health.

With the portals in place, a review of information sharing across the region took place in 2015. This established that around one in ten episodes of care (ranging from A&E attendances to elective care) involved patients who were being treated outside their home health board.

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Finding information about these patients was a major challenge for clinicians. So, a West of Scotland Regional Information Sharing Board was established to change things, with an implementation lead at each board.

Information governance and other key documentation was created once and then agreed by each of the health boards. A minimum data set was agreed that included demographics, GP details, lab results, encounter history and clinical documentation.

After that, health boards could decide for themselves what information they were able to share from their portals, which are at different stages of development.

William Edwards, director of eHealth and HI&T at NHS Greater Glasgow and Clyde, says getting the governance right was vital. "You need to be clear about what problem you want to solve and then make sure that the governance is in place to solve it," he says. "Without that, you will not get anywhere."

A series of successful go-lives

With these components of the project in place, a pilot link between the Greater Glasgow and Clyde portal and the NHS Lanarkshire portal was established in May 2016.

In September 2017, this link was made available to all clinical users at the two sites, after which a further link was established with the portal used by the Golden Jubilee National Hospital in Clydebank.

Close collaboration between the implementation leads across the boards then enabled two further go-lives in 2017, as first NHS Ayrshire and Arran and then NHS Dumfries and Galloway were linked in with the Greater Glasgow and Clyde and Golden Jubilee hubs.

Programme manager David Dougan says the project set out to make it easy for clinicians to find the information they wanted, while also addressing security and confidentiality issues.

"We have taken a simple approach," he says. "So, for example, if a Greater Glasgow and Clyde clinician has a patient in front of them, there is an optional tab within the Greater Glasgow and Clyde portal called 'Regional Portals'."

"If they click that, they are presented with an overview page, on which there are links to all the other health board portals they can access. If they select one of those links, it opens the portal and passes over the CHI Number (the Scottish national patient identifier) to search for a match."

"If there is a match, then the clinician can see the further information that is available for that patient. In the background, it also sends over the user's details, so there is an audit log of use."

A huge step forward for clinicians

Consultant oncologist Nick Reed says the successful project has been "a huge step forward." "As a cancer specialist, I work within a regional service, and between 55 and 60% of our patients do not reside within the Greater Glasgow and Clyde catchment area," he says.

"They come from surrounding health boards and, occasionally, if they have a very rare cancer, from other parts of Scotland. We could find some information for them by going into the SCI Stores (national information repositories) for the individual health boards."

"But the big advantages of the regional portal are that you don't have to manage so many passwords and you can find additional information, such as clinical correspondence. It really is very useful."

"If I am seeing a new patient, or a follow-up patient who has had investigations done, or a patient on chemotherapy, then I want to see their test results, and their scan results, and their treatment log. Now, I can do that without going in and out of the SCI stores, which is a huge benefit."

Research done ahead of the project underlines this point. It found that doctors could spend 70 minutes per day looking for information about patients; and the value of that time was almost £20,000 a year.

The same research found that if doctors couldn't find the information they wanted, a third would work without it and a sixth would order additional investigations and tests; which also cost money, and could delay care.

Further plans

The regional portal is being well-used; already, clinicians are accessing 3-4,000 cross board records every week, and there have been more than 50,000 log-ons so far this year. However, it could be extended further.

David Dougan and William Edwards say some work has already been done to see if a link could be established with the NHS Forth Valley portal; and more information could be included as health boards strive to support health and social care integration also.

Nick Reed is all in favour. "If it can be extended, which I hope it can, to Lothian and Tayside and Grampian, then we will have achieved something that I doubt the English system will ever achieve, and that is a joined-up radiology system, with national PACS, and joined-up clinical portals."

"If that happens, it will mean care for patients will be very much improved." In the meantime, he says, he'd give the regional portal "eight or nine out of ten, with the potential to get to 9.9 out of ten" when it is fully bedded-in. ■

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