Edition 1 2018

Progress
innovation through partnership

in this edition

Supporting you on your digital transformation journey

A warm welcome to Edition 1 2018 of *Progress*.

As always, we bring a mix of stories from NHSScotland and further afield looking at how Health Boards and other healthcare organisations are using digital technologies to optimise resources, support new models of care and enhance patient outcomes and experiences.

In our work with customers, it's clear that ongoing innovation and digital transformation are key to meeting ever-widening medical challenges and ever-growing demand. While, of course, technology is now a critical enabler, it is only one part of the picture. Collaboration between stakeholders is vital and people – patients, clinicians, carers and families – must be at the centre of any sustainable change.

Delivering transformational change in high-pressure clinical settings is always challenging – especially with other competing demands. New thinking and new ways of working together to do things differently are increasingly critical. The challenge is to optimise and maintain core services while delivering transformation through a roadmap of digital innovation. Atos is committed to working in collaboration with our customers and partners within NHSScotland to help re-think service design and delivery. Our goal is to accelerate innovation for the benefit of patients and healthcare professionals and ultimately to use technology to advance healthcare for all.

I hope you find the articles in *Progress* of interest. If there's something you'd like to see covered or if you have feedback on any of the articles we publish, I'd love to hear from you.

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A millennial's view: the future of healthcare

While expectations around digital access to healthcare are often in areas such as 24x7 care and online appointment scheduling, we thought we'd ask a millennial what they are expecting from healthcare services in the future.

"My wearables have been measuring my sleep, temperature, heart-rate as well as my eating habits and exercise performance. Through comparing this data against the now freely available NHS database and my past performance, it has noticed a downward trend and a slight temperature increase. When I wake up in the morning, my phone suggests that I could be coming down with an illness and so it opens my NHS dashboard app and asks me some questions on other symptoms: are you suffering from a headache? Are you finding it difficult to concentrate? From this, my phone can now say with a reasonable amount of certainty I am going to be ill. In fact, some of the answers I have given suggest it could more serious than just the flu.

My phone automatically books me in with a specialist in the particular illness it believes I have, sends my health information, which has been tracked over a number of weeks, and my responses to the earlier questions so that the doctor is as informed as possible. It then gives its own intermediate recommendation of paracetamol and rest. A few minutes later, my phone rings on video call and I answer to the specialist who already knows all my details, history and current stats.

The specialist is able to make a very quick diagnostic and signs off on the prescription, I then authenticate this via fingerprint identification on my phone and it will arrive by drone to my drop box within a few hours.

I am not yet feeling many symptoms, but I have the correct treatment to pre-empt my illness. I haven't yet had a call from my manager to ask where I am as my phone has already blocked out my diary and informed my work, which is now verified with a digital doctor's note. I haven't needed to fill a GP waiting room, I haven't let a minor illness become chronic and more costly to fix, I haven't even thought about A&E."

By Isaac Swanton, Business Consultant, Atos UK&I

Digital shockwaves in healthcare

Digital technologies can enable health and social care organisations to integrate service delivery around the needs of individuals, break down organisational silos and support collaboration between hospitals, providers, partner agencies, pharmacies and life science organisations. At the same time, a shift in empowerment is underway from providers to patients, supported and informed by data. Smartphones and wearables enable people to monitor their own health, and when you add in the ability to access your own medical records and easily share information with those you trust, the possibilities multiply and you are even better protected from a medical point of view.

Creating these kinds of personalised healthcare ecosystems will require interoperability between multiple IT systems and this must now be a priority. This is where digital partners can make a vital contribution, with public and private sector organisations working together to achieve the seamless exchange of all types of health data between different IT across multiple healthcare settings.

Cloud services are a vital enabler, and healthcare organisations and IT decision-makers need targeted health data services at the core of their health cloud platforms. Paired with big health data and the power of artificial intelligence and cognitive computing, a purpose-built health cloud offers a place to be truly innovative. Further, to truly transform care, enterprise health cloud solutions must support the whole health value chain. This will free up health professionals to spend more time with patients; it will enable life science companies to accelerate collaborative models from initial research to enabling better patient care; it will help providers to gain insight into population health and patient empowerment; and it will give medical researchers the information they need to unlock insights, spur innovation and drive targeted action with stakeholders across the health ecosystem.

By Ruud van der Loo, Vice-President Global Healthcare, Atos

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Beating bowel cancer with a new test

As was reported in the news back in November 2017, almost a million Scottish citizens will benefit from a new and easier screening test to detect symptoms of bowel cancer. The new Faecal Immunochemical Test (FIT) requires participants to collect only one bowel motion sample rather than samples over three days, which was the previous requirement.

Research suggests that FIT's ease of use will encourage more people to participate in the programme, with the test being offered to everyone in Scotland, aged 50 to 74, every two years. Over 90% of bowel cancer cases can be treated successfully if diagnosed early and because the new test is more sensitive and accurate, it will enable cancer detection at an earlier stage, it will help more people to beat bowel cancer than ever before.

Image: © Cancer Research UK 2017

The NHSScotland bowel screening programme and Bowel Screening System (BoSS) were among the first to be introduced into the UK in 2007. The BoSS, developed by Atos and still used today, manages everything from selecting patients to be screened, to distributing testing kits and recording results and referrals.

Jess Brand, Senior Programme Manager, Bowel Screening Programme, NHS National Services Scotland said: "We are grateful to the Atos team for their commitment and hard work in rolling out sweeping changes to the Bowel Screening System in preparation for the transition to the new bowel screening test, which was successfully launched in November 2017 as planned".

Atos also provides support and development for most of the national NHSScotland screening systems, including breast screening, cervical screening and abdominal aortic aneurysm screening.

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Improving patient care and freeing up clinicians' time in hospital

I have spent a lot of my career in hospitals around the world talking to nurses and doctors about what works for them and what doesn't. As anyone working in healthcare will know, one of the most common frustrations is the amount of paperwork needed to communicate simple care needs and routines with all the health professionals who look after a single patient. Only around a third of a nurse's time is spent on direct patient care. The rest is taken up with reporting and recording the care they deliver. Not only this, often there is no easy place to record this critical data.

Digital communication and collaboration terminals at the patient's bedside are a simple solution. As well as recording patient information, they enable patients to order food and drink, get entertainment channels, communicate with family, and get information on their treatment and aftercare.

Communication and collaboration terminals bring multiple benefits. Firstly, there are the obvious cost and job satisfaction advantages of freeing up health professionals' time. Patients' experiences are also improved because they have more control and a fuller understanding of their care. And there are more surprising benefits, such as cutting food waste because patients can make their own food and drink choices ahead of time.

Communication and collaboration via this kind of device is efficient and can be life-saving. While there is a requirement for an initial investment, they bring vast improvements for health professionals, hospitals and, most importantly, patient care.

By Rene Hochstenbach, Senior Vice President, Global Healthcare, Unify

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Improving patient experience by producing clinical outcome letters more efficiently

University College London Hospital NHS Foundation Trust (UCLH) produces around 1.06 million clinical outcome letters every year. Until now, different departments have produced these letters in different ways using a mix of analogue and digital dictation, in-house and outsourced transcription and various providers. As a result, there were inevitable inconsistencies and inefficiencies, with little scope for improvement, making it difficult for many departments to meet the Trust target of a five-day turnaround.

In response, and with support from Atos, UCLH introduced a Trust-wide solution called Dictate IT to support the whole process of producing a letter from initial dictation to finalised document ready to be sent to the patient. Dictate IT comprises digital dictation and speech recognition features together with an outsourced transcription service.

Dictate IT was launched in March with a phased roll-out due to finish by the end of June, making UCLH the first Trust to use the solution. Benefits include higher cost-efficiency, better quality and faster turnaround times for clinical letters to patients, general practitioners, general dental practitioners and other referrers. There is now less scope for error, improving patient care, and a clear audit trail for management and partners. The new solution is easier for clinicians to use and feedback so far from users has been extremely positive.

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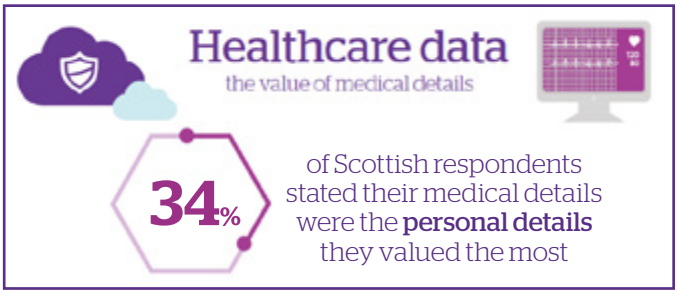
New research for improving cyber security

As cyber crime rises and public services are increasingly digitalised, the UK public's outlook on cyber security is changing. People are becoming more careful about how they share their information and wary of organisations who might fail to protect it. Cyber trust, it seems, is a valuable currency in the 21st century. To find out more, Atos commissioned a survey of over 3,000 UK citizens looking at their attitudes to cyber crime, what they expect when it comes to keeping their data safe, and what technology they'd like to see more of.

One key finding is that in the wake of recent cyber attacks, awareness of the cyber threat is growing. 84% of Scottish citizens say that they have been affected in some way by a cyber attack, the majority of which were phishing attacks. 44% of Scottish respondents say that the chances of organisations suffering a cyber attack have increased over the last 12 months and 35.5% say that they do not trust organisations to store their data. With 34% of Scots feeling that their medical details are the personal details they value the most, the challenge for healthcare organisations (which is explored in the research report) is how to keep citizens and their data secure, as well as making them feel secure in order to retain their trust.



To download a copy of The currency of trust: your customers' attitudes to cyber security, visit atos.net/cyber-research-uk

This research complements Atos' Digital Vision for Cyber Security, which combines contributions from subject matter experts both within Atos and from other leading organisations to examine the fast-evolving threat landscape and what steps businesses must take to ensure they're protected.

To download a copy of Digital Vision for Cyber Security, visit atos.net/digital-vision-cyber-security

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Fighting viral diseases using supercomputing

Given the ever-changing nature of viral disease threats emerging from globalisation, environmental change and expanding human and animal populations, when a deadly virus emerges, scientists must respond rapidly to track and stop its spread. The Pirbright Institute is a unique national centre that enhances the UK's capability to control, contain and eliminate viral diseases of animals through highly innovative bioscience.

High performance computing and big data technologies are required to enable the Institute to process and analyse huge amounts of data. To further advance its research, Pirbright has chosen a Bull supercomputer from Atos that can run diverse workloads on a unified environment to increase performance and throughput, avoiding the time and expense of moving vast amounts of data among multiple systems. Researchers get rapid results, gaining insights to aid the development of diagnostic tools, vaccines and treatments. This helps scientists and policy-makers to reduce the impact of viral disease, ensure food security and improve the quality of life for animals and humans.

Paolo Ribeca, Head of Integrative Biology and Bioinformatics at Pirbright, said: "Purchasing a supercomputer is not like going to a supermarket and picking something off a shelf. It required a lot of design and discussion to define the system we wanted. Using our supercomputing platform, we can assemble genomes, study the interaction between virus and host, understand how viruses evolve and model how they spread between individuals and farms".

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GDPR: privacy by design and default

...So what does this mean in practice?

One of the pivotal changes to be brought in through the General Data Protection Regulation (GDPR) is that of 'Privacy by Design' along with 'Privacy by Default'. In essence, organisations will now be obliged to take into account data privacy during design stages of all projects along with the lifecycle of the relevant data process.

For me personally, as a privacy specialist, this is a great concept. So many times in the past has a system been developed either in-house or nationally, where the final sign-off lies with me – only for me to go back to the developers and say "you can't do that with personal information!". 'Grim Reaper to projects' was almost a term of endearment.

With 'Privacy by Design and Default', my Grim Reaper position vanishes! I am asked to help undertake a Privacy Impact Assessment with the development team right at the start of the project/system design.

This implementation does not necessarily mean that an organisation must spend a large proportion of its project budget on this design, but to take more of a risk-based approach, taking into account the nature, purposes, context, scope of the processing and the implications. This seems to be the preferred attitude of organisations due to the flexibility it affords, but it is yet to be tested, so caution should be advised here.

When deciding this, organisations should take into consideration a wide range of factors regarding the processing of personal data, including the ease of collection, how the data can be suppressed (for example, if a customer chooses to not receive direct marketing) or how portable the data is under GDPR.

Alongside the 'Privacy by Design' issue sits the 'Privacy by Default' obligation. Under this obligation, data controllers must implement appropriate measures both on a technical and organisation level to ensure that personal data collected is only used for the specific purpose mentioned. This means that the minimum required amount of personal data should be collected, which minimises processing and controls storage and accessibility.

So to summarise, the concept of Privacy by Design shouldn't be too much of an issue for organisations who already possess a strong privacy policy and take data breaches into account when building new systems. However, GDPR now makes this design approach mandatory rather than advisory. Being prepared is highly important, and from 25 May 2018 I can take my cloak off and put down my scythe.

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Data ethics and machine learning

As machine learning for medical research and healthcare takes hold, the ethics of data sharing and handling need to be explored by clinicians, citizens, commercial companies and law-makers.

Many clinicians say that, while data laws are complex, it is their duty to find ways of mining patient data for the benefit of patients and to advance research and treatments. We need to use the power of vast data combined with machine learning to advance healthcare for the benefit of all and continue to position UK plc at the centre of academic research. Yet the legal frameworks and precedents for using patient data are complex and could hamper medical progress.

Much of medicine's most pioneering work is done in partnership with private sector companies who have the scale and resources that are needed. In today's world, this involves close interactions between clinicians, hardware and software, and data: all are necessary to make progress. The field of machine learning itself has a culture of openness and free exchange, with open source software and sharing of learning. There is an ethos around the public collection of data and a move towards more transparency and open government that will in turn lead to better services and economic advance.

Legal framework

When it comes to patient data, the picture is more complicated. Most citizens are happy to have their anonymised data used for the purposes of research. However, research has found evidence of much lower levels of support for data to be shared with private companies. Yet with the private sector being critical to research, this creates an issue. Making data available to all companies is one answer, but there are risks. Firstly, making the data available to all destroys its commercial value; secondly, there may be problems with anonymising data completely (even if you remove identifiers, data may be identifiable with enough effort). In general, people depend on the ethics of researchers and the strong likelihood that they are not at all interested in individuals. But perhaps a legal framework needs to be in place – not just for anonymity but for gaining consent.

These issues are critical to resolve because the collective good will not be served if pioneers are not given access to valuable data. Like so many of the social and ethical challenges of new technologies, these questions need the attention of government and society. Ultimately, this is about individual citizens knowing that their data will be protected and used for real benefit. Public engagement is now key so that citizens understand what is at stake and can be involved in making the decisions.

By Dr Paul Taylor, Reader in Health Informatics, University College London

Read more at atos.net/digital-vision-health

Providing digital media for Glasgow 2018

On 2-12 August 2018, the biggest sporting event in Scotland since the 2014 Commonwealth Games will come to Glasgow. As part of the first-ever Glasgow 2018 European Championships, 3,000 athletes will compete across six events: Aquatics, Cycling, Golf, Gymnastics, Rowing and Triathlon, while a further 1,500 athletes will compete in Berlin as part of the European Athletics Championships.

Already the official Timing, Scoring and Results Provider and proud supporter of the Glasgow 2018 European Championships, Atos will also help deliver a robust digital presence for the event as Digital Media and Central Results Services Provider. Atos will work in partnership with Edinburgh-based agency Signal to design and develop the websites for the Glasgow 2018 European Championships, as well as an app which will be available to fans from summer 2018.

Atos will be responsible for processing and distributing live results for all sports across Glasgow and Berlin and for delivering live schedule and results pages to help sports fans and attendees access up-to-date information on the Championships. Attendances of up to 250,000 are expected at venues across Glasgow and Scotland, with a potential TV audience of up to 1.03 billion.

Glasgow 2018 European Championships Director Colin Hartley, said: "Atos has an established track record in delivering digital services to large-scale multi-sport events. The integrated online platforms they produce will allow people to keep up to date with the latest action and engage with the Championships, ensuring we deliver a must-attend, must-watch event".

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Picture: Glasgow 2018 Mascot Bonnie and athlete Cameron Main

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