

CIO perspectives on digital healthcare

United Kingdom & Ireland

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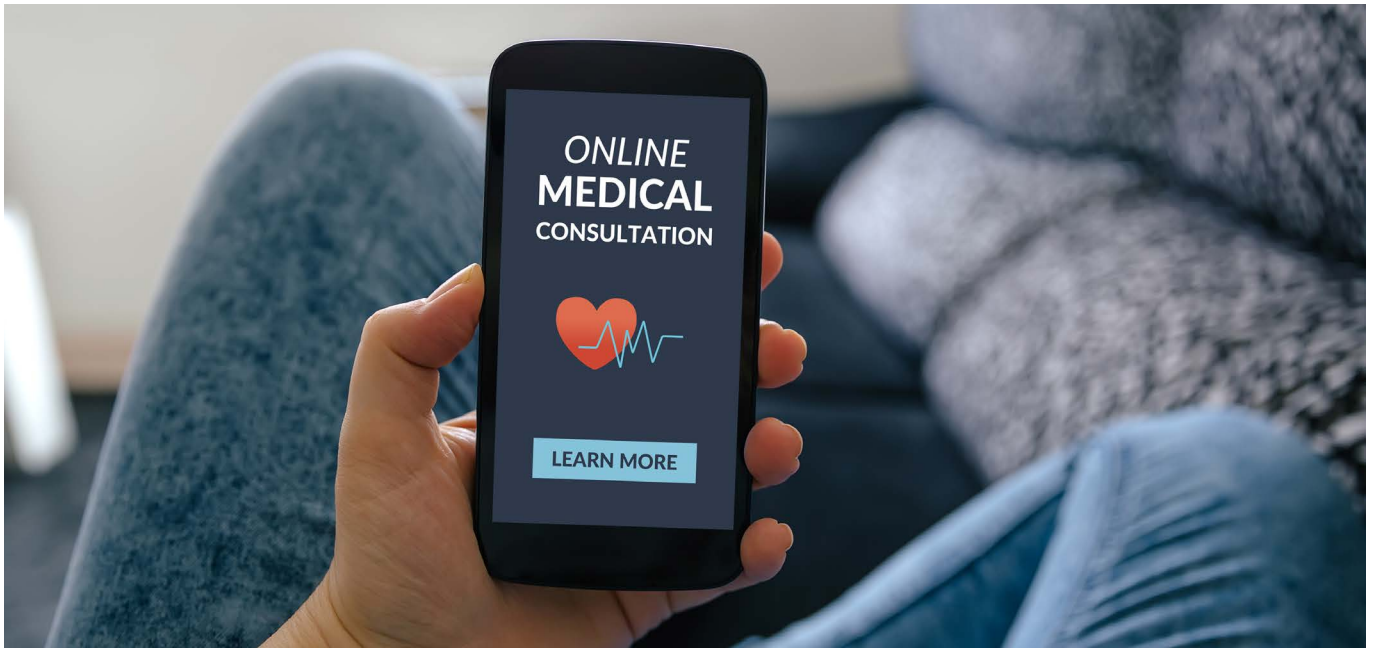
OVERVIEW



The Accenture CIO Survey is a multi-country assessment of the digital health transformation across the healthcare ecosystem. The survey as a whole covers seven countries across three continents, and highlights the perspective of the individuals at the forefront of the transformation: the Chief Information Officers.

This part of the survey features the perspective of 10 CIOs across the UK and Ireland, each of whom we interviewed in October-November 2016, and each with a differing view on the challenges ahead. The survey is based on three hypotheses that we sought to prove or disprove:

- Page 6 **CIOs need to transform their organisations to meet consumers' growing demands, and to leverage digital technology to lower operational costs;**
- Page 10 **CIOs need to get stakeholders, and especially doctors, on board for digital health; and**
- Page 12 **CIOs need to take on a new role, adopt new skills and get resources to lead a successful digital health transformation.**



The digital transformation

Across the UK and Ireland (UKI), healthcare demand and costs are increasing, driven by an ageing population, 'lifestyle' disorders, and the increasing complexity of treatments. In parallel, healthcare is becoming consumerised as patients become increasingly knowledgeable and demanding about the treatment they want and expect.

In response, CIOs across the NHS, eHealth Ireland and the private sector are developing technology solutions which are already changing the way in which clinicians, citizens and patients manage and make use of the healthcare system. In UKI healthcare, digital transformation is a major objective for all interviewed CIOs within the UK and Ireland. Many CIOs are evolving their strategic thinking to incorporate this transformation as a core part of their overall plans. Overall, digital transformation is seen as a vehicle for several objectives that directly benefit both clinical outcomes as well as the business of healthcare delivery:

- **Reduced costs.** Digital transformation includes several sources of potential cost savings, including the ability to treat patients remotely, outside the traditional and higher cost settings, and rollout of wearables and other devices to enable better, real-time and more convenient patient monitoring.
- **Increased patient awareness.** Making electronic patient records (EPRs) more accessible, for example, will help patients build awareness of their own health and improve their engagement with healthcare, empowering the patient towards self-care.
- **Better patient experience.** Changing the way patients interact with clinicians, and the way that clinicians have access to and use data to identify, plan and deliver healthcare outcomes, all have the ability to improve the patient experience.

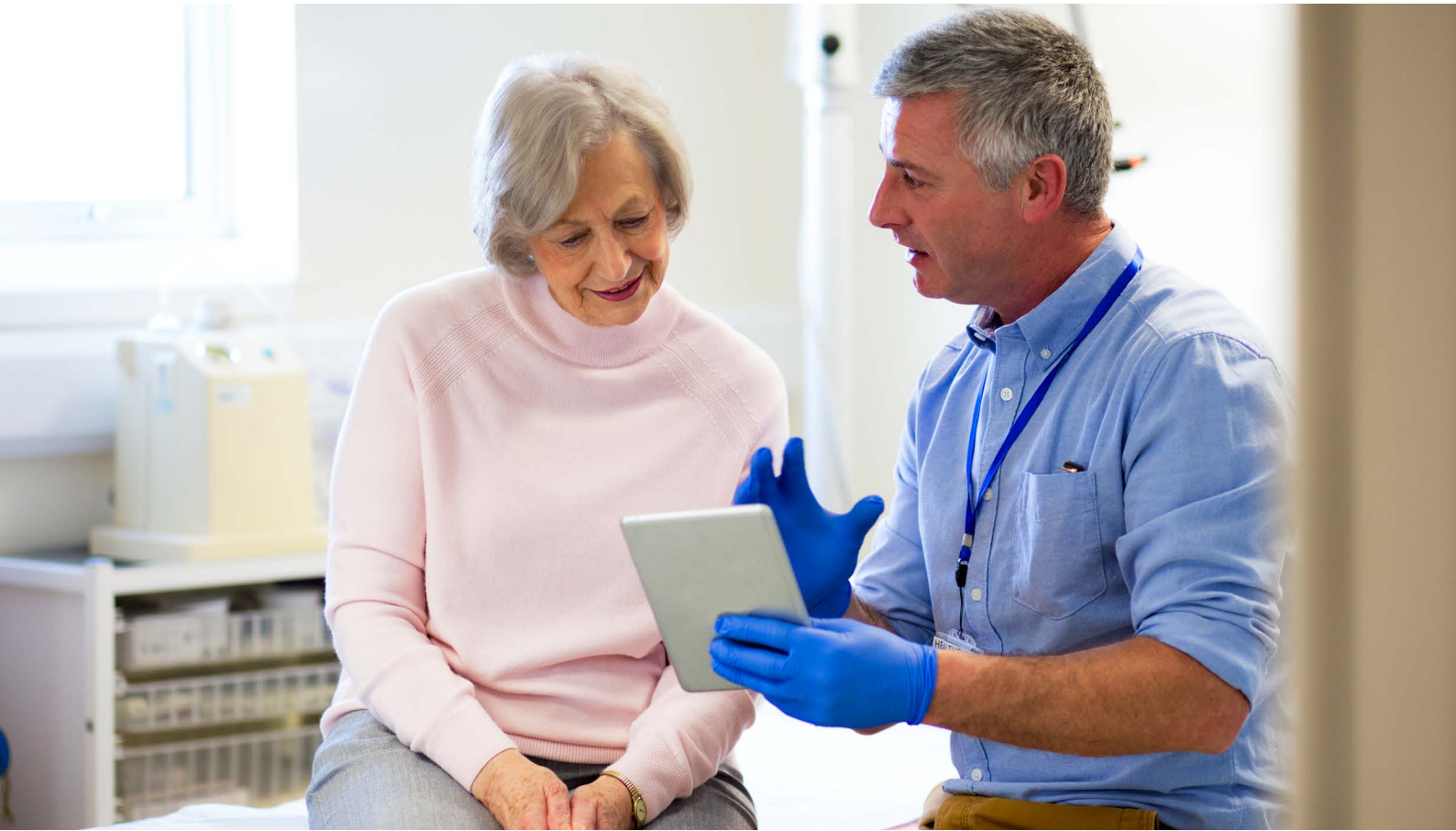


The CIO's perspective

Within healthcare organisations, we found that CIOs often sit at a junction, with conflicting management priorities informing their particular perspective on transformation. CIOs differ considerably not only in their role, but in how their role is perceived by other stakeholders both within and outside the organisation.

In the UK, healthcare CIOs are well aware of the fundamental need to increase digital penetration across the sector. They see themselves at the forefront of this transformation, albeit in different roles and with different perspectives. The CIOs we spoke to sit somewhere on a spectrum, based primarily on their individual skillsets, roles and mandates within their organisation. The two ends of the spectrum can be polarised as:

- Executive CIOs are the front-facing, forward-looking visionaries of the digital transformation. They see themselves as change managers and innovators first, and technologists second. They remain focused on clinical outcomes as the primary goal of the transformation, and have a deep-seated understanding of the business dynamics and organisational pressures they need to navigate to achieve it. They are more concerned with articulating the value that technology can bring to the organisation, and less concerned with the more granular, operational management of Healthcare IT.
- By contrast, operational CIOs are less concerned with the end-goal of digital transformation. Instead their goal is to deliver effective digital solutions to where they are needed within the organisation. Their primary constraints are resources; often, they feel they don't have the time or money to accomplish everything they want to within the organisation. Their role is more technology services than visionary; they keep the lights on and the servers standing up.



HYPOTHESIS 1

CIOs need to transform their organisations to meet consumers' growing demands, and to leverage digital technology to lower operational costs

Surveys found that clinicians and citizens alike want greater, real-time control of health data, from any place at any time.¹ Patients within the modern NHS demand full access to the information in their electronic health and medical records, and they demand complete ability to update and control access to their data. How can CIOs prepare their organisations for these new services, and how can they maximise the impact this transformation has on patient accessibility and clinical outcomes?

¹Accenture's 2016 Consumer survey in England, Accenture's 2015 Doctors' survey in England

Regional collaboration: important, but not easy

Transformation within the UK's healthcare sector, and particularly within the NHS, is a highly complex process. The independent nature of each NHS trust – at least digitally speaking – is a major barrier to integration and collaboration between organisations, and managing this process is a daunting task.

The need from the patient's perspective is obvious. Patient needs do not respect the historical boundaries that demarcate individual NHS organisations. With large software and infrastructural differences between trusts, digital applications need to be able to talk to each other seamlessly for patients to get the care they need quickly.

Regional collaboration between different organisations was recognised across the survey as an important task. Yet without a single point of reference for its management, coordination was a major barrier. Indeed, most CIOs were frustrated with the relative lack of resources – in terms of both time and manpower – allocated to such working groups. While the vast majority of CIOs in the NHS are involved with regional collaboration, all felt they were limited by the fact that each member of their team had a 'day job' they needed to prioritise.

Another problem is that of scope and boundaries. Often, several separate autonomous groups or organisations will tackle problems of regional coordination from their perspective, with initiatives designed to achieve the same goal, but which intersect or overlap in unhelpful ways. Survey respondents were frustrated with three key issues: a lack of coordination across groups, which results in work being duplicated or made redundant; and a lack of technological architecture skills, which results in an incoherent process and conflicting priorities; and a lack of vision as to how digital approaches and technologies can help to transform care models (the art of the possible).

Similarly, in an organisation as large and unwieldy as the NHS, traditional approaches to change management may not prove agile enough. In an ideal world, every CIO would have the time and headspace to gather a clear top-level picture of the scope and objectives of the transformation ahead, taking the perspective of each trust, team and stakeholder into consideration. The plan would have a clear focus on clinical outcomes, with each step laid out clearly in terms of technological infrastructure, organisational processes, and working practices. With the plan developed, all necessary resources would be gathered to enact it.

In practice, however, the sheer amount of planning and organisation required to put such a picture together may be impractical for many NHS regions or, at least, take so long to develop that it significantly delays the first steps on the journey. Instead, a more agile approach may be required, whereby CIOs are able to push ahead with key initiatives, and work out exactly how the foundations enable the bigger picture later in the process. In this way a number of 'quick wins' can be achieved. Across the survey, particularly among the CIOs who saw their role as more operational in nature, our respondents found that implementing processes in carefully chosen areas was beneficial to their organisation. While such an approach can often compromise a team's big-picture transformation process, the operational trade-off – in terms of efficiencies gained and momentum accrued – is often worth it.

"As part of the regional work that we're doing, I'm being released from my job for one day a week, and my colleagues will cover. My organisation is nervous about that, but unless we're playing a leading role within regional integration, we won't be able to deliver services that will help the whole healthcare ecosystem."

 **Vikki Lewis**

Chief Technology Officer at
Lancashire Teaching Hospitals
NHS Foundation Trust

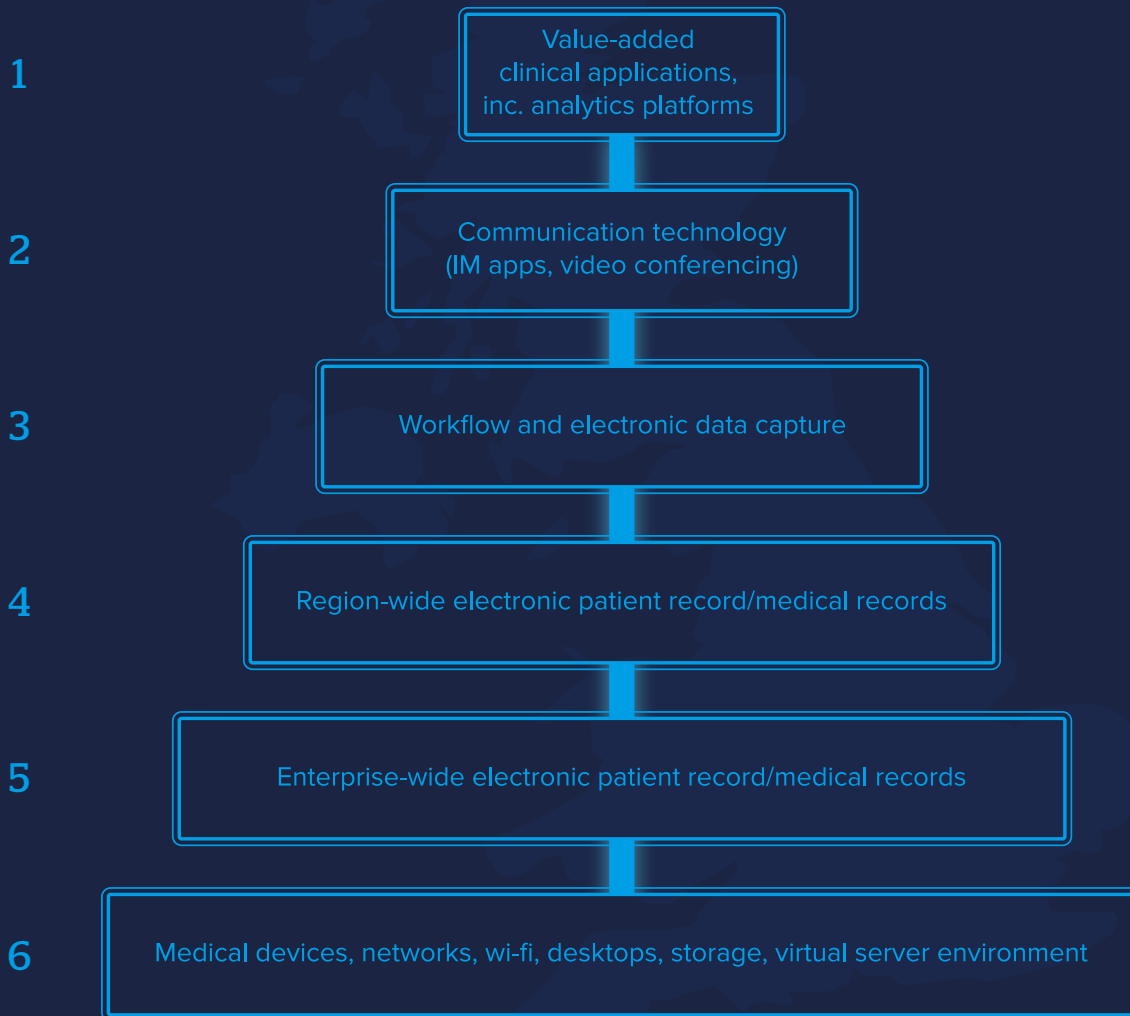
"The MHRA is focussed on changing as an organisation and digital transformation is a key element of that. Designing with our customers will deliver better services more efficiently."

 **John Quinn**

CIO, Medicines and Healthcare
Products Regulatory Agency

This approach can be visualised with a healthcare 'hierarchy of needs'. The full picture doesn't necessarily have to emerge completely before the bottom layers can be tackled:

HIERARCHY OF NEEDS



Each layer of the hierarchy brings value to healthcare service providers and users. The big wins through redefining care models to promote and support wellness, and treat citizens and patients in lower cost and more convenient settings, will take time to define and are enabled by the things in the upper levels. This does not prevent organisations from starting a digital transformation journey, delivering the foundations as early as possible to release benefits, while keeping one eye on the direction being taken in the clinical transformation.

In addition, making use of what is available – instead of spinning up big, aspirational change management programmes – is a good way to ensure a quick payoff for the investment, and thereby build momentum for a larger series of changes down the line. Jumping prematurely into a wide-ranging transformation programme can create more problems than it solves. Instead, a more widely recommended approach is to go through the four stages of change: automation, optimisation, re-engineering, and transformation.

Social media outreach programmes can give useful insight towards consumer preferences

Many healthcare organisations in the UK have hosted outreach programmes in the local community. However, Ireland leads the way in terms of social media outreach, which has spurred innovation across the healthcare system. eHealth Ireland in particular has organised hackathons, lectures and forums in which new ideas have been discussed. In particular, demonstrations of new products and potential services have provided useful feedback loops that directly benefited their eventual deployment.



HYPOTHESIS 2

CIOs need to get stakeholders, and especially doctors, on board for digital health

CIOs have a growing set of stakeholders to consider and a more diverse set of agendas to take into account in relation to digital health transformation. However, there can be a crucial disconnect between the enthusiasm many of those stakeholders have towards digital health and their ability to interact with new processes and applications. How can CIOs partner with doctors and other key stakeholders, both within and outside their own organisations, to solve today's issues and shape tomorrow's digital health services?

A crucial bridge in a time of need: the role of the CCIO

The implementation of the Chief Clinical Information Officer (CCIO) role within the structure of the NHS has been a major success. In accordance with the rapid expansion of digital services across the healthcare sector in the UK, the organisational infrastructure has had to expand as well. To that end, the role of the CCIO has provided a much-needed link between clinical and technology functions. All respondents in our survey were emphatic in highlighting how important this link was; a majority of CIOs we spoke to had weekly or bi-weekly check-ins with their CCIOs. Ireland has also adopted the UK's CCIO model, and has established the CCIO Council to provide clinical governance and advisory services for eHealth solutions across the country. More broadly, there is a strong feeling that doctors should be involved in co-creation of digital strategies and solutions. Greater coordination between technological and clinical domains results in better solutions and higher levels of satisfaction and ownership among doctors, which in turn leads to quicker and more comprehensive adoption throughout the community.

Legacy systems: 'if it ain't broke, sometimes you still need to fix it'

For many CIOs we spoke to – particularly those whose role is closer to the operational side than the executive side – the issue of legacy systems and their upkeep was front of mind. The issue centres on the more traditional role of the IT function, and challenges in keeping the IT estate in a supportable and supported state leads to two types of risk: by affecting availability of crucial digital technology services, and by luring the CIO away from the transformation role.

The biggest single challenge faced by CIOs on this issue in particular is a lack of operating budget. NHS IT budgets are lower than required, and the current cost-cutting climate means that IT functions are often at the front line of budgets to be cut. Securing capital investment to remediate infrastructure, operating systems and applications that are (or are soon to be) end of life is hard, when other mission critical parts of the organisation are vying for the limited capital capacity. Aside from the drawbacks of a pre-occupation with legacy system maintenance, clearly a system in which crucial infrastructure is only replaced when it is no longer functional is not fit for purpose. Any downtime can not only cost the organisation money, but can affect clinical outcomes directly. Underinvestment in IT will often result in a situation where a Trust accepts the risk of continuing to use an unsupported operating system, with all the compatibility issues and security risks this involves.

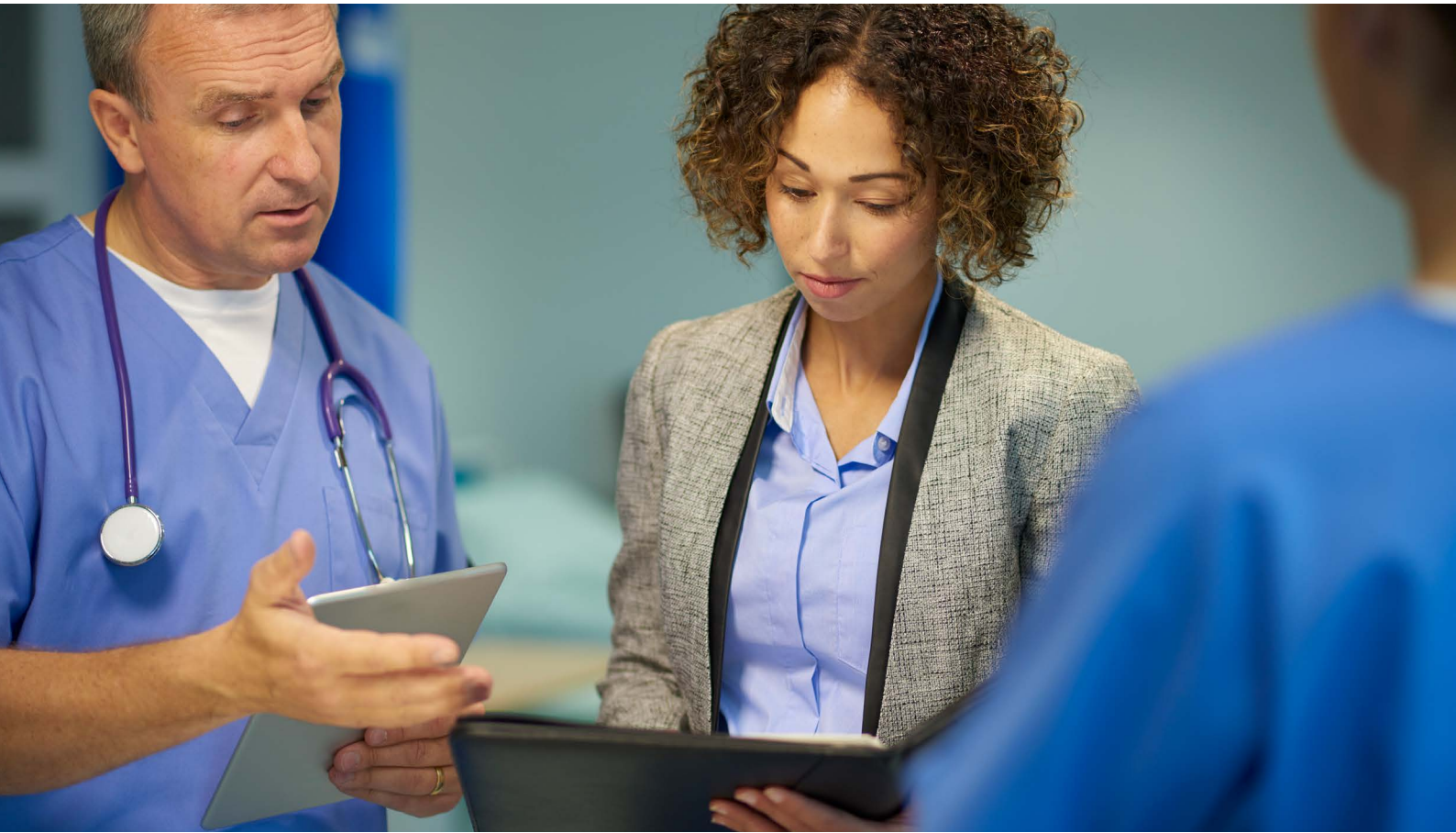
One piece of advice that several of our respondents said they had heeded was to focus on the bigger picture. When evaluating and appraising a legacy system, a focus on whether there is a business case to keep it is beneficial. This requires knowledge of what else is available, and an appreciation of the true value provided by the systems.

Under such a framework, it may be possible to reach a more accurate judgement about whether the upkeep on a legacy system is worthwhile, and what the options might be to replace it. Often this means that the CIO has to take the lead in educating the executive board and illustrating the importance of the investments. There are some notable, recent stories that are helping build the executive understanding of the impacts of systematic underinvestment in IT – like outages in key clinical services due to failures of technology systems. These situations can help to sharpen the attention on IT maintenance.

"The innovative stuff - the really great stuff we can do, like e-prescriptions and electronic forms - is all fantastic, but the underpinning technology has to be in place, because if it's not, you may end up having to shut the hospital altogether if you lose a server room, for example. Investment in infrastructure resilience is critical to ensuring any impact on patient services is minimised."

 **Alan Tuckwood**

Head of IT, Southend University
Hospital



HYPOTHESIS 3

CIOs need to take on a new role, adopt new skills and get resources to lead a successful digital health transformation

New services, and new types of service, are in high demand from patients and doctors alike. As use of the cloud, analytics and data sharing rises, CIOs are facing challenges that require them to adopt new skills and build different teams to lead and deliver digital health transformation. How does the modern CIO approach this?

Thinking digitally

Across the survey, there was a clear message that within IT and informatics, the CIO role as it has existed – that is, primarily as a ‘Head of IT’ function -- needs a comprehensive rethink. The digital transformation, writ large, covers this change as well.

At the centre of this change are the CIOs themselves. As the nominal head of the organisation’s IT infrastructure, it is tempting for executives and managers alike to see the department simply as a cost centre. Systems unfit for purpose get replaced; systems that break down get fixed. All such transactions come at a fixed cost, and all seek to maintain rather than transform.

In a digital world, more is demanded from the CIO, not simply in terms of volume, but in terms of focus as well. An increase in digital penetration within healthcare will, of course, increase the CIO’s workload as manager of the technological estate. But to truly think digitally, the CIO needs to have an appreciation not only of the technology itself, but of how it is used. The CIO needs to be able to play a role as a change manager and visionary, helping other executive decision-makers to see how technology can have an impact on the organisation’s overall ecosystem, culture and working practices.

Historically, technology systems have evolved individually, and have been driven by supply-side considerations: vendor or data constraints and organisational boundaries, for example. By contrast, the future of healthcare informatics will perhaps be thought of in terms of patient outcomes and business objectives. In an ideal world, the digital transformation would be envisioned as an all-encompassing revolution in doctors’ working practices and processes. Each of these individual changes would be considered from the perspective of the patient, taking competing objectives of cost, convenience and quality into account. No surprise, then, that the CIO’s position at the forefront of such a philosophically fundamental change comes with such wide-ranging responsibility.

“You need a front-facing set of people who are able to articulate what the clinical needs are. Yes, you need someone who understands the technical skills required, but it’s fundamentally about managing change. You can’t really recruit; you have to cultivate and grow the talent required for this.”



Martin Callingham

CIO, Mid-Essex Hospital Services
NHS Trust

The practicalities of transformation

No CIO is an island, and each of the CIOs we spoke to have very different perspectives on their position, in part due to the organisational culture that surrounds them. Where some are effectively sequestered away as the operational manager of the IT estate, some are fully paid-up members of the executive board, with all the influence and responsibility that goes with it. What, then, is the optimal way for the CIO to perform within the framework of their organisation?

The remit of the CIO will change according to their experience, their position, and the culture of the team. The nature of the CIO’s new change-management role is that they will need to judge how they and their team are likely to respond to both external pressures and internal initiatives in the best way for the organisation overall. Many of the distinguishing features of an accommodating organisational culture are more abstract than can be measured in an industry standard. Again the key is communication – across the executive board, through the CIO function, and throughout the informatics

department itself. Healthcare organisations as a whole need to have an engaged and knowledgeable technology advocate who is taken seriously across the executive board. This advocacy will help organisations move away from seeing the department strictly as a cost centre and a source of frustration, and instead embrace the CIO function as a source of genuine innovation and an enabler to transformation.

Personnel and skills - digital development

“We’ve put together an apprenticeship programme which has been running for three years now. This has allowed us to gather expertise in a much more cost-effective way than by bringing in a ready-made technologist from outside. We started working with one of our team at 14 on work experience; three years later he’s a fully-fledged apprentice in the interface team working on projects that he’s delivering himself.”



Eddie Olla

Director, Nottinghamshire Health Informatics Service

“We see health IT as the most exciting IT role out there, because you can do such a width of stuff, and everything you’re doing is for the good of the man on the street rather than the profit line of the business. We’ve had an awful lot of interest because of the public engagement in coming to work here, despite competing with some of the biggest tech companies in the world.”



Richard Corbridge

CEO, eHealth Ireland

Within the NHS, CIOs are clear that developing the skills and capabilities for digital transformation from within the organisation is crucial. This is partly due to the fact that attracting and retaining talent can often be a difficult process in the public sector, good digital transformation skills are at a premium in the job market. Worth noting here that CIOs see advantages to bringing in talent from outside the healthcare sector – new ideas from other sectors are often applicable, particularly around the change management aspect of the transformation. However, the remuneration options open to CIOs and IT teams are limited. If resources with the right skills can be found who have a passion for tackling the big challenges in health, or if CIOs can arrive at a mix of career level and package that can retain skilled digital resources, then the NHS wins. This is not a common outcome. Developing the digital skills within the IT team is often the only option – and CIOs see this as a big responsibility.

Nowhere is this discrepancy starker than in Ireland, where many of the world’s biggest technology companies have their European headquarters. With such a difficult environment, a well targeted recruitment programme is essential. A digital presence is particularly useful – advertisements on LinkedIn, for example. Social media outreach is useful for product development, but can also be useful in projecting your organisation as a good place to work. This perception is crucial if public-sector healthcare organisations are to compete with the allure of the Apples and Googles of this world.

CIOs also found that really successful technology enabled transformation needs for the programme teams to be able to speak the technical language of the applications and digital tools being used, and crucially the operational or clinical language of the service users. Having one, not both, is the traditional domain of the IT project manager. Being able to translate the challenges and requirements of IT projects to doctors and nurses, and bring them along on the change journey is increasingly seen as vital for the successful delivery of the vision of the CIO, his or her team and the wider executive leadership. Building these translational skills within informatics departments is a major challenge, but nurturing these skills is worth the investment.

CIOs also note that within the organisation the best staff members to drive change and adoption are the clinical leaders. Indeed, all our CIO respondents agreed that having clinicians be evangelists for digital transformation is one of the keys to success.

Much of this interaction will pass through the CCIO function, but several CIOs we spoke to said that campaigns throughout their organisations had uncovered many clinicians who were not only keen to use the technologies being deployed, but to get involved in co-creating solutions and training and mentoring others in adoption as well.

By contrast, there was also concern that some NHS staff were not able to get up to speed quickly enough with new working processes and applications. To counteract this, CIOs must be able to communicate effectively, both up and down the organisational ladder, with people who are less technologically literate. Finding this level of communicative skills within informatics departments is a major challenge, but nurturing these skills is worth the investment.

Across the UK and Ireland, in the public sector in particular, attracting talent can often be a difficult process. While many healthcare workers see their choice of work as a vocation rather than simply a job, the remuneration offered to potential recruits is often not high enough to attract the best and brightest. While there are several advantages to bringing in talent from outside the healthcare sector – new ideas from other sectors are often applicable, particularly around the change management aspect of the transformation – the reality is that the NHS often has to find digital leaders from within its own ranks.

“We needed some IT leadership, so we went out and employed a Chief Medical Information Officer with protected time. We wanted a whole-time equivalent, but this would limit their time as a clinician too severely, so we have two clinicians on half-time contracts in that role, along with a Chief Nursing Information Officer and a Chief Pharmacy Information Officer. As a result, clinicians have been much more engaged with IT across the organisation; at one session we had 200 doctors turn up to talk about single sign-on.”



John Clarke

CIO, University Hospitals of Leicester



CONCLUSIONS

As the healthcare landscape is transformed towards a digital future, the position of the CIO is undergoing a similar transformation. Across the survey, CIOs were united in their belief that their role was, at its core, an executive role, with a focus on innovation and change management. Gone are the days when the CIO position was a glorified Head of IT, solely responsible for procurement and maintenance of the organisation's technological estate. Instead, in today's healthcare environment, CIOs must wear several hats; as innovators, change managers, executive decision-makers and business leaders; if they are to be at the helm of a successful digital transformation.

CIO SURVEY - GEOGRAPHIC COVERAGE





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