HUNTER

Executive talent for the healthcare sector

WHAT MAKES A TOP CIO?

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PART OF HUNTER HEALTHCARE'S INSIGHT FOR SENIOR NHS LEADERS SERIES 2016

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/ Introduction

Two consistent threads run through a long line of NHS policy papers and reviews of health service productivity. The first is that the health service, in which three-quarters of trusts are currently in deficit, needs to deliver unprecedented productivity savings.

The second, linked to the above, is that effectively used information has the potential to become the greatest strategic asset in 21st century healthcare. Automation of paper processes, typified by patient administration systems and electronic patient record projects, is the foundation for integrated shared care, digital patient services, and personalised and translational medicine.

Small wonder that politicians, restlessly searching for levers to change the terms of debate in healthcare, have become convinced that root-and-branch digital transformation, akin to that which has reshaped other industries, is a necessity.

But who are the leaders that will take up the baton of digital transformation? NHS chief executives perhaps? Most chief execs and senior directors have shrewdly seen championing IT programmes as a career-limiting move. The NPfIT era continues to cast a long shadow.

Finance directors? They already hold responsibility for IT in many trusts. Maybe, but it's a rare accountant who can look at an IT-led transformation project and see an investment rather than a cost.

For the NHS to achieve its digital ambitions, a new type of leader will be required. One able to spearhead transformation initiatives that are underpinned by information and technology. The challenge is develop and recruit a cadre of highly capable strategic information leaders. And this is not about managing networks, hardware and phones, or providing statutory reports – vital though these aspects remain.

Step forward the NHS CIO. As this report shows, the ideal NHS CIO needs to be both a paragon and a polymath. A strategic thinker and a great communicator able to bridge divides. They must be able to talk tech turkey, yet still carry clinicians and senior executives.

They need to be resilient, to develop great tactics while retaining a strategic focus, and to understand both the business needs and the technology. And they must be able to operate effectively in our highly regulated, heavily scrutinised, super-politicised, resource-stretched health service.

In many industries, particularly those that continue to be reshaped by digital change, the CIO is recognised as the senior executive most likely to have a positive impact on the operational performance of an organisation.

The role of NHS CIO must be the most senior executive in an organisation charged with ensuring it uses information as a strategic asset to transform productivity, drive improvements and remodel delivery of services. Few yet have such a clear remit.

There are without doubt many brilliant information leaders within the NHS, but relatively few have a seat on the board – still a key litmus test of the importance an organisation accords to information.

True CIOs in the NHS remain the exception rather than the rule. Overall there are still far more IM&T directors, deputy directors of IT and senior IT managers than there are strategic information leaders.

The current generation of NHS CIOs and IT directors is a diverse bunch from a variety of backgrounds; some have built their careers solely within the health service, others bring valuable experience from other sectors. Some come from information management, others from IT management, and others from completely different backgrounds including general management and finance.

Moves to professionalise the role and introduce standard qualifications are a major step forward but alone will not be sufficient. The fragmented NHS also urgently needs 'rockstar' CIOs whose reputation is built on a track record of successful delivery of transformational change and improvements.

Though the NHS struggles to compete on pay, healthcare remains an extremely rewarding vocation. Many top CIOs see the health service as a place where they can make a meaningful contribution to their community and society, and to ensure it attracts them the NHS needs to accord the role the importance it deserves.

Jon Hoeksma
Editor, Digital Health

/ Executive summary

Information technology and health informatics have a growing part to play in improving the way the NHS delivers care, and the chief information officer is pivotal in leading the necessary change

The role of information technology and health informatics is increasingly important in terms of improving the way the NHS delivers care, from better prevention and treatment for patients, to ensuring efficient use of resources.

Optimising the use of technology is a unique challenge for the NHS, made more acute by the struggles of the National Programme for IT (NPfIT) and the need to make £22bn of efficiency savings by 2020. In addition, NHS trusts are trying to meet calls in the Carter Review[1] to make better use of basic IT systems, as well as progress towards the ambitious target of being paperless by 2020.

The Chief Information Officer (CIO) is charged with helping NHS trusts meet these challenges. Over the past 10 years, the position has been changing from that of a senior manager heading a supportive, back-office function to someone leading the organisation in the use of data, informatics and new technology. As a result, CIOs need to understand everything about their trust – from trust finances to how patients are managed.

We know the quality of CIOs employed in the NHS is variable; given the importance of the role, we need to understand what qualities and attributes make a top CIO. They face a lot of external commentary and judgement, so we decided to speak directly to those carrying out the role across the NHS and let them have their say. We carried out more than 30 face-to-face interviews with NHS CIOs, and an online survey of a further 28.

Not surprisingly, excellent communication skills were ranked highly among the required qualities, driven by a need to engage internally with all senior managers and department heads, and externally with other partners, suppliers and providers. Top CIOs need to be articulate storytellers so they can influence the board to make necessary changes happen despite the shadow cast by the organisation's finance directorate.

Top CIOs must be good problem solvers, capable of handling large workloads as well as being resilient enough to succeed in a tough environment. They are strategic thinkers who understand how to make the most of health information to meet business objectives. They are able to evaluate existing technology and current initiatives to ensure they relate to business goals.

As well as discovering what qualities, attributes and behaviours are common among top CIOs, we hoped to establish where CIOs are being recruited from – in other words, what are the routes into the role? This led us to consider whether CIOs need to have NHS experience, or whether a background in the private sector can be just as important.

Our research identified a need for greater investment in leadership and management to develop future CIOs. Many of our respondents saw attracting new talent to the profession as a priority, and there was a widely held perception that professionalisation of the CIO role could help in this respect. Some CIOs felt this would also help to address concerns about reporting to the finance director and having little or no control over their budget. Some interviewees reflected that boards without a CIO lack the knowhow to pursue innovation.

Our interviews also revealed that CIOs are often unable to build significant networks beyond their organisation. There is not enough sharing of best practice. It appears many organisations are struggling on their own to solve challenges that trusts in the same geographical region have already found answers to. Initiatives such as the Digital Health CIO Network are therefore very welcome, but more needs to be done to ensure today's CIOs have the tools and support to help their organisations meet expectations and put technology and health informatics at the heart of improvements to patient care.

“This is the best job I’ve ever had. In other jobs you don’t feel as much that you’re making a real difference. I’m not interested in smooth operations – you have got to want to make changes and make a difference, be willing to challenge and push the boundaries.”

Joanna Smith, CIO, Royal Brompton and Harefield NHS Foundation Trust

/ Evolution of the CIO role over the past 10 years

The role of CIO is changing fast and while it should be one of the most important in the NHS, past controversy surrounding national IT projects, an unwillingness to embrace or adopt new technology and a lack of commitment to change management have been barriers to taking technology and informatics forward

A renewed emphasis on technology is not surprising given the advances we have seen over the past decade. There has been a rapid increase in the power of computing and access to information. Smartphones, mobile devices and social media give patients and medical staff quicker and better access to information than ever.

The *Five Year Forward View*[2] and the Carter Review both task NHS trusts with embracing technology such as electronic patient records, e-prescribing, data collection and sharing, and real-time records updates that can be shared between community health teams and acute care consultants.

Mobile phone apps is one area where some trusts are starting to make inroads. The development of in-house apps, or working with informatics providers, helps trusts to respond to clinical demands. There are many success stories; Leicester Partnership NHS Trust has recently developed an app to break the stigma around electroconvulsive therapy, aimed at patients suffering from conditions such as severe depression. In a similar way, Beautiful Information, from East Kent University Hospitals Foundation Trust, has developed an app that allows the executive management team and staff to monitor real-time waits in emergency departments.

However, improving the digital skills of staff within trusts is a critical factor in making the most of such advances. Lastminute.com co-founder Martha Lane-Fox's recommendations to the National Information Board[3] outlined the need to build these skills among the workforce. The NHS must empower staff who are digitally competent to share information with colleagues.

While many trusts are now beginning to grasp the nettle, not all are embracing technology, leading to questions over the commitment to change within the NHS. Former Health and Social Care Information Centre chair Kingsley Manning has spent 30 years in health technology and recently raised major concerns about the approach to the digital agenda. He believes the NHS and its leaders are still "too risk averse" and not ready for the kind of "disruption" required. "We are basically delivering a whole set of administrative systems that by 2020 might get us somewhere most other industries were 15 years ago. So we are playing catch-up," he told the *Health Service Journal*.

Sceptics also point to the recent search for a chief technology and information officer at NHS England. They highlight the fact that the new technology officer will not be at the top table, reporting instead to the new national director for commissioning operations and information, Matthew Swindells.

However, the Carter Review has reinvigorated the push for better use of technology solutions and systems, building on plans for a paperless NHS by 2020. Lord Carter recommends that, at the very least, trusts need to have key systems for e-rostering, e-prescribing, patient-level costing and accounting, e-catalogue and inventory management and electronic health records.

While the review recommends that boards are made accountable for the implementation, it also acknowledges the poor track record of the NHS in this respect. It tasks NHS Improvement with taking the lead and setting standards for meaningful use of such systems and incentivising trusts to achieve them. This should mean technology and IT systems are not seen as merely a support function separate from the day-to-day running of a hospital.

Another potentially significant impact on the role of CIO is likely to come from Robert Wachter, the prominent physician academic tasked with carrying out a review of information technology in the NHS. He has already pointed out that digitising healthcare does not simply mean flicking a switch, but rather requires a complex set of changes that start with a complete rethink of current processes, which is dependent on clinician buy-in. This will mean that although change management skills continue to be integral to the role, CIOs will need a wider range of skills and qualities than may have been the case in the past.

Many trusts are still lagging behind in turning data into actionable business intelligence. To push the NHS towards the forefront of informatics usage and away from its historical stance of viewing IT as a back-office function, CIOs are having to work together and learn from each other. Digital Health's CIO network is a good example of a collaborative approach that is proving its worth.

Tony Eardley, CIO at the The Royal Orthopaedic Hospital NHS Foundation Trust, says it is imperative for CIOs to get around the

table to make the most of new funding made available by NHS England.

"One of the issues facing today's CIO is how to create the space and time to have conversations with others to establish the benefits of closer working, for example with joint procurements," he says. "With the increasing and constant financial pressures on the NHS there is an emphasis on getting things right on your own turf before seeing how other people are doing it."

Based on our interview responses, it appears this is a challenge many CIOs are happy to meet head on. They are motivated and recognise that now the NPfIT programme is coming to an end, there is a growing momentum in the NHS that has the potential to bring about significant change.

In recent years the role of the CIO has become more business facing than ever, leading improvements and change across the whole organisation. This in turn means CIOs are now having to engage across the organisation, highlighting the importance of investing in innovation and the gains that can be made from it.

Catherine Dampney, CIO of NHS South, Central and West Commissioning Support Unit, says: "The thing that is motivating me at the moment is that we are on the cusp of real change and you can see this happening across the whole landscape – shifts underpinned by technology and information. It is very exciting and there is enormous potential with integrated care records becoming a reality across the population. It gives us the ability to carry out sophisticated analysis and provide very useful insight."

Most trust boards clearly recognise the strategic importance of IT and health informatics. A survey by Digital Health of NHS IT leaders found that, overall, boards were reported to have positive attitudes to IT.[4] Almost 90 per cent of IT leaders questioned agreed with the statement: "The board at my organisation supports IT", while just over 80 per cent agreed with the statement: "The board sees IT as a key strategic investment necessary for improving performance."

Although most trusts recognise the role of CIO is integral to the success of digital adoption within the NHS, it is surprising that some CIOs remain disconnected from their boards. The Digital Health survey found that only a third of CIOs and IT directors have a clear board-level responsibility for IT. Furthermore, in a third of organisations, they are not even responsible for their own budget. Other board members reported to hold responsibility for IT were operations and performance directors (13 per cent), the chief executive (12 per cent) or the medical director (7 per cent).

This is why many CIOs feel their position deserves a board appointment. Several of our interviewees, though, questioned whether a board appointment was necessary as long as the CIO has a good relationship with the board. Either way, a top CIO should be fully engaged with the board and other stakeholders, explaining their role and the ways in which technology and informatics can transform the business.

But Cathy Francis, regional director of patients and information for NHS England South region, asks: "How can we expect CIOs to innovate and understand the business if they don't have a seat on the board? They need to understand and contribute to the strategy. The head of technology should be standing at the white boards with the rest of the organisation, drawing redesigns of pathways."

And Christine Walters, director of informatics at St Helens and Knowsley Health Informatics Service, says: "Being on the board definitely helps me do my job better – it gives full context and a different perspective. The CIO is still not seen as a senior position in a lot of trusts, but it can evolve and take on new responsibilities and help to achieve transformation."

A further complicating factor is that the level of digital maturity varies between trusts. Data published by NHS England (April 2016) have shown that the readiness of trusts to exploit digital technologies is mixed. In an interview with Digital Health, Paul Rice, head of technology strategy at NHS England, says the overall picture shows some trusts doing well and fully exploiting the use of technology, while others are struggling and need extra help.[4]

This varied picture is reflected in Hunter Healthcare's survey of CIOs, which found that just 62 per cent of trusts are using the IT Informatics Library (ITIL), which focuses on aligning IT services with the needs of the business; 31 per cent are partly using it and just under 8 per cent are not using it at all.

However, some trusts are embracing the opportunity presented by technology and better use of data. Paul Clements is interim CIO at Pennine Acute Hospitals NHS Trust. He says: "There is a change in perception from the executive management team. For example, we need real-time dashboards. The CEO and the board now understand the levers that are there to provide information. They are more able to articulate what they want and there is an expectation that it can be delivered.

"It's the ability to find the right information at the right time, the right people accessing it with the right training and the right tools and making it available all of the time."

It is therefore clear that the role of the CIO is becoming pivotal and top-performing trusts recognise this. However, it remains to be seen whether boards and organisations are willing to give their CIO the support and responsibility they need to maximise the potential of technology to help the NHS meet its targets.
The CIO role is about transformation, not just technology.

/ Is there a typical journey to CIO?

Should trusts be looking to recruit CIOs with private sector experience, or is NHS experience a prerequisite for the role?

The role of CIO requires skills and abilities across several different areas. Today's CIOs have followed different routes into the role but more often than not the responsibility is thrust on them with little support. According to the Hunter Healthcare survey, the majority (62 per cent) gained their NHS informatics experience through both information management and IT management.

The variety of routes into the role is exemplified by Mark Hutchinson, CIO at University Hospital of South Manchester NHS Foundation Trust. He says he became CIO by accident, having started in finance and then found that he was comfortable with the implementation and configuration of the finance system. "Later, after I had successfully implemented a telemedicine service in a prison, I saw the difference systems could make to the medical staff and patients and was hooked. I wanted to carry on having this positive impact and so worked my way up to CIO."

At the time he started there wasn't a recognised CIO role and he had to navigate his route from Band 2. Although he took some wrong turns along the way, he was lucky to work alongside medical directors and finance directors who were happy to invest in him. He says: "The NHS is complicated and much more so than a company that only focuses on one product. This role is about saving lives by implementing the right system. The biggest issue is that good informatics professionals can get distracted by the private sector, where they can get more money, on their way to the top."

Mark's journey typifies the need for greater investment in the next cadre of CIOs within the NHS. Being "distracted" by the private sector was a common concern raised by the CIOs we interviewed. There is considerable debate about whether private sector, or non-NHS, experience is beneficial and finding consensus on the issue is not easy because there are some strongly held views.

Some CIOs believe bringing in people from outside the health sector is a bad idea. They think CIOs should have a good grounding in healthcare because, ultimately, IT is only a part of their day-to-day work. They emphasise the importance of engaging with clinicians and building trust within the board and the management committee, which is made easier by inside NHS knowledge and understanding.

However, such views are very much in the minority, held by just 7 per cent of those we interviewed. A third of CIOs felt more should be done to encourage talent from the private sector to enter the NHS. There was a consensus that there should be greater investment in attracting the best talent from outside alongside developing talent within the NHS.

Comparing the trajectory of NHS CIOs with that of their private sector counterparts, it is often the case that private companies build executive capabilities through education, training and developing leadership skills. Although this does happen in the NHS it has largely bypassed the CIO role. In the worst cases, the CIO is viewed simply as the senior IT manager, rather than a key strategic figure in helping to move the trust forward.

A combination of technical skills developed in the private sector and a desire to work within healthcare clearly makes a difference. Andrew Haw is head of health informatics at Nottinghamshire Healthcare NHS Foundation Trust. He worked in the energy industry, but by his late 20s had discovered "he had the bug" for writing software. He moved in consultancy circles for five years before realising he had an interest in health. For Andrew, becoming CIO was the logical route.

He says: "I'm working in an industry where the end product is worthwhile for society. I'm also working with highly intelligent and motivated people. This is tempered with a complex set of problems and rules sometimes created by the central targets and sometimes by accident. All this is combined within complex data models."

Interim CIO Ward Priestman, who has worked at Great Ormond Street Hospital NHS Foundation Trust among other trusts, warns that the NHS culture takes some getting used to if you have come from the private sector. He says: "Before I joined the NHS I worked in private companies. The culture change is a big challenge and there is a risk you will become frustrated and impatient with how the NHS works. It's not that the NHS is broken, far from it, but to get progress you may need a different approach."

Andrew Chronias, CIO at Central London Community Healthcare NHS Trust, found himself in NHS informatics after gaining a degree in history. He quickly progressed after taking various

jobs, and although he says he didn't deliberately decide to enter NHS informatics, it has been a conscious decision to stay within healthcare. His main reason for staying is that he recognises that performance data and information have great potential to change the quality of care in the NHS. He wants to address the challenges the NHS faces and believes as a CIO he is in a position to do so.

Mark Gregson, interim CIO at Bradford District Care NHS Foundation Trust, has worked in private and public sectors and is a strong advocate of doing so. He says: "The main thing is having the ability to understand the business problem. The public sector used to specify 'must have public sector experience' but this has changed.

"It doesn't really matter other than the context. I am a big advocate of not sticking to your own sector. A good friend worked in manufacturing and there are lessons you can learn from that environment. I've learned lots from him that we can apply to the public sector and health."

Brinley Platts, founder of the Impact programme for IT leadership, and currently chair of CIOdevelopment.com, identifies four sources of CIOs.[6] "They can come up from within IT, come across from non-IT, be brought in from outside the organisation as a change agent, or be brought in as a consultant," he says.

Candace Imison, director of policy at the Nuffield Trust, reflects that healthcare CIOs often have a deep knowledge of technology but no understanding of the clinical processes they are supporting. "Professionalisation of heath informatics is a critical growth area, we should be doing much more to develop training of this workforce. But we may have challenges around pay. Workforce development funding is being cut; the mad thing is we have the money but we're not adequately supporting those who will be responsible for spending it and using it."

Martin Alexander is director of information services at South Tyneside NHS Foundation Trust. His background is in engineering and he sees the need for a proper development path for CIOs to support them and help them understand what the business does. He wants to encourage the professional path for CIOs. He says: "We need more software engineers with a grounding in software and hardware, to be more like the private sector. I can only observe what goes on in the public sector but I think we have drifted a little from the CIO coming from the grassroots.

"There needs to be a proper development path for CIOs to support them and help them understand what the business does. Every decision we make must be focused on healthcare. The British Computer Society (BCS) Health Executive is trying to address this, but is not there yet in terms of making this development accessible."

Professionalising the role of CIO

In our online survey we asked about the benefits of professionalising the CIO role. Almost 90 per cent saw this as a positive initiative, with reasons including greater recognition and attracting new talent, as well as raising the profile of the role. Respondents generally agreed that professionalisation would improve credibility and standardisation; boosting recruitment and retention was also mentioned. The impact on patients was also highlighted, with one CIO saying it would help to give patients greater confidence in their data being safe and secure, while another said it could lead to a more patient-focused approach.

BCS Health Executive chair Andy Kinnear is clear about the benefits of professionalising the role. He told Digital Health: "I do not believe a CIO can count as a professional based on experience alone, even though it is really easy to believe that having done 10 or more years in a job means there is nothing left to learn. The CIO studies I undertook, initially at Cranfield University and then at Oxford, Stanford and Berkeley, taught me things I could not have possibly have learned sitting at my desk in Bristol."

The need for strategic insight has been obscured amid the fallout from NPfIT, but every CIO needs to be a leader with the ability to articulate informatics in a strategic way. Understanding the organisation's business strategy and ensuring their department plays a part in meeting organisational objectives is a key function of the CIO role. The journey to CIO should therefore be one that ensures the requisite qualities are gained along the way.

/ What motivates a top CIO?

Whatever their route into the role, the motivation for many of the CIOs we interviewed is similar: they recognise the importance of elevating the use of technology and informatics beyond that of simply a support function

CIOs understand that the development of information and technology is a critical factor in helping clinicians to provide better care. They have seen how intelligence gained from data can have a positive impact on decisions made across the healthcare system.

The majority of the CIOs interviewed had a common motivating factor – the desire to be at the forefront of real change in the NHS. They are genuinely interested in improving healthcare and do not see the role as just another job in IT.

James Rawlinson, director of health informatics at Rotherham NHS Foundation Trust, is a good example of someone who wants to make a difference. He says: "I have strong values and want to do the right thing for friends and family. But with a wider view, I also wanted to make the best value of public funds. Getting to director level or associate director level enables you to enact that change. Every organisation is different, some are without a CIO or a director. It shouldn't be about the title on the board, as long as you have access. Our ability to influence change is massive."

Beautiful Information founder Marc Farr is driven by a similar desire to focus on the benefits of using data, rather than wires and boxes, for operational change to improve patient care. He says: "The majority of spending still falls on IT not on data. IM&T is seen as IT and systems and there is not enough focus on the benefits of data for patients. Our role is to put information in the hands of people who are directly responsible for patient care."

There was ample evidence among the CIOs we spoke to of the energy and drive needed to bring about changes required to help colleagues and patients. Joanna Smith is CIO at Royal Brompton and Harefield NHS Foundation Trust and believes she can make a real difference to patients. "This is the best job I've ever had. In other jobs you don't feel as much that you're making a real difference. I'm not interested in smooth operations – you have got to want to make changes and make a difference, be willing to challenge and push the boundaries," she says.

Making a difference doesn't necessarily mean introducing cutting-edge technology. A CIO who is close to their organisation can introduce technology that may not be new but could actually make a difference to staff, allowing them to work more effectively. Some CIOs are motivated by identifying a need for change and finding the right technological solution to achieve it.

Another motivating factor for CIOs is being able to see they are leading innovation.[7] They are in a position to influence, control and support the business with top-level IT systems. They have skilled people around them who understand the challenges and problems within the business and can come up with solutions. This is the key to delivering innovation and real change.

Top CIOs harness technology solutions that enable trusts to meet their objectives and are motivated by finding these opportunities. Martin Alexander says he has always been drawn to seeing how software can change business and is interested in developing solutions to people's problems, and in particular the challenges faced by the public sector.

He says: "I've spent my entire career trying to build solutions to people's problems. I want to support the organisation by doing the right thing for patients and for the public and all the things that the public think we don't do or could do better." His answer has been to bring engineering solutions to problems such as bed utilisation – by creating a patient flow system, for example.

For others, the motivating factor is simply combining technology with the work of healthcare professionals to make change. John Clarke, CIO at University Hospitals of Leicester NHS Trust, says: "Technology is the same in any industry. In the NHS you get almost instant feedback on how you're making a difference to direct patient care. I came from the private sector to the NHS. It's a service that everyone uses and you build an emotional attachment to it. There is something tangible in being able to do something on a Monday and seeing it in action on a Tuesday."

Cindy Fedell, CIO at Bradford Teaching Hospitals NHS Foundation Trust, came into the NHS from Canada's health system. She says the NHS is perceived much more positively abroad than by the UK media. She was motivated by her ability to operate in a strategic way. "It was a pre-requirement that it had to be a board position, as that is the only way to get anything done." However, the pace of using health informatics can be frustrating and trusts can hide behind the complexity of their organisations. Cindy says: "The NHS's decision-making processes are very complex and other countries have adopted technologies more successfully."

/ Why is it important to support top CIOs?

While the pace of change in technology is rapid, the importance of the CIO in some trusts is still not properly recognised

According to the Digital Health survey of IT leaders, in almost a third of NHS organisations the CIO or IT director is not even responsible for the IT budget. In many cases, IT falls under the remit of the finance director. When asked whether their current IT budget was sufficient to meet business priorities, more than 70 per cent said it was not, with just 13 per cent reporting it was sufficient.

The same survey found that many boards lacked an in-depth understanding of IT, although they recognised its strategic importance, with 80 per cent of NHS IT leaders surveyed agreeing with the statement: "The board relies on the CIO to inform them about IT."

When such weight is being placed on technology and systems to deliver improvements in care, quality and productivity, the fact that only a third of NHS IT directors/CIOs have board-level responsibility for IT is startling, as is the finding that only 40 per cent of CIOs have budgetary responsibility.

The results highlight the fact that many CIOs are not yet seen as trusted figures on the senior executive team. The significance of their role does not match the level of aspiration placed on them. This is why CIOs need to be experts in their field; they must truly understand the benefits informatics can bring and be able to explain them in a passionate and convincing way.

A top CIO can be a great agent for change, but to bring about this change they have to know everything that is going on – in particular where the organisation's pinch points are so they can offer a solution. For CIOs to thrive and to facilitate improvement, they can't be buried beneath another layer of management, such as finance or operations.

An example of the benefits of board responsibility can be found at West Hertfordshire Hospitals NHS Trust, where Lisa Emery was appointed to manage the IT strategy and ended up running the IT department. Initially the IT directorate reported to the finance director and didn't have exposure at board level. In her roles at previous companies, Lisa had either been on the board or was able to report at board level, so when she joined the NHS it felt like she had hit a ceiling in terms of decision making. Three years ago the role of CIO was created and Lisa now attends all board meetings and reports to the chief executive. She says: "We were very forward thinking when the role was created and essentially the trust agreed that high-quality information supports patient care." The new structure has helped her deliver significant benefits and having the ear of the board means the information strategy is understood and supported by a wider cohort of senior executives.

Being on the board gives CIOs leverage to secure innovation by identifying outside opportunities, working with new suppliers and being able to explain first hand to the board the benefits of such relationships. Given that today's CIO needs to be more business focused than ever before, there is a greater need to be more visible and have the ability to influence change.

This requires engagement throughout the trust. Adrian Byrne, chair of the Digital Health CIO network, says the engagement task is significant. "It means explaining your vision to people, and engaging with clinicians and the chief clinical information officer as well as the trust executive committee and the operational board. I like to think I can go anywhere in the organisation and speak to someone that I know. Unless there are a couple of dozen consultants you can speak to you are failing as a CIO," he says.

The issue of investment was raised by many of the CIOs we spoke to. Our online survey revealed that just 66 per cent of boards had been supportive when it came to funding for IT and innovation in health informatics.

CIOs argue that trusts must be prepared to invest to reap the rewards. Mark Hutchinson says CIOs aren't going to be able to deliver the gains that are needed without significant investment. "There will be challenges and problems on the back of this investment but we need to minimise the chance of failure. The wider organisation can understand informatics and how the benefits will impact operations."

Whether a board position is a prerequisite for success is open to debate. Some argue the CIO's ability to operate at a higher level is the key issue – in other words, seeing the patient as the customer and having a good understanding of technology, clinical systems and data. They don't necessarily have to be a specialist, but may

have a team of specialists sitting underneath them. The best CIOs understand the wider picture and know how to get their specialist team to perform to the best of their ability in order to create change and improvement.

CIOs are key to the delivery of day-to-day care and they need to have a focus on IT as well as on strategic change. If a director of another department, such as finance, has the IT role sitting within their remit, the main focus is likely be elsewhere and not on IT and the benefits that it can bring.

Cathy Francis says: "You need a senior person who is head of strategy, like strategy or operations with technology, to give it that wider perspective. You need to be able to influence and shape and you need to be integrated with the programme management office. People lose faith in IT when projects slip by the wayside."

To have influence, CIOs must be brave enough to say things forcefully and to be open when something is wrong. A top CIO will have a good reputation, nurtured through good relationships throughout the organisation. Just having a CIO on the board may not be enough; the right kind of person is needed to inspire the board members. This needs to be a trusted person who can have peer-to-peer conversations and bring informatics and technology right to the top of the agenda so that opportunities to bring about change are not wasted.

"You get almost instant feedback on how you're making a difference to direct patient care. I came from the private sector to the NHS. It's a service that everyone uses and you build an emotional attachment to it. There is something tangible in being able to do something on a Monday and seeing it in action on a Tuesday."

John Clarke, CIO at University Hospitals of Leicester NHS Trust

/ What are the qualities, attributes and behaviours of top CIOs?

Leadership was rated as the most important characteristic in our online CIO survey, and the ability to establish good relationships is also a key attribute

The majority of CIOs we spoke to recognised that relationships with the executive team are an important part of the equation. They also need to engage within their organisations (senior managers, clinical leads, department heads and the executive team) as well as externally. Effective relationship building requires good communication skills. In the online CIO survey, good communications skills were ranked second highest among the key characteristics of a top CIO.

The need to engage internally and externally is highlighted by Martin Alexander. He believes that to understand business priorities in the NHS, you have to understand healthcare. This means spending time in the field. He makes time to meet with district nursing teams or talk with patients about how they feel about assisted technology. He also allocates time to go on visits with the community nurses. He says: "I'm fundamentally an engineer and can bringing engineering principles to these problems, connecting technology with what healthcare professionals do every day."

Richard Rolt, CIO at pathology specialists Viapath, points out that, rather than sitting in an office writing emails, CIOs should be out and about pressing flesh. He thinks it helps to have an opinion, not just an IT one, but a health business opinion too. "If you don't then your conversation is going to be limited to your personal subject matter expertise," he says.

Out on the wards and in the board room, CIOs must be able to gain the confidence of those around them. Jason Da Costa, CIO at Warrington and Halton Hospitals NHS Foundation Trust, returned to the NHS from the private sector. He says: "Having a board post attracts a different type of CIO. You need a clear line to the board to enact and influence change successfully. At board level the perception has evolved; 10 years ago informatics might have got a short mention in the FD's report, but things have certainly changed. In a recent leadership meeting almost half of the conversation focused on safety, sustainability and the digital agenda."

Having good communications skills also means being able to explain to the organisation why it needs to invest in technology and information. CIOs should be able to explain highly complex and often technical matters to non-technical board members, enabling them to make informed decisions.

Top CIOs should not restrict themselves to dealing with informatics or technology – several other qualities and attributes are required to respond to situations they may find themselves in. Some may have worked their way through the ranks, or been brought in by the chief executive to make improvements, either from outside or from another department.

A CIO who has been brought in to address a specific issue or challenge will need resilience. They will need to learn the culture of the organisation to ensure a smooth integration.[8] They may have been brought in to make immediate changes, possibly due to the actions or sudden departure of a predecessor, or a failure of IT management.

CIOs have to be prepared for tough going according to Catherine Dampney. She says: "You need to be inspired and passionate about what you're doing as you need to be able to communicate to those who don't know about technology. A lot of passion helps – I have to be convinced that what I am putting forward is absolutely right."

As well as resilience, CIOs must be able to handle a large workload and be problem solvers. They are the professionals in the healthcare system who lead the conversation in the internal IT department about how to use the growing amount of data at the disposal of clinicians.[9]

A top CIO will quickly be able to gain a good understanding of their team, gauging capabilities and limitations in order to address performance gaps and spot any weaknesses. This means being able to lead and enable transformation in their own department before they can create it elsewhere.

As well as being able to resolve any issues in day-to-day operations, top CIOs must have the vision to develop a strategy, evaluating existing technology and current initiatives to see how they relate to business goals. They must be able to gain trust and rally team members to carry forward change.

Zafar Chaudry, CIO at Cambridge University Hospitals NHS Foundation Trust, recognises an increased focus on interaction with the business, securing board investment and developing business cases. He tries to identify business needs and then develop a solution; he doesn't want to get bogged down with operations. Funds are inevitably limited so he needs to be able to sell ideas. He says: "Twenty per cent of the CIO job in the NHS is sales. It is selling to internal customers – you need to show the benefit of bringing in a systems change."

Anthony Lundrigan, CIO at East and North Hertfordshire NHS Trust, believes CIOs need to know what good looks like. They need to be able to articulate the vision and how they are going to get there. "You need to be able to sell the vision to the business and set the strategy to achieve it."

Making sure the strategy can drive organisational change, as well as enabling technology, is imperative and this requires a good understanding and a willingness to challenge. However, good CIOs also know when they need to look to others for help. Without this broad overview they run the risk of falling into a comfort zone where they rely on only what they know about to make decisions. A top CIO will also be able to manage the expectations of an executive team that is looking to the IT and information department to improve the performance of other departments. As Andrew Haw says, "the informatics literacy of boards is incredibly variable", so CIOs must also be creative to provide the support needed for some organisations to make improvements in the light of budget and reimbursement cuts.

The ability to prioritise and focus on what the organisation needs, rather than introducing innovation for the sake of it, is important. CIOs also need patience, especially when explaining to colleagues that it takes time to deliver change, while strong relationships within the organisation will boost credibility. Ultimately though, winning backing and achieving success depends on their ability to articulate what good looks like by producing robust business cases that demonstrate how innovation can improve efficiency.

Qualities, attributes and behaviours	Examples
Ability to engage at all levels	– Building relationships with other providers in the community – Working with CCGs to help them understand performance anomalies – Developing relationships with leading clinicians
Good communication skills	– Articulating a vision to the board – Ensuring team members understand the strategic vision and the immediate priorities – Making the case for investment in innovative solutions – Explaining complex technical issues in a way that can be easily understood
Resilience	– Withstanding pressure from the executive team – Addressing any immediate concerns about performance – Dealing with criticism from staff in other departments
Capacity to handle workload and solve problems	– Juggling a range of projects – Contributing to discussions around performance and change management – Encouraging the spread of innovative ideas from within the department
Trusted and credible	– Convincing colleagues to follow a given course – Inspiring others with a passion for change and improvement
Willingness to challenge	– Understanding the bigger picture and questioning existing processes if need be – Having a detailed understanding of the trust's business – Working with the clinical body to address performance issues

What makes a top interim CIO?

The stakes are high for interim CIOs. Although they can be paid well for their expertise, in many cases employing an interim is a last resort and any problems are likely to have reached a critical point. When an interim is brought in the expectations are therefore often high and time is usually short, with the trust expecting results quickly.

However, the flipside is that the challenges interims face are entirely different to those encountered by permanent employees. Interims will work for more organisations, each with its own culture, environment and challenges. One interim CIO we spoke to said: "In three years I have worked for five NHS organisations and one private software company. You cannot get this level of exposure and experience as a permanent member of staff, and for me the experience has been invaluable and made me a better CIO."

Many of the behaviours and qualities are the same for interims as they are for permanent CIOs. Honesty and integrity are key attributes. The best interims are honest about what can be achieved and know that delivery is rarely dependent on them but on the employees who work for them.

Gaining the trust of staff and changing culture is not something that can be achieved overnight. It can take a minimum of three months before staff feel they can trust an interim and talk candidly about the issues they face. Top interims need to be patient. When they arrive at a trust staff can be frustrated and demotivated, and may view the interim with suspicion.

Ensuring good working relationships requires humility. Good interims recognise they rely on staff for delivery and team members should always be praised for their achievements. Being able to maintain a sense of objectivity is important, acknowledging that sometimes it is necessary to lose a battle to win the war. "Don't fall foul of focusing on one aspect that can't be done – move on to the bigger picture," advises one interim.

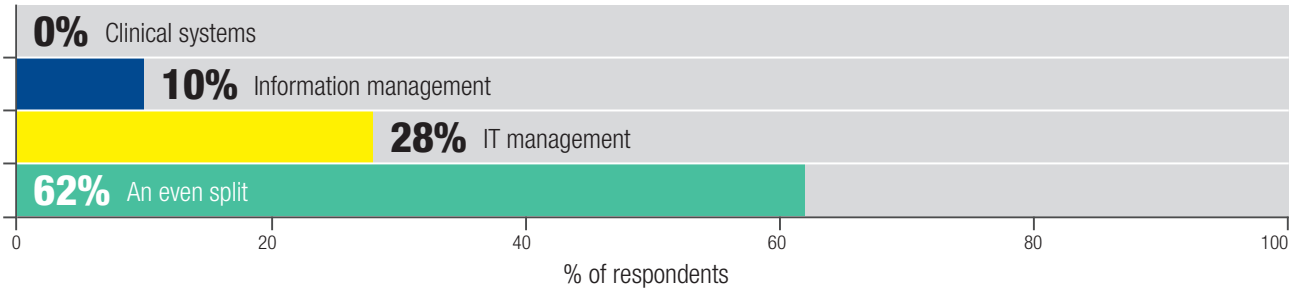
One area where many interims can struggle is keeping on top of latest developments, best practice and networking. Trusts rarely pay interims for any time spent networking, but the best interims will take time between contracts to network, seek out best practice and update their knowledge.

How do top interims gain board support?

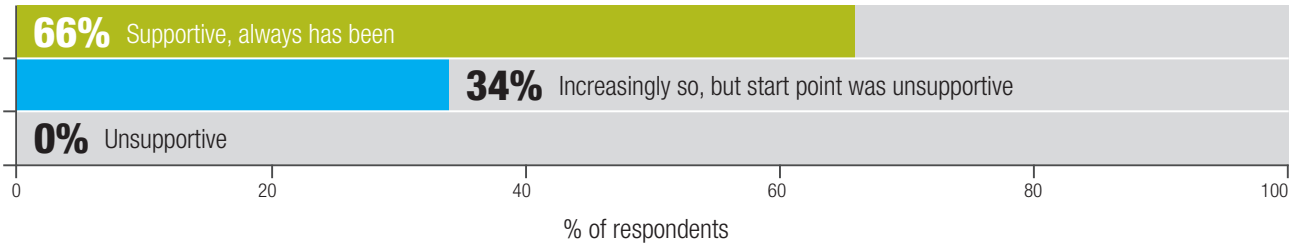
Most boards understand the importance of information and data to improving performance. However, issues involving data quality and validity can lead to running battles between the operational team and the information team. The board will often find itself in the middle of this battle, not really knowing who to believe. Good interim CIOs will bring the two factions together; agreeing metrics, indicators and figures is hard but well worth the effort.

/ Online survey: key results at a glance

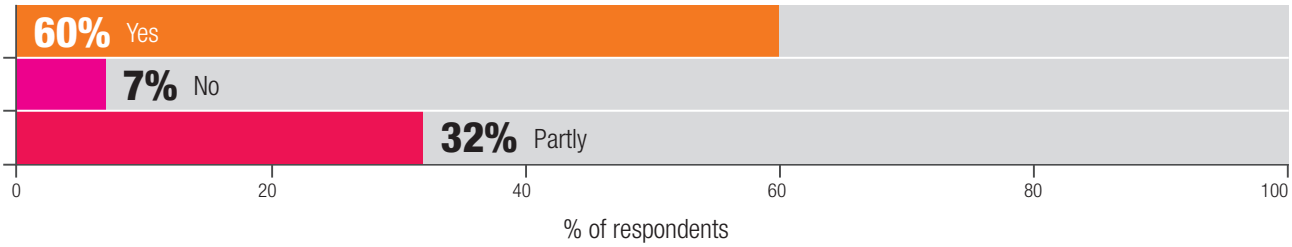
Where has the majority of your NHS informatics experience been gained?



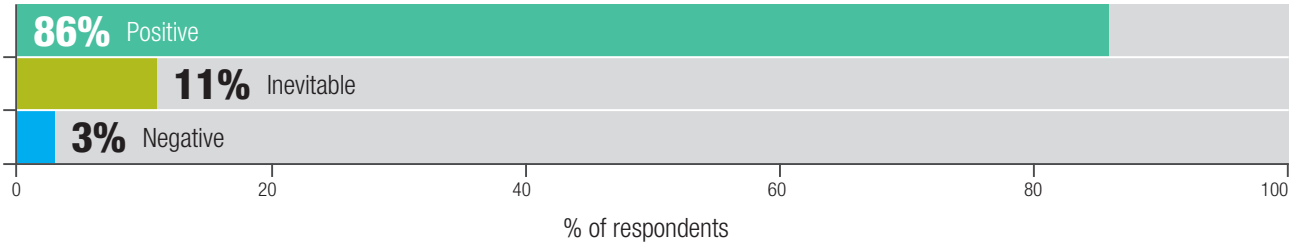
How supportive is your board to funding innovation for health informatics?



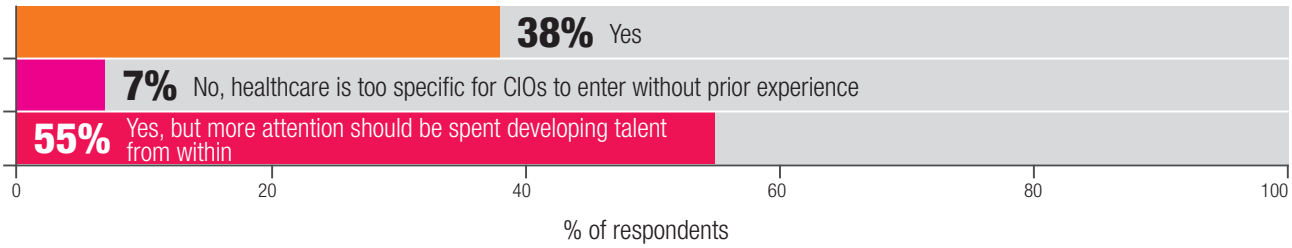
Is your IT service department using ITIL?



How do you view the pursuit to professionalise health informatics?



Should more be done to encourage talent from the private sector to enter NHS informatics?



/ What does best practice look like?

With a greater focus on the role of CIO it is essential that trusts look beyond their own walls to see what is working well

Each trust will have its own needs, depending on historical and demographic factors. However, sharing best practice with other organisations saves time and money.

Remarkably for large organisations in a state of flux, there seems to be some reluctance to share ideas that could yield improvement across the board. The NHS struggles to take good ideas and then duplicate them. Top CIOs realise that for change to be successful it usually has to be clinically led and not driven by the demands of software or other solution providers.

Top CIOs work to ensure staff across their organisations buy in to any changes, and highlight the importance of collaboration. Mike Jones, CIO at Northern Devon Healthcare NHS Trust, and director at IT research firm Gartner, emphasises the importance of getting key figures on side. He says: "What a medical director looks for is whether you have got staff involved."

Top CIOs will learn from what flagship organisations are doing, and do not limit themselves to the UK. They network globally to find like-minded innovators who can champion change with them. In this way they can learn about any mistakes that have been made as well as taking on the good ideas of others.

Cindy Fedell says: "We are doing a data-migration exercise; it is considered to be best practice to test a small amount of data first, but the NHS insists on migrating everything. This has led to failed migration projects. We need to learn from these examples."

Mark Hutchinson believes CIOs need to look globally to examine ideas and how they work. This also means sharing their visions with clinicians. "This will help persuade boards on decisions to help the patient. It doesn't matter whose idea it is as long as you can link it to patient benefits."

John Clarke also makes an effort to seek a global perspective on the use of technology in the health sector. He says: "There isn't really any sharing of best practice in the UK. In the old days the SHAs used to have a regional meeting once a month but there hasn't been one of those for five years. I've worked all over the place, and have lots of contacts at senior level around the world and in the UK. IT is the same as any industry in terms of tech and storage. We have a £900m turnover and we're looking to benchmark ourselves against similarly sized organisations."

Engaging with external organisations and companies and getting involved with forums and user groups are ways to share best practice. Attending conferences and taking up speaking opportunities can also help to share innovation, as well as learn from others. Such exposure can also help to build a reputation of being forward thinking and keen to take on new ideas.

A successful CIO should see engaging with other experts and colleagues as part of their everyday role. Joanna Smith dedicates a lot of her own time in the evenings to meeting with peers and sharing ideas. She also engages with third-party experts such as Gartner. She says: "You need people you can trust – you need a network that will challenge you."

CIOs have to be willing to learn and take advice from others if they want their trust to be successful. Tony Eardley says trusts don't share best practice. He thinks the NHS should have a culture of "do it once and then share it". Instead, it is often more a case of, "if it wasn't invented here then we don't like it". He says: "The good CIOs get the balance right and know they can learn from what other similar organisations have done."

Resistance to share ideas or communicate with others can lead to trusts stagnating when they could be learning and moving forward. Paul Clements, interim CIO at the Pennine Acute Hospitals NHS Trust, came back into the NHS in 2015 and says it was a big shock. "Things were more advanced at a previous trust seven years before I came back, which was really sad. I had expected things to move on. The infrastructure was the same – no change management and lots of projects that were all connected yet managed separately, with no communication."

Top CIOs foster relationships with academic institutions although, as interim CIO Ward Priestman points out, this depends on your organisation. "Teaching trusts have a well-developed relationship with academic institutions and this is a key part of the role. There will be clinicians with dual roles. NHS governance and academic ethos generally don't mix well so there may well be challenges."

Feedback from all the CIOs we interviewed suggests that although there is wide recognition of the importance of sharing best practice, in reality many trusts still operate in silos. Initiatives for sharing should therefore be encouraged and supported – top CIOs are genuinely hungry to learn from each other.

/ Where will the next generation of CIOs come from?

The career pathway to CIO is needs to be clearer. It is not a fully professionalised role, with CIOs coming from different backgrounds and lacking a common qualification

Although there is great potential to establish the CIO role as one of the most important jobs within the NHS, there are still questions to be answered. In order to get the best people in the future, do we need national standards and guidelines to set out what such people look like? What background should they have and does the role need to be professionalised to ensure the best candidates are coming up through the ranks?

Many argue that for the CIO to thrive and enable change and improvement, the role needs to be properly recognised. Digital Health is currently in discussions with BCS Health and the College of Healthcare Information Management Executives (CHIME) UK to offer the US-developed certified health CIO (CHCIO) qualification in the NHS to help overcome fragmentation and uncertainty.[10]

Digital Health will potentially partner to provide quality CPD through its health CIO leadership events. Work is under way to adapt the CHCIO programme for the UK; it would be the first of its kind for UK CIOs, for whom the lack of professionalisation may be creating a lag behind peers in other professions.

Gwyn Thomas is former chair of UK Council for Health Informatics Professions and was previously CIO for the Welsh Government. He feels that CIOs have been slow to rise to the challenge of providing professional leadership in the past but this is beginning to change. He says: "I think professional bodies have been a bit lax in promoting the value proposition for membership and also advocating the importance of independent registration as a critical part of being seen as a credible profession. In the past, the health informatics profession has been regarded as something of a 'lost tribe' compared with others – often reticent in speaking out with a strong common voice with something important to say that policymakers think is worth listening to."

He believes professionalisation will involve agreeing standards of best ethical practice, holding each other to account for achieving them and aspiring to build a pathway to a seat at the boardroom table, via natural career progression. He says: "It's time to overcome our innate passivity, which can tend towards victimhood at times. It's time to stop looking upwards for permission and time to start looking at each other to provide the collective leadership needed to take advantage of the digital revolution to improve public services."

Professionalisation could also ensure that CIOs are expected to learn from one another. Candace Imison thinks there is a gulf between technical expertise and clinical expertise, that CIOs may not always have expertise in the technology needed and therefore do not offer the opportunity for successful implementation of programmes. "Technology needs to be part of the broader organisational programme. Everyone has the best of intentions but a profound lack of understanding of each other.

"There is no training in place to help clinicians understand technology, or vice versa. A national programme could do more in this area, with a large pot of money being funded for developments. Professionalisation of health informatics would be more about getting funds in to support staff. The amount you would need to support training is relatively small; a lot of money is spent on agency staff at the point of implementation of systems."

Mark Hutchinson thinks not enough has been done to professionalise the CIO role. "We need to be able to describe the role to people that are doing it and to people on the executive board," he says. He also highlights a national shortage of graduate trainees as a stumbling block to nurturing the next generation of CIOs, "We need to reduce our failure rate of projects, but we need good people to do this."

Others point out that in order to encourage the next generation of CIOs, the role should ideally be a board-level appointment. This will give CIOs a team beneath them for day-to-day work while they set the strategy and vision for the future with the board.

Marc Farr believes the focus on technology is sometimes not helpful in this respect. He says: "There needs to be further thinking on how to label the role and whether we should really be

talking about chief clinical data officer instead of CIO, taking the focus away from IT at the top. A chief clinical data officer would be a strategic information position, with an IT directorate beneath. There does need to be a recognition of the differences between data and technology."

The next big question is whether future CIOs should come from the private sector or the NHS. A set training and career path could allow them to have the best of both worlds – a sound understanding of both technology and healthcare.

The NHS should certainly not be averse to employing CIOs from the private sector. They bring important skill sets that a CIO from the NHS may not have had the chance to develop fully. Marc Farr says: "Those that come into the CIO role from other sectors ask more questions, and delve into situations."

In our online CIO survey 38 per cent of respondents think more should be done to encourage talent from the private sector. A further 55 per cent agreed with this but thought more attention should be paid to developing talent from within the NHS. Just 7 per cent disagreed with encouraging talent from the private sector to come into the NHS.

But recruiting from the private sector is not necessarily as straightforward as it sounds, given the pay differentials between the NHS and elsewhere. One interviewee said CIOs are realising that other sectors of the economy work in a similar way; it's only the NHS that is still using outdated methods – such as posting clinic appointments to a patient's home rather than contacting them electronically – and this is because a lack of investment.

Giving CIOs the right support is an important factor in attracting future talent and this means having good teams of individuals working well together. John Clark says: "You have to have the right structure below you to allow the operational side to succeed if the person at the top is not super-technical. If you have senior qualified people they don't need micromanaging. You don't need super techie skills to be a CIO."

The next generation of CIOs should also be prepared to move around more to gain wider experience. Secondments are a good way to avoid being blinkered through a lack of exposure. Catherine Dampney would like to see secondments into suppliers and software companies to ensure CIOs understand the engineering and technology side. She says: "In the next two or three years we have to succeed and bring about the change. You don't want to be standing still. If we start to see change accelerating, then that will incentivise people. Healthcare is a huge growth area globally, so there is a pull-in for that, surely."

This investment in leadership and management qualities is just as important as technical understanding when it comes to developing future CIOs. In the North-West of England there has been investment in the profession with the Informatics Skills Development Network. There is a finance development across the region and a masters programme for aspiring directors. Such support – with a mentor, a coach and feedback from a line manager – is key to growing and retaining new talent.

Madeleine Szekely, head of clinical informatics at Bradford Teaching Hospitals NHS Foundation Trust and an NHS informatics programme graduate, says: "I think it is about focusing on developing the leadership qualities rather than technical expertise. The secret to developing that talent and who comes through is the key to getting more people who are prepared for the board."

Our interviews and survey have made it clear that successful CIOs of the future need to be identified and nurtured and are likely to come from a range of backgrounds. Efforts to develop the next generation should focus on individuals and their personal qualities and attributes as much as on technical skills and healthcare knowledge.

/ Conclusion

Given the extent of the progress we are seeing in the areas of technology and informatics, there is a significant opportunity for today's CIOs

The demand for good CIOs is here to stay and is being driven by targets such as those set out in the Carter Review. In addition, organisations across the NHS will quickly have to come to terms with growing financial pressures, forcing the hands of many trusts to place greater emphasis on technology and informatics in a bid to make healthcare delivery more efficient.

There are also other questions that need to be answered. Do our CIOs need to have technology or healthcare competencies, or should they be managers or strategists? The arguments for each are complex and the answer comes down to the needs of individual organisations. It seems clear that to embrace the power of informatics, a top CIO needs to understand the business and have a voice to contribute strategy to the board.

Information and data sharing is another area where the NHS has to improve to pave the way to success for current and future generations of CIOs. We have seen many instances where data-sharing initiatives have fallen foul of poor inter-NHS relationships and commissioning decisions that have not encouraged close working between organisations.

The NHS must shake off its history of working in silos and start looking to flagship trusts to find out what they do well. Sharing information and best practice – and not just between NHS bodies – is critical to success. It is time for the NHS to look outside its own walls to find out what success looks like. Technology and informatics is an area where the NHS is lagging behind, but where it should be thriving.

Our interviews also found that different approaches to the way CIOs report to the board have an impact on the role. In order to be taken seriously, wield influence and bring about change, the CIO ideally needs a place on the board, or at least regular access to it. Many of those we interviewed questioned whether a perceived lack of quality among today's CIOs is behind their being distanced from the board and not taken seriously.

Some argued it is essential that the role is professionalised and underpinned by structured support and training, guidelines and qualifications. Certainly, the very least required is a job description so NHS trusts have a guide to what they should look for in a CIO. Comparisons with other roles, such as financial directors, are not appropriate and leave CIOs looking like poor relations.

As for the skills, qualities and behaviours, top CIOs have a blend of skills. They are good communicators, resilient and combine the need for a technical focus with commercial and healthcare knowledge in equal measure. Top CIOs also understand their business and provide solutions to problems or bottlenecks as they appear. They know how to make change management work.

The role of the CIO no longer involves just being the senior IT manager. It's not simply about wires and boxes and keeping systems running. It's about passion for change and having a vision for the future. Most importantly, it's about being a storyteller, having the ability to influence board members and convince them that they need to invest. CEOs and boards need to make sure that the CIO is working alongside them. They are no longer just middle management, but more needs to be done to encourage CIOs to show how their departments can improve their organisation's efficiency, performance and outcomes. The fact is that, without a career path or qualification, it will be rare for the NHS to find someone offering all these skills together.

So how can the NHS attract the best talent? Inevitably most trusts will struggle to compete on salary with the private sector, so it is all the more important that they are prepared to give CIOs the tools and support that will satisfy the instincts that attracted them to the health service and enable them to make a real difference to patients. The window of opportunity for the NHS will not stay open indefinitely and it has to grasp the nettle to give current CIOs and the next generation every chance of success.

/ Interviewees for this report

Hunter Healthcare would like to thank the following for their time

Name	Organisation
Adrian Byrne	University Hospitals Southampton NHS Foundation Trust (chair Digital Health CIO network)
Alison Dailly	Central Manchester University Hospitals NHS Foundation Trust
Andrew Chronias	Central London Community Healthcare NHS Trust
Andrew Haw	Nottingham Healthcare NHS Foundation Trust
Anthony Lundrigan	East and North Hertfordshire NHS Trust
Candace Imison	The Nuffield Trust
Catherine Dampney	NHS South, Central & West CSU
Cathy Francis	NHS England South region
Christine Walters	St Helens & Knowsley Teaching Hospitals NHS Trust / Health Informatics Service
Cindy Fedell	Bradford Teaching Hospitals NHS Foundation Trust
Gwyn Thomas	Chair, UK Council for Health Informatics Professions
Heather Cook	Mid Yorkshire Hospitals NHS Trust
James Rawlinson	Rotherham NHS Foundation Trust
Jason Da Costa	Warrington and Halton Hospitals NHS Foundation Trust
Joanna Smith	Royal Brompton & Harefield NHS Foundation Trust
John Clark	University Hospitals of Leicester NHS Trust
Lisa Emery	West Hertfordshire Hospitals NHS Trust
Madeleine Szekely	Bradford Teaching Hospitals NHS Foundation Trust
Marc Farr	East Kent University Hospitals NHS Foundation Trust
Mark Gregson	Bradford District Care NHS Foundation Trust
Mark Hutchinson	University Hospitals of South Manchester NHS Foundation Trust
Martin Alexander	South Tyneside NHS Foundation Trust
Mike Bone	Formerly Great Ormond Street Hospital NHS Foundation Trust
Mike Jones	Gartner, formerly Northern Devon Healthcare NHS Trust
Paul Charnley	University Hospitals of Morecambe Bay NHS Foundation Trust
Paul Clements	The Pennine Acute Hospitals NHS Trust
Phil Turnock	NHS HBL ICT
Richard Rolt	Viapath
Richard Slough	Leeds Community Healthcare NHS Trust
Shauna McMahon	Frimley Health NHS Foundation Trust
Tony Eardley	The Royal Orthopaedic Hospital NHS Foundation Trust
Vikki Lewis	Lancashire Teaching Hospitals NHS Foundation Trust
Ward Priestman	Great Ormond Street Hospital NHS Foundation Trust
Zafar Chaudry	Cambridge University Hospitals NHS Foundation Trust

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8/ The top six priorities of a new healthcare CIO. Reda Chouffani, 2015

9/ What is a healthcare CIO? Margaret Rouse, 2015

10/ Digital Health, BCS and CHIME partner on CIO qualification. Digital Health Intelligence, 2016

“Having a board post attracts a different type of CIO. You need a clear line to the board to enact and influence change successfully. At board level the perception has evolved – in a recent leadership meeting almost half of the conversation focused on safety, sustainability and the digital agenda.”

Jason Da Costa, CIO at Warrington and Halton Hospitals NHS Foundation Trust

WHAT MAKES A TOP CIO?

/ 2016

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Executive talent for the healthcare sector

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