

CIO perspectives on digital healthcare

Norway, Sweden and Finland

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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 eight CIOs across Norway, Sweden and Finland, each of whom we interviewed in January-March 2017, 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 8 **CIOs need to get stakeholders, and especially doctors, on board for digital health; and**
- Page 10 **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 Europe, 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 Nordic countries are developing technology solutions which are already changing the way in which clinicians, citizens and patients manage and make use of the healthcare system. Many CIOs are evolving their strategic thinking to incorporate this digital transformation as a core part of their overall plans. Overall, the 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 two types of CIO: executive and operational

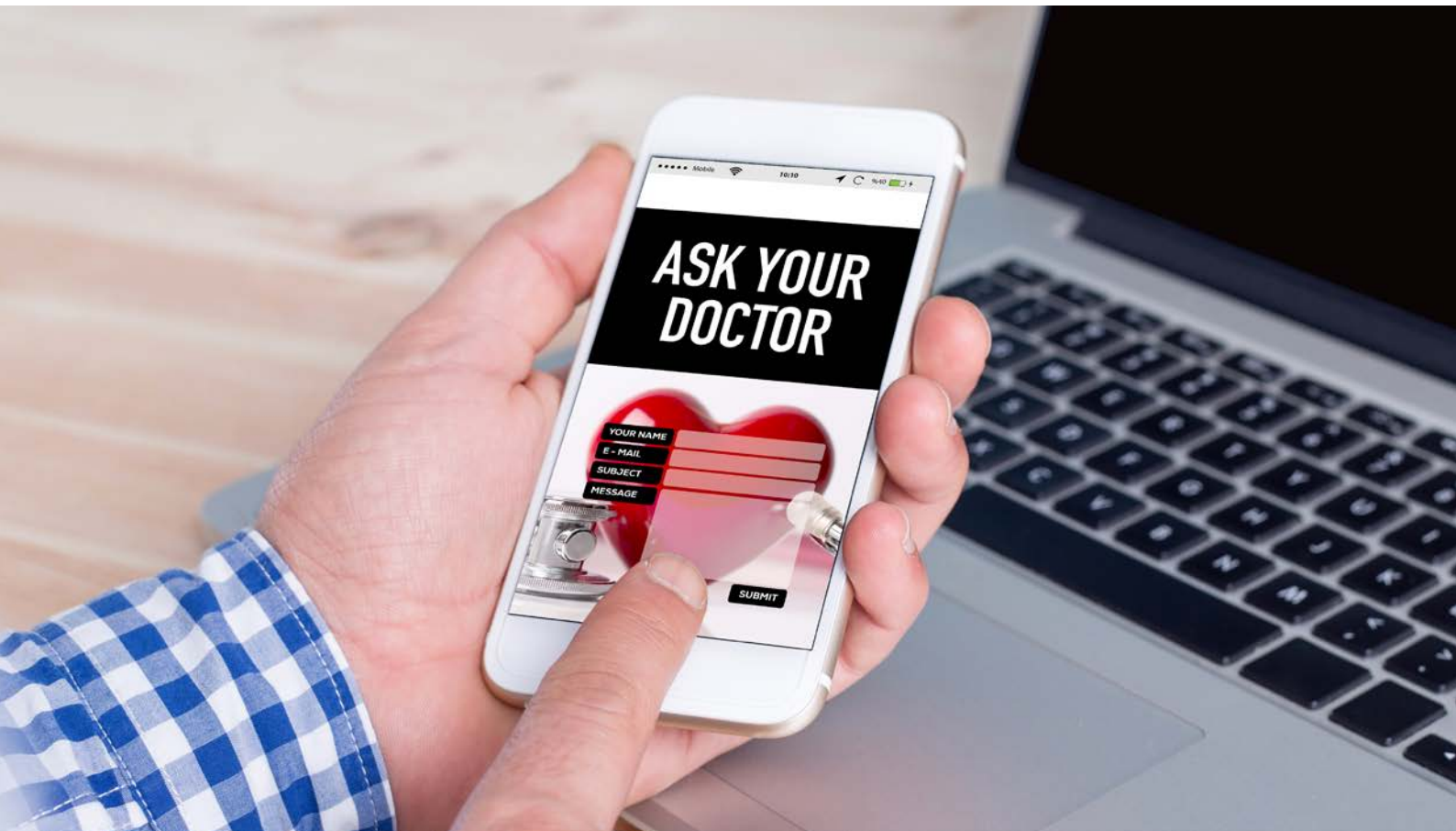
In the Nordic region, as in the rest of the geographies we covered as part of this survey, we saw a full range of personalities and management styles across the CIO functions. We have characterised the 'two types of CIO' as follows:

- **Executive CIOs** cover the change management aspect of the digital transformation. Less knowledgeable about specific technological and operational matters, their expertise is instead focused on changing the culture and working practices of the organisation as a whole. Often their prior experience is outside of the healthcare sector altogether; from banking, perhaps, where a similar digital transformation has already been undertaken. They base their decisions and priorities around business fundamentals rather than day-to-day operational realities.
- **Operational CIOs** instead look in more granular detail at the IT infrastructure that surrounds them. Their job is to keep the servers standing up and all parts of the estate running as smoothly and seamlessly as possible. They are less concerned with business management, despite perhaps being entrusted with decisions on large-scale business issues.

Within the Nordic region, a large proportion of the CIOs we surveyed saw themselves as responsible for a shift in organisational culture, as well as their team's day-to-day operational efficiency and uptime.

Within the private sector in particular, many CIOs did not have extensive healthcare experience prior to their appointment. Some came from other sectors, and some from positions where they were responsible for the sort of organisational change that is necessary for healthcare.

All of the surveyed CIOs were on their executive board in some capacity – although it should be stressed that there are often layers of executive board, and the CIO function was not always at the very highest table. All agreed that it was crucial for executive decision-makers, including the CIO, to get together regularly to make sure that key technological and transformative decisions are politically aligned with the leadership. There was some reservation about this in some cases – executives without a full understanding of technological issues may 'take ideas and run with them', to the detriment of what is actually realistic or desirable, but an executive presence of some kind is crucial.



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 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 Norway, Accenture's 2015 Doctors survey in Norway

Innovation to order

One of the starkest splits between our surveyed CIOs was on the question of innovation. Most innovation, it was reported, comes from outside the organisation – a lot of it from vendors. There are barriers to innovation from outside, however; not always being familiar with the local aspects of the healthcare business, EMR software vendors often underestimate – or misjudge altogether – the needs of both doctors and patients. Such vendors may not be able to submit ideas that are relevant if they are coming from outside health and social care altogether, as many of them are. Bridging this gap often requires detailed explanations, and even this may not be sufficient. In this case, a more proactive approach from within the organisation is needed.

Geographical challenges - and opportunities

The Nordics region is hardly an ideal landscape on which to build a cost-effective healthcare network. In northern Norway in particular, with extremely low population density and difficult terrain between towns and villages, this has offered challenges for doctors often needing to travel great distances to patients.

Remote care offers a huge opportunity in this regard, and northern Norway has led the way in introducing remote care options for patients and clinicians. Across Sweden and Finland too, remote care is seen as a fundamental healthcare service, rather than a nice-to-have luxury. Patient accessibility to care is improved a lot, and the practice is now extending outside of primary care functions into secondary care (mental health, for example).

Coupled with the issue of how to serve remote regions is the question of how to link regions together. Regional integration is a fairly major concern for many of our CIOs, and there are disagreements, particularly between public and private healthcare providers, over how to incorporate national-level digital health services into local healthcare needs. Reportedly, private care providers are more inclined to use national services, while the public sector instead prefers local solutions that are more difficult to integrate with national infrastructure.

At a national level too, there are discrepancies in how public data is structured and accessed. Finland, for example, has a three-layer system: a national level, area level, and community level. Data sharing is challenging across layers; some data is shared nationally, some area-wide, and some only within the individual community. Particularly when working with best-of-breed systems, integrating these layers of data sharing can be difficult; and even if not, it might be beneficial to keep further data, or even metadata, to flag the existence of more data that is inaccessible at the current level.

Data sharing is, in some cases, subject to legal and ethical barriers, and handling these restrictions while ensuring the right set of information shared is tricky. There is also an administrative burden on the clinical staff to be managed.

This issue in particular highlights the need for a strong knowledge base across the CIO function, and strong links between the information and clinical sides of the organisation. Strong communication pathways will allow stakeholders to make it clear what information they need, and what information they are obliged to withhold.

“The traditional EMR vendors say they will be the open platform of the future, but they don’t understand exactly what and how much data we would need. For a comprehensive dataset that we could plug into an API, a conservative estimate is that we would need 30,000 data points. This isn’t necessarily something we can easily explain, though.”



Chief Medical Information Officer,
Sweden

“It is good to have laws of this kind in place. However, if you step into the shoes of the clinician, they are frustrated with the requirements to fill out paperwork, which they feel takes away from the care of the patient.”



Toni Suihko
CIO, South Karelian social welfare
and healthcare district



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?

Listening as well as innovating: feedback channels for doctors and patients

Embedded within a team of like-minded individuals, the issue of perspective is a tricky one. Often the view from the CIO's seat is packed with detail: with performance targets, executive directives, and transformational plans. Within this environment, the truly important perspectives – those of the doctors and patients – can be lost.

CIO perspectives on the extent of the feedback they receive from doctors and patients differ widely. Many felt that doctors gave straight-talking, blunt feedback to new apps and products that had been developed. Despite this, some felt that doctors were not proactive enough in providing ideas and innovations in their areas of expertise.

Our survey suggests that doctors can provide useful input into product development, provided that sufficient care is taken to have an in-depth conversation about their requirements. For many doctors, IT is not an extensive part of their training – or even a part of their training at all – making communication difficult. Perhaps tellingly, much of the most fruitful clinical involvement has stemmed from one-to-one feedback in the context of personal relationships nurtured over time. Nevertheless, there was still a feeling that many doctors were not 'getting' what was being proposed, and made little effort to engage with the development process. This is perhaps unsurprising, given the lack of incentives (financial or otherwise) for doctors to engage. Few doctors get any credit or criticism for their involvement, and there is little knowledge of the extent to which design, planning and execution will differ.

Patient feedback has not been incorporated to the same extent. Some of the most extensive feedback has come from 'beta' builds of government portal websites, which include a channel through which patients can provide feedback on the service or the website itself. However, this is often not used to its potential, and many of our surveyed CIOs suggested that patient feedback is often difficult to incorporate within existing business models. Much of the feedback reportedly lacks an appreciation of informatics value chains and competing priorities within the healthcare ecosystem.

Then there is the question of the danger of 'information overload' for the patient; the doctor's role is often to curate the available information into a usable format for the patient.

"What is needed is a bigger push from clinicians on new solutions. An example is pathology, where we have seen a lot of new digital services. Why doesn't anyone ask for them?"



Norwegian CIO

"Patients are always the best people to talk about the patients' experience. But weighing and interpreting the results is the job of the clinician. EHR access has been constant for a few years here in Finland, but there are layers of maturity here - is the data available to both patients and clinicians? Is it user-friendly?"



Jari Renko

Chief Technology Officer, Apotti



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?

Bridging the gap: the CMIO/CCIO function

Our Nordic interviewees encompassed the CMIO/CCIO function (Chief Medical/Clinical Information Officer). After the success of the CCIO role elsewhere – particularly in the UK and Ireland – many of our interviewees saw the role as a crucial bridge between the medical and informatics sides of the organisation. The CCIO role is a tricky one to recruit for – potential candidates need a strong understanding of the clinical side along with a keen technological and transformative eye, and a clear ability to communicate between those two worlds. But the rewards can be great; a CCIO can allow doctors and other stakeholders to see the challenges faced by the organisation from an IT perspective, while those in informatics can gain insight into the day-to-day reality for patients and doctors alike. This is made slightly easier across the region by government initiatives that allow (and in some cases, obligate) all public sector employees – including those in health – to take technology courses.

In Sweden in particular, there is a growing acknowledgement across the healthcare system that multi-disciplinary collaboration and the establishment of new capabilities will be critical to enable fully digitised care pathways and patient orientation. The emergence of the CMIO/CCIO role, along with the Chief Nursing Officer, is one increasingly visible expression of this development across regions and larger hospitals.

By contrast, those without a CCIO function were conscious of a lack of innovation from within their organisations. This is not necessarily a major obstacle in and of itself – innovation can come from outside as well – but they felt it limited take-up of new technologies and processes. If everyone is siloed too strictly, the lack of overlap between job functions and responsibilities can mean that a working relationship between different teams can be difficult to maintain.

COUNTRY PROFILES

Norway



Norway’s investment in health IT infrastructure is among the highest in the world per capita. Accordingly, CIOs in Norway do not talk about funding constraints in the same way CIOs in many other parts of the world do. The money is there – it just needs to be channelled in the right ways.

Part of it is training – informatics, and IT more generally, was thought to be under-represented in Norwegian doctors’ training curriculum. This will need to be transformed over the course of the next few years – the benefits are not only in terms of IT proficiency, but in terms of working culture as well. As doctors get more used to IT being a frequent and necessary part of their daily routines, future health IT initiatives become easier, both to initiate and to follow through on.

The eHealth Directorate is responsible for all national governance issues, and many initiatives in this realm are digital. Within the directorate, there are signs that this kind of working culture is in place – all ministry employees receive technology training, as is standard across government ministries. The challenge now is to integrate the Directorate’s vision with that of local stakeholders across the country.

Sweden



Like Norway, Sweden now has a clear framework for eHealth over the next decade. Launched last year, the Vision for eHealth 2025 sets out a clear roadmap for Sweden’s digital transformation – although little funding was distributed to local counties to support its execution.

Again, the question of its implementation will depend on smaller-scale stakeholders. Sweden is one of the most technologically literate countries in the world, and large sectors of the country’s business environment have digitalised their processes and activities. The healthcare tech startup scene in particular is vibrant, which is a key change driver for some of the more traditional business structures in public healthcare. One disagreement that was highlighted in the interviews was between national digital health services favoured by many private providers and less integrated, more regional solutions that public healthcare providers often use – although most in the public sector would agree that national and regional systems should complement each other through better integration.

With such a high level of innate technological innovation, the question of perspective is crucial to the overall effectiveness of the new services offered by the digital health transformation. The CIOs across Sweden will need a keen sense of whether a new service is useful to patients and doctors, and whether their perspective has been sufficiently taken into account.

Finland

Finland was the first country to consolidate a summary of key EMR data at a national level, which has given the country a firm basis on which to build the rest of its digital infrastructure. Much of the future challenge, however, comes from best-of-breed systems, many of which retain data at a local level, but not a national level. The inter-relatability of the available data then becomes crucial, to ensure that it generates a full picture of the patient's medical history and any relevant contextual information.

Remote care is becoming a fundamental service for many Finnish hospitals, and many of the more advanced organisations are actively trialling both wearables and devices with similar characteristics to wearables on hospital premises -- respirators and oxygenisation meters, for example -- that simplify the overall flow of data and break down barriers of space and time.

In Finland, the technology and resources are clearly there. The challenge going forward will be to move personnel beyond old-fashioned silos and into a new healthcare ecosystem.





CONCLUSIONS

Across the Nordic countries as a whole, there is a large amount of public funding of healthcare, in comparison with similarly sized and structured economies. This funding has reaped rewards in terms of progress towards the digital transformation. However, the money needs to be channelled effectively. To do this, CIOs across the region will need a strong business sense and the resolve to push through transformation objectives from beginning to end. They will need a strong communications skillset, to bridge the gaps between those in IT and the clinicians. And they will need a strong sense of when to push through on innovations, whether they come from within or from outside.

The CIOs we surveyed felt that their organisations were moving in the right direction on these points. The main barriers were largely cultural; too many individual silos and not enough cross-collaboration between teams and functions. Accordingly, finding or training people who can fulfil several requirements in terms of skillset – ranging across healthcare, informatics, IT, and organisational management – can enhance the CIO's capability to overcome these barriers and enact a genuine transformation.

CIO SURVEY - GEOGRAPHIC COVERAGE





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