



A Paradigm Shift in Plain Sight? AI and the Future of Healthcare in the Nordic States

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Abstract

All the Nordic states (except for Iceland at the time of analysis) have published a national artificial intelligence strategy (NAIS) document. The NAISs provide a window through which to view a consolidated point where states set out a socio-technical imaginary ostensibly focused on the impact of AI on the national society but, in so doing, communicate present-day value-laden assumptions. These future visions see an expansion in the scale and scope of private-sector-driven AI applications in healthcare provision as inevitable, positive, and justified based on a promise of efficiency. In so doing, the NAISs institutionalise a shift in how issues of participation, deliberation, and inclusion in health are structured in the future. The article asks what kind of ‘welfare’ the NAISs present for the Nordic region with respect to the governance, role, and ownership of AI healthcare. In so doing, it reveals how the NAISs provide a vehicle by which to enable a paradigm shift in state–market relations that is, nonetheless, hidden from political scrutiny through its technological futurism.

Keywords

Nordic welfare, artificial intelligence, healthcare, public, private

Introduction

Nordic states (except for Iceland) are often seen as trendsetters in AI with a very high level of AI readiness (Silo AI, 2021). One aspect of this has been their early adoption of national artificial intelligence strategies (NAISs). Sweden was the first to do so in 2018, followed by Denmark and Finland in 2019 and finally Norway in 2020. The NAISs provide a window through which to view a consolidated point where the Nordic states set out and emphasise ‘public sector decision-making in all aspects of artificial intelligence (AI) governance, from the regulation of third parties, to investments in national ecosystems and the direct adoption of AI in the public sector’ (Wilson, 2022, p. 2). As political imaginaries, NAISs frame the legitimacy of current political decisions and future developments for AI in society.

The article looks to the NAISs as visions for the future of healthcare in the Nordic region. Existing research has identified the importance of NAISs in the Nordic region (Tucker, 2023), and that more focus needs to be given to the cultural frames and values utilized

(Robinson, 2020). As will be shown, the Nordic NAISs present a vision in which the expansion in the scale and scope of private-sector-driven AI applications in healthcare provision is inevitable, positive, and justified based on a promise of efficiency. More broadly, there is also concern that the NAISs are being used to establish neoliberal models as the only way to regulate AI for public goods, watering down alternative and non-market understandings of public participation and engagement in AI (Wilson, 2022).

Healthcare is particularly important, being seen as ‘an integral part of the welfare state model in all Nordic countries’ (Magnussen et al., 2009, p. 6). As the article outlines, healthcare has long since been shown to be tied closely to its societal context, both with respect to the relationship between political regime types and – more importantly – the impact of societal factors on human health. Healthcare, as discussed in the article, is a political field in which values and state–market relations impact which, and how, individuals are treated.

Applying awareness of health’s societal context to the Nordic NAISs, the article identifies the underlying values and social relations contained within. Importantly, as will be discussed, in the Nordic NAISs there is a predominance of market-oriented values in which private actors are seen to dominate, with healthcare turned into a consumer service. While the merits of alternate financing models can be debated, by adopting such a one-sided vision within the Nordic NAISs, the article argues that important political space is being foreclosed to the extent that the collective vision they contain can be fairly described as a politico-economic paradigm shift that is both publicly visible but made practically invisible through being framed with reference to abstract futuristic technologies. Noting this is important for understanding both the development of AI in healthcare within the Nordic countries as well as questioning why certain visions are excluded, and others made dominant.

Healthcare and the Nordic Welfare Model

The term ‘Nordic welfare model’ reflects that, when compared to other advanced economies, the Nordic states have similar social and healthcare policies. The model, which is rooted in a social democratic welfare state, ‘relies on the principle of universalism in promoting citizens’ well-being and public policies emphasising social cohesion’ (Kokko & Kork, 2021, p. 5). The narrative of the Nordic welfare model, which has been referred to as its ‘ethos’, speaks to an era where the welfare states were being guided by the principles of universalism, social resilience, and inclusion (Hellman et al., 2021, p. 125). This approach has positioned the Nordic states as prominent states utilising the development and implementation of public health policy focused on reducing societal inequalities within a tax-funded model (Raphael, 2014, p. 7). This can be understood by looking to the broader branding of the Nordic states internationally, what Browning (2007) refers to as ‘Nordicity’.

Yet, the public health sector in the Nordic states has not been immune to challenges. Since the 1990s many aspects of the Nordic welfare model have been replaced with market-oriented practices along the lines of ‘New Public Management’ (NPM). The adoption of NPM sits at odds with the domestic and international image of the Nordic states, where, as Kongshøj writes, what ‘has been distinctly Nordic [...] is the degree to which local government (municipalities or counties) has been responsible for health care with some degree of state funding’ (2014, p. 25). However, both left- and right-wing governments have adopted such policies. The degree of implementation varies greatly, with, for example, Denmark acting only superficially, but Sweden incorporating NPM throughout its public decision-making systems (Hall, 2013). Overall, NPM reforms have shifted many aspects of Nordic public decision-making over to technocratic bodies and away from political accountability (Hall,

2013; Strange & Askanius, 2023). Stenius and Storbjork see the increase in market-oriented welfare regimes in the Nordic states as altering public procurement regulation to become a 'struggle between the market logic and the welfare logic' (2020, p. 6).

One can see this very clearly in how the Nordic public health data, which was closely linked to the Nordic welfare state, is increasingly being imagined as a goldmine to be exploited for economic growth and the development of the private sector (Tupasela et al., 2020). Where there exists research on the datafication of public administrations in the Nordic region, we see little citizen engagement, but rather top-down technocratic and paternalistic processes (Broomfield & Reutter, 2022).

In the public arena, NPM reforms in healthcare have been framed as cost-saving and efficient, justified as necessary by an ageing population, the growing cost of healthcare, increasing expectations, and the individualisation of healthcare. This has led to national and regional variation and divergence in public health policy, including privatisation of aspects of healthcare. Private for-profit services have become increasingly prominent within the Nordic public healthcare setting, such as private residential care for children, but still the broader system is seen as 'public' and not for profit (Shanks et al., 2021, p. 128).

For political debates both within and about the Nordic countries, nevertheless, there is an overwhelming narrative that their welfare tradition remains strong. Almost all Nordic politicians frame themselves as publicly supportive of the Nordic welfare model, regardless of their policy positions, with many of the right-wing parties presenting economic reforms and anti-migrant policies as necessary to protect that welfare model. The NAISs provide a consolidated point of entry to see how these often contradictory narratives play out within the context of a future imaginary around AI.

Politics of Healthcare

Human healthcare is significantly determined by political factors (Braveman & Gottlieb, 2014). The relationship between living conditions, education level, and job precarity is well established (Benach et al., 2014). The withdrawal of such societal goods has also been used to undermine the life conditions intentionally for individuals due to, for example, their status as migrants as part of efforts to deter them from entering that society (Ruiz-Casares et al., 2013). The impact of residency status as well as marginalisation in healthcare was seen during the COVID-19 pandemic, where policies intended to limit societal access for key groups proved highly detrimental for efforts to control the virus (Dalingwater et al., 2023). Societal determinants of health are also often seen to cross generations with, for example, a woman's education level proving a key factor in the future health of her children, regardless of whether living in an advanced economy or developing state (Balaj et al., 2021).

Not only is human health impacted by societal determinants; the example of marginalisation shows how healthcare serves as an interlocutor between individuals and society. Healthcare is tied closely to societal types, with variations in financing – such as between private insurance-based compared to tax-funded models – often seen as synonymous with the state's broader politico-economic character. Efforts to improve population health often overlap with broader social development policies. Health policies venture into themes such as 'equality' and 'equity' as practitioners attempt to overcome the issues of inequality and injustice that limit healthcare access for marginalised groups (Rosas et al., 2022). Campaigns for universal health coverage have frequently encountered resistance due to the overlap with politico-economic issues, as seen markedly within the United States and long-stalled efforts to widen tax-funded healthcare (Birn & Nervi, 2019).

In several countries there has been criticism that individuals in need of healthcare are treated as ‘consumers’ within a market model of healthcare, co-opting the patient to become a driver of a neoliberalisation of healthcare (El Enany et al., 2013). That shift has been exacerbated in several cases where AI has been implemented in healthcare, including issues such as data privacy, accountability, but most of all in core issues of equality and equity where there have been proven cases of developing bias and other problems potentially limiting access to healthcare (Norori et al., 2021). The visions through which AI is developed in healthcare shape not only the hospital context but speak to the notions of what constitutes a ‘good’ society, requiring critical scrutiny by which to identify the values framing those imaginaries and the power relations they embody.

Methodology

Here the Nordic NAISs are approached in line with Wilson, identifying the principles, policy frames, and values they contain as ‘a consolidated point of reference for public sector decision-making in all aspects of AI governance, from the regulation of third parties, to investments in national ecosystems and the direct adoption of AI in the public sector’ (2022, p. 2).

The official English-language translations of the NAISs of Denmark, Finland, Norway, and Sweden were used.¹ These were officially translated by their respective states, enabling comparison through being in the same language. The documents included: Denmark’s NAIS, ‘National Strategy for Artificial Intelligence’ (Denmark, 2019); Finland’s NAIS, ‘Leading the Way into the Age of Artificial Intelligence: Final Report of Finland’s Artificial Intelligence Programme 2019’ (Finland, 2019); the Norwegian NAIS, ‘National Strategy for Artificial Intelligence’ (Norway, 2020); and two documents for Sweden which collectively form the Swedish NAIS – the ‘National Approach to Artificial Intelligence’, published by the Government Offices of Sweden in 2018 (Sweden, 2018), and the Swedish government’s innovation agency Vinnova’s report titled ‘Artificial Intelligence in Swedish Business and Society – Analysis of Development and Potential’ (Vinnova, 2018).

To be clear, these are not legally binding policy documents, and, given the lack of existing national AI regulations, we cannot assess their policy impact. Further, they exist within socio-political and economic contexts, including that of digitalisation strategies at a national and regional level, and as such form just part of a wider nexus of social practices.

The article contends that they are important expressions of the states’ vision capturing the elite-level institutional discourse (Dexe & Franke, 2020). Through describing a future narrative of desire and aspiration the NAISs are what Jasanoff has called ‘socio-technical imaginaries’ – ‘collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology’ (2015, p. 3). Socio-technical imaginaries in the NAISs are important to explore as they not only shine a light on publicly performed visions of desirable futures, but they also normalise and legitimise certain current political choices (Ossewaarde & Gülenç, 2020) and fictional expectations in the economy (Beckert, 2013).

As established earlier, healthcare is highly political. Key to this is the issue of governance as well as the economic structures determining how individuals receive healthcare. Conse-

1. The Icelandic NAIS would have been included; however, when the research was undertaken in 2022 it had not been formally published.

quently, the analysis focuses on three core aspects when identifying how the NAISs narrate the role of AI in healthcare, these being: accountability and governance of AI in healthcare; the role of AI in healthcare; and the relationship between state and market within AI in healthcare.

The NAISs were coded using NVivo software focused on references to healthcare. This included the keywords: well-being, medicine, health(care), disease, illness, medical, diagnosis, cancer, nurse(s), physician(s), MR images, patient(s), and doctor(s). These codes were then put in a timeline, with only those referring to a future imaginary included in the analysis. To understand the underlying political content, the analysis focused on the three core aspects outlined above.

Findings

Accountability and Governance of AI in Healthcare

In the Danish NAIS the responsibility for AI's role in healthcare rests on clinicians:

Artificial intelligence should help us to analyse, understand and make better decisions. However, the technology cannot, and should not, replace people or make decisions for us. For example, a physician should still make the final diagnosis for a patient (Denmark, 2019, p. 7).

The reason for this was said to be that trust can only be between people, and the use of AI to make certain decisions risked 'compromising social values' (Denmark, 2019, p. 7). However, no such clear limitation in the role of AI was specified in 'supporting more targeted efforts in the local healthcare system' (Denmark, 2019, p. 62). The development of 'responsible AI [...] particularly for patient treatment' was noted as a 'mandatory principle' (Denmark, 2019, p. 64). To achieve this, 'citizens, patient associations and Danish businesses should help set the course in close collaboration with the health authorities', a course which 'must also be within the legislative framework set by the Danish Parliament [...] regarding balanced and responsible use of health data' (Denmark, 2019, p. 64).

Regarding the development of AI in healthcare in Finland, the NAIS states that 'the pace of change will greatly depend on regulation and stakeholders' attitudes' (Finland, 2019, p. 34). When discussing its realisation, Finland, like Denmark, looks to achieve something between 'the enterprise-driven U.S. model and the administration-driven Chinese model' with a balance struck 'from the perspectives of individuals, society and companies, enabling also well-being and growth' (Finland, 2019, p. 52). Also, like Denmark, the role of the physician in decision-making was highlighted.

For Norway, the regulatory framework is set out as the major limiting factor, noting that '[t]here may be a need to develop regulatory frameworks in some health-related areas before testing of methods based on AI takes place' (Norway, 2020, p. 22). Unlike Denmark and Finland, for Norway AI integration in healthcare requires that the regulatory framework be proactive rather than reactive. However, like Denmark and Finland, the decision-making role of the healthcare workers was highlighted as a red line, noting that '[a]lthough the scope of automation and autonomous tools will expand in the health sector, health personnel will still be responsible for ensuring proper provision of healthcare' (Norway, 2020, p. 23). It is interesting to note that while Denmark and Finland specified that it was clinicians or physicians who would be navigating AI inputs for decision-making, for Norway a much broader term of 'healthcare workers' was used.

In the Swedish NAIS the limitations set are the need for '[s]afe, secure and ethical consideration' which 'should be included at the early stage of design of AI in health, and not an afterthought' (Sweden, 2018, p. 5). Demand from the public and politicians for transparency of AI in healthcare is claimed to be a 'goal conflict' where transparency must be a trade-off for better 'quality of recommendations, forecasts, diagnoses and decision support' (Vinnova, 2018, p. 69). A significant limitation for the application of AI in healthcare was seen to be existing regulations, which were commonly framed as restricting innovation. One area of this regulation seen as particularly problematic was public and private access to public healthcare data, a limitation justified based on the requirement that 'patient's privacy must be maintained for this sensitive data' (Vinnova, 2018, p. 40).

Role of AI in Healthcare

In Denmark the future role of AI in healthcare is seen as being to 'help physicians to diagnose diseases quicker, prioritise patients with the most acute needs and contribute to better capacity utilisation at hospitals. Similarly, there is potential in supporting more targeted efforts in the local healthcare system' (Denmark, 2019, p. 62). Improving the efficiency of healthcare delivery, as well as improving patient treatment – both being reliant on data access – are the key themes. Healthcare is noted to be an area where the 'abundance' of data can 'benefit many citizens' (Denmark, 2019, p. 54–55).

The application of AI in the healthcare sector in Finland is like that of Denmark: improving efficiency in provision and treatment. There is also an indication that some human healthcare workers will be taken out of the loop: 'Robots and intelligent aids will assume an increasingly important role in care tasks where human presence and empathy are not essential' (Finland, 2019, p. 33). However, in the Finnish case, data is seen as the means to achieve this by 'generating snapshots of people's genuine needs and wellbeing status across administrative boundaries... [so that] services could be targeted effectively, which would turn the service chains smooth, tailored and effective from the perspective of citizens' (Finland, 2019, p. 86). The relationship to data collection is not so extractive as in the Danish case, but elements of health literacy for both the healthcare sector and the public are included in the Finnish future vision of AI's role in healthcare.

The role of the state and the private sector in implementing these AI-driven services is far from clear, though the Finnish NAIS states that this would exist within a 'human-centred data economy' (Finland, 2019, p. 60). The Finnish NAIS is more critical of the potential threat AI poses to healthcare provision, pointing to the proliferation of consumer healthcare apps and the wealth of data this provides the private sector, data which is outside of public control (Finland, 2019, p. 100).

Norway's NAIS envisages a 'health analysis platform, a national system for making health data accessible for research purposes and for other, secondary uses [...] and will form the basis for new types of medical and health research' (Norway, 2020, p. 23). While this is more clearly stated to be realised within a predetermined regulatory framework, and state-regulated, it is unclear how the public will interact with this platform beyond granting access to their health data.

The Swedish NAIS paints a similar picture to that of the other states, with optimising hospital administration and supporting decision-making in treatment being dominant themes in AI's future role in healthcare. As with the other states, access to data is seen as the key to unlocking this. In the Swedish NAIS, however, this is linked to the considerable cost the state has paid to digitalise aspects of the healthcare sector. As such '[h]ealthcare providers are looking for these tasks as a way to unlock valuable information, a reimbursement in the form

of new data-driven services that create efficiency and help them to compete and become successful' (Vinnova, 2018, p. 39).

In the Swedish NAIS one can see more – though still limited – reflection on health education and literacy, understood as '[e]mpowering patients and consumers to proactively manage their health' (Vinnova, 2018, p. 38) as well as the important role of the 'consumerisation of care'. The NAIS states: 'In this new era of consumerisation of care, patients – especially younger "millennials" – will expect a healthcare experience [like] with other online services that will bring about their recovery (on their own or) faster' (Vinnova, 2018, p. 39).

Relationship Between the State and Market Within AI Healthcare

The Danish NAIS sets out a vision whereby 'world-class digital services' in healthcare will become available, in part due to the state allocating funding to test and deploy them (Denmark, 2019, p. 63). It gives examples of this being led by the public hospitals or universities, such as Aarhus University (Denmark, 2019, p. 63). However, these are given as cases of public sector intervention in a private sector dominated field. The rationale for this is an assumption the public health sector 'lack[s] [...] experience in [the] use of artificial intelligence' (Denmark, 2019, p. 21). AI technology and private-sector intervention in the public healthcare system are seen as synonymous, with technological developments leading to better treatment of patients, which is noted to be good for 'the individual citizen, for businesses and for the economy' (Denmark, 2019, pp. 31, 62). Further blurring this understanding of technology and the private sector is the NAIS's discussion of the logic of 'value-based healthcare'.² This increased value is possible due to the claim that '[a] modern and effective healthcare system should [...] take a position on how staff can use artificial intelligence as a tool to add value for patients and relatives' (Denmark, 2019, p. 62). However, the origins of these technological tools, as well as issues of ownership and implementation, remain opaque.

In the Finnish NAIS the public health sector is presented as unable to support innovation compared to their private counterparts (Finland, 2019, pp. 50–51). Current models for investment and funding in healthcare were seen as 'slowing down the cooperation between public healthcare and private companies' (Finland, 2019, p. 51). Also present in the NAIS was a narrative in which clinicians lack resources to invest in development work with the private sector, as well as technical problems around the ownership of co-developed technology and restrictive public procurement procedures (Finland, 2019, p. 51). While some good practice examples of private-public partnerships (PPPs) can be found in the Finnish NAIS, for example, between Tieto and the City of Espoo (Finland, 2019, p. 59), overall, the public health sector was framed as unable to innovate, reducing the potential applications of private-sector technological development. The public health sector is presented as needing to adapt as 'AI creates pressure' on it in terms of the division of labour between healthcare workers and the need for access to the wealth of personal health data the private sector has collected through self-tracking applications (Finland, 2019, pp. 99–100).

The role of the private sector, and the framing of technology and the private sector as being synonymous, is less pronounced in the Norwegian NAIS. While a narrative of strong research and business communities around AI and health were mentioned (Norway, 2020, pp. 7–8), state-led PPPs were the focus of the future vision. One notable example is the BigMed project, which is supported by a NOK 60 million grant by the Research Council of

2. This is similar to the findings of Kokko & Kork (2021) on value-based healthcare logics in the Nordic health policies.

Norway and explores ‘personalised medicine and use of large-scale data analysis in health-care’ (Norway, 2020, p. 36). In line with the more cautious regulation before innovation and implementation approach, as compared to the other states, the role of the private sector is more restricted in the Norwegian future vision.

In the Swedish NAIS healthcare is described as an ‘industry’ where AI technology can make the most impact, as ‘AI products can be used to support the welfare sector’ (Vinnova, 2018, p. 67). This is noted to be beneficial for both ‘Swedish business and society’ (Vinnova, 2018, p. 8). However, the potential of AI to support the welfare sector also has an extractive leaning, framed positively with Sweden being seen as a testbed where cooperation between a range of private and public actors ‘can lead to high export potential for packaged services’ (Vinnova, 2018, p. 67).

The Swedish NAIS argues for extensive investment in developing collaborations between actors ‘with domain knowledge from the healthcare service, technical knowledge from AI companies and IT infrastructure companies, as well as cooperation with actors with regulatory responsibilities and competencies’ (Vinnova, 2018, p. 41). While it notes that ‘[t]he remit of the healthcare service includes innovation’, they are seen as lacking the competence and resources ‘to systematically do this in a way that impacts at a foundational level’ (Vinnova, 2018, p. 40).

Discussion

The NAISs considered here present four distinct but overlapping socio-technical imaginaries in which an AI future of healthcare necessitates significant regulatory changes. While Norway sees regulation as necessary on a proactive basis to help implement AI within healthcare, for the other states regulation is justified to reactively mitigate against risks to privacy, but, overall, is viewed as an obstacle to innovation and achieving the benefits of AI healthcare. Healthcare is not a politically neutral field but is structured along power relations. It is therefore significant that in all the NAISs the need to ensure transparency and uphold social values within an AI-oriented future healthcare rests on human physicians (Denmark), clinicians (Finland), healthcare workers (Norway) and a mix of private and public healthcare actors (Sweden). Norway stood out as the exception again where all other Nordic states represented prioritised the role of the private sector in guiding the development of a regulatory framework around AI’s use in healthcare.

All four NAISs take a similarly broad approach to the future role of AI in healthcare, seeing it as including diagnoses, but with significant emphasis on its potential to help allocate resources more cost-effectively, as well as developing new ways to improve patients’ understanding of their own healthcare needs.

Given the Nordic welfare model and the strong role of the state this implies, it is significant that except for Norway all the Nordic states here see the future of AI healthcare as being largely dependent on the private sector, for its development and implementation at least, while its role as a service provider remains unclear. There is no consideration of the role the Nordic public sector plays in driving innovation for the public good, with all four NAISs articulating a vision in which only the private sector can produce the type of AI technology needed for healthcare. Norway’s exception concerns only whether regulation can help create the right conditions or is, as for the other states, an obstacle to progress. Importantly, all NAISs treat PPPs as normal and essential for the future of AI in healthcare. Like the findings of Tupasela et al. (2020), we can see that such partnerships are envisioned as predominantly focused on granting commercial access to public data, as well as allowing the private sector

to use the public sector as a test bed for technological development. The relationships evident in these largely identical visions leave no space for imagining the public sector as an innovator or source of new technological development. Left only as a largely passive field, the value of the public sector rests on the extent to which it can be exploited by the private sector.

For the NAISs, the future of healthcare within the Nordic states is one in which the private sector is the provider. The public sector exists as only a regulator to resolve potential risks in much the same way as it does within retail transactions. The principal welfare benefits of AI in healthcare are presented as a potential to provide more detailed data on patients, theoretically enabling more precise healthcare guidance, monitoring, and allocation of resources. The strongly pronounced narrative that only the private sector can develop AI for healthcare contrasts with the absence of any description of the state's role in funding healthcare, leaving the foundation of the welfare state uncertain. Also, while the vision of AI in healthcare in the four NAISs is framed positively as bringing better healthcare for individuals, it remains largely silent on how individuals can actively participate in their own well-being beyond their role as consumers. Overall, under the auspices of envisaging the future role of AI in healthcare, the Nordic NAISs analysed here present a strongly market-oriented policy vision in which welfare based on public provision has disappeared. While such marketisation is already evident in all Nordic states, the extent of that development as imagined in the NAISs is both radical and far removed from the common popular conception of the Nordic region as one based on welfare. The NAISs provide a means to articulate a vision that is both publicly visible but easily avoids wider scrutiny due to its technological futurism. The shift to the private sector envisaged in the NAISs is a significant paradigm shift with respect to altering the state-based model of Nordic welfare.

Conclusion

The four NAISs analysed in this paper as socio-technical imaginaries provide insight not into the future but, rather, present-day institutional values dominant within the Nordic region. Its key findings show that, despite a popular discourse in which the Nordic welfare model is supported against external threats, when imagining the future relationship between AI and healthcare – a cornerstone of welfare – the Nordic welfare model of state provision is largely absent. Furthermore, at their most extreme, the Nordic NAISs treat the state as little more than a reactive regulator, with healthcare viewed as an industry in which its future infrastructure – AI – will be provided by the private sector. This goes much further than the market-oriented model of NPM already established in the Nordic region, since it not only treats the public as 'consumers' but also radically accelerates the shift towards for-profit actors as providers. Having established AI as not only a tool, but as the very infrastructure of healthcare in the future, the technology is then framed as something only the private sector can provide.

The vision presented in the NAISs is a paradigm shift compared to common self-perceptions of the Nordic welfare model, at least as expressed within political debates, and yet is both visible within the documents and avoids being the subject of public discussion due to the technological futurism of the NAISs. There is a clear distinction between the discourse within the NAISs and common perceptions of the Nordic states. To understand the extent of that shift requires tracing the longer-term implementation of those visions. In the meantime, inquiring into the values contained within documents such as the NAISs provides an often ignored means by which to trace changing notions of the 'good society' and, in this

paper, has provided a valuable means by which to trace the changing politico-economic landscape of the Nordic region, as well as to study institutional discourse on the role of AI and healthcare.

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Conflict of Interest

On behalf of all authors, the corresponding author states that there is no conflict of interest. The authors have contributed equally to the article.

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