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Towards Accountable E-Health Policies in the Nordic Countries

Arild FAXVAAG[a,1], Jarmo REPONEN[b], Gudrun Audur HARDARDOTTIR[c], Tuulikki VEHKO[d], Johanna VIITANEN[f], Jeppe ERIKSEN[e], Sabine KOCH[g] and Christian NØHR[e]

[a] *Department of Neuromedicine and Movement Science, Norwegian University of Science and Technology, Norway*
[b] *Research Unit of Health Sciences and Technology, University of Oulu, Finland*
[c] *Directorate of Health, Iceland*
[d] *Finnish institute for health and welfare, Finland*
[e] *Department of Sustainability and Planning, Aalborg University, Denmark*
[f] *Department of Computer Science, Aalto University, Espoo, Finland*
[g] *Department of Learning, Informatics, Management and Ethics, Health Informatics Centre, Karolinska Institutet, Stockholm, Sweden*

Abstract. The Nordic Countries are seen as forerunners in the field of digital health technologies and national implementation has been guided by sector specific strategies for many years. In the context of new European legislation such as the European Health Data Space (EHDS), a review of the existing strategies is indicated. The objective of this policy analysis is to assess and compare the scope, ambitions and extent of accountability in national-level digital health policies in the Nordic countries. The scope of the policies from the five countries were largely centred around a) empowering and activating citizens; b) a shift towards prevention and digital first; c) supporting health operations; d) doing the groundwork; e) making health data more available in research and innovation workflows and f) supporting health personnel. Finland comes out as the most ambitious country with the aim to transform their health system by means of digitalisation. Both Finland and Iceland work towards prevention and the digital first ambition due to large populations in rural areas. These two countries also present the most accountable policies, meaning that their policy documents are the most transparent as to how they arrived at the conclusions and how they are to evaluate the achievements.

Keywords. digital healthcare, health policy, Nordic countries

1. Introduction

The healthcare systems in the Nordic countries rank among the best in providing equitable, safe and effective care. Cooperation between the governments is achieved through the Nordic council of ministers (NCM)[2]. Cooperation also includes the field of e-Health / Digital healthcare, where the Nordic countries stand out as pioneers: As of 2024, all countries have established national patient portals, electronic health record

[1] Corresponding Author: Arild Faxvaag; E-mail: arild.faxvaag@ntnu.no.
[2] https://www.norden.org/en/nordic-council-ministers

(EHR) systems, health registries, health information exchange infrastructure, laboratory and imaging information systems [1],[2],[3].

Despite Nordic cooperation and the use of international standards, each country's e-health solutions have largely had a national scope. This is now beginning to change as the European Union has started its work on the regulatory framework for an European health data space (EHDS) [4]. In the foreseeable future, patients will be able to bring along with them their electronic prescriptions when they travel. The development pipeline also includes a summary of care records. This development might ultimately end in a unified European care provision space. Another goal of EHDS is to improve the access to health data and share it in a secure infrastructure for research and innovation. There is also a budding commercial market for video consultations on demand and other digital-first healthcare services.

An e-Health / Digital health policy is a macro-level instrument to shape the development within a healthcare system. It must build on what has been achieved when it comes to existing services and existing digital health infrastructure. It must also aspire to leverage the potential in enabling technologies while keeping risks at acceptable levels. As a sector-specific policy it will also have to comply with generic national policies on digitalisation (e.g. on national policies on the use of machine learning and artificial intelligence) as well as with relevant supranational policies from the United Nations, EU and NCM.

The objective of this policy analysis is to assess and compare the scope, ambitions and extent of accountability in national-level digital health policies in the Nordic countries. By scope we mean what the policy intends to change when it comes to a) infrastructure development (to include regulatory groundwork, standardisation activities, work on the technical infrastructure and on the infrastructure to maintain cybersecurity) and b) business support (to include preventive care, healthcare delivery, knowledge development, building a competent workforce). By ambition we mean the value of the stated policy outcomes if achieved, and (implicit), the degree of risk taken. By extent of accountability we mean the extent to which the underlying assumptions also are described in the policy documents and the extent to which the descriptions of the intended outcomes are so that their achievement, and hence the fulfilment of the policy objectives can be accounted for in the future.

2. Materials and Methods

The policy documents for use in the analysis were provided by the NCM e-health group (table 1). The policy analysis was carried out by the first author by means of document analysis [4] using the NVIVO software tool. Coded policy statements were grouped in the following six categories: Policy development method, Current state of e-health, Policy objectives, Implementation (of the policy), Intended outcomes and Monitoring and managing the strategy. The policy statements presented in this communication largely belong in the Policy objectives category.

Table 1. List of policy documents

Country	Policy document
Denmark	The Danish Health Data Authority: A Coherent and Trustworthy Health Network for All. Digital health strategy 2018-2022 (2018). Available from https://sundhedsdatastyrelsen.dk

	The Danish Government: Denmark's digitisation strategy (2023) (in Danish). Available from digmin.dk.
Finland	Ministry of Social affairs and Health: Strategy for digitalisation and information management in healthcare and social welfare (2023-2035). Available from https://julkaisut.valtioneuvosto.fi/.
	Ministry of Social affairs and Health: Information to support well-being and service renewal. eHealth and eSocial strategy (2020). Available from https://julkaisut.valtioneuvosto.fi.
Iceland	Directorate of health: National eHealth strategy 2016-2020.
	Ministry of Health: Health Policy, A policy for Iceland's health services until 2030 (2019). Available from: https://www.stjornarradid.is/.
	Ministry of health: Digital healthcare policy (2021). Available from https://www.government.is
Norway	Directorate of eHealth: National eHealth strategy (2023). Available from https://ehealthresearch.no
	Ministry of health: National Health and collaboration reform 2024-2027 (2024) (In Norwegian). Available from https://www.regjeringen.no.
Sweden	Ministry of Health and Social Affairs: A strategy for implementing Vision for eHealth 2025 (2020). Available from: https://ehalsa2025.se.
	E-hälsomyndigheten: Genomförandeplan 2020–2022 Bilaga till Strategidokument Vision e-hälsa 2025 Available from: https://ehalsa2025.se.

3. Results

The scope of the policies from the five countries were largely centred around a) empowering and activating citizens; b) a shift towards prevention and digital first; c) supporting health operations; d) doing the groundwork; e) making health data more available in research and innovation workflows and f) supporting health personnel.

Empowering and activating citizens: All countries have established portals through which patients can view their own health records and carry out self-service tasks such as asking for prescription renewals and schedule appointments. Most countries envision an even more active patient role:

> "*to support patients and their relatives in taking greater ownership of their own illness in their daily lives and enabling them to actively participate in their own treatment*" (Denmark).

> "*Self-management services will include clinical decision-making support for the use of citizens, risk tests, self-assessment methods as concerns the need for assistance required in referral to treatment, online health checks and reminder and calendar solutions to support self-management*" (Finland)

Shifting towards prevention and digital first: All five countries are working towards a shift towards prevention and towards leveraging patient portals into a digital front door to their entire health system. The emphasis on this is most prominent in Iceland and Finland, where a relatively large proportion of citizens live in rural areas. The Icelandic policy is perhaps the most crisp and clear:

> "*By 2030 citizens of Iceland in Iceland will be in a position to improve and maintain their own health through the use of digital solutions in a safe and integrated care environment*" (Iceland)

Finland is the most ambitious. They aim to transform their health system by means of digitalisation:

> "*In all wellbeing services counties, digital channels are the primary choice whenever appropriate or for customers that are able to use digital services"* (Finland)

Supporting health operations: Supporting health operations is an important objective of e-health policies in all countries. Both patient safety, quality of care and continuity of care are highlighted as they always have been. Increasingly, workflow management, digital care pathways, clinical decision-support and other means of distributing knowledge to point of care are being mentioned. Sweden shall have a "National knowledge-support". According to the Norwegian e-health policy,

> "*Health personnel shall have access to user-friendly digital tools that [..] provides good decision-support and support their workflows*" (Norway)

Likewise, an entire section of the Danish policy is entitled "*Knowledge on time*".

Doing the groundwork: All countries leverage achievements from the past while continuing to do work on digital infrastructures, standardisation, cybersecurity and legislation work.

Making health data more available in research and innovation workflows: All countries have become more aware of the potential value of their health data sets. Denmark simply states that:

> "*The digital development is supported by the world's best health data for research and innovation i.e. through the "Vision for better use of health data*" (Denmark)

Iceland states that:

> "*Databases and biobanks in the health services will be open to those with the requisite licences to carry out scientific work*" (Iceland)

Whereas Norway wants more research as well as innovation and service development:

> " .. *systematic cooperation between the [healthcare] sector, commercial companies and research to exploit health data for service development, Innovation and development of commercial products.*" (Norway)

Supporting health personnel: Finland wants to ease the workload of health personnel:

> "*The workload of healthcare and social welfare personnel has been eased by making better use of information and by introducing advanced technological solutions*" (Finland)

This is also a focus in the Norwegian policies. Both countries also seem aware that health information systems have usability issues.

Finland and Iceland had the most accountable e-health policies meaning that their policy documents were transparent as to how they had arrived at the conclusions and at how the policy objectives should be evaluated towards the end of the policy period.

4. Discussion

In this policy analysis we have found that the Nordic countries, widely regarded as frontrunners in the digitalisation of the healthcare sector, now emphasize a shift towards prevention and building a digital front door to the healthcare services that increasingly will enable patients to serve themselves. At the same time the focus on patient safety, privacy and information security remains the same. Reflecting an affluence of registries that are filled with high quality health data, most e-health policies also focus on supporting research and innovation to support a budding health information economy.

5. Conclusions

All the Nordic countries are similarly striving for harvesting the benefits of digital healthcare. This is reflected in their national strategies where new goals for digitalisation are set. Because of the European actions towards EHDS, there is a need to develop new indicators to measure this development and learn from the experiences of those forerunners.

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