

A Common Electronic Health Record for Norwegian Municipalities

Gunnar Ellingsen^a, Bente Christensen^b, Rolf Wynn^a

^aThe Arctic University of Norway, Tromsø, Norway

^bNord University, Bodø, Norway

Abstract

Large-scale electronic health record (EHR) systems have increasingly become a staple of the European healthcare market. The Norwegian health care authorities are planning for the acquisition of a common large-scale EHR system for 291 of Norway's 356 municipalities. This has resulted in much controversy among the stakeholders. We explore the key contested areas.

Keywords:

Electronic Health Records; Municipalities

Introduction

Large-scale electronic health record (EHR) systems have become increasingly common in the European healthcare market. These systems are frequently promoted as a “platform-based ecosystem”, i.e., a network where platform owners encourage third parties to develop or integrate complementary components [1]. In accordance with this trend, the Norwegian health care authorities launched a plan in 2018 for the acquisition of a common large-scale EHR system for 291 of Norway's 356 municipalities as part of the so-called Akson program [2]. The new municipal EHR system will replace the existing EHRs used in home-care services, nursing homes, and general practitioners' (GPs') clinics. Implementation is expected to begin in the first few municipalities in 2025, with the process being completed in all municipalities by 2030. The investment is estimated at NOK 11.2 billion (EUR 1.12 billion), but if operational and management costs through 2040 are included, the total cost is estimated at NOK 22 billion (EUR 2.2 billion). However, there has been fierce debate among healthcare professionals, policymakers, digitalization strategists, and suppliers regarding the plan's scale, content, and strategy. Here, we explore these contested areas in the context of the Norwegian health care system's peculiarities. We address the wide empirical scope of our case by drawing on information infrastructure literature, focusing on the heterogeneous interplay between technology and people [3].

Methods

This study adheres to an interpretive research approach, which considers a phenomenon from a variety of viewpoints [4]. Data collection is based on interviews with 10 healthcare professionals in the Tromsø municipality in northern Norway in 2020. Together with three other municipalities, Tromsø participated in a reference group organized by the Directorate for e-Health with the purpose of laying the groundwork for future Akson activities. Also, six top healthcare-segment managers from the three principal suppliers of EHR systems to the Nor-

wegian municipalities were interviewed. All interviews were transcribed for analysis.

Results

Norwegian municipalities exist at the lowest administrative and politically elected level. They are responsible for providing first line health care services to citizens in the local community. This responsibility includes the management of nursing homes and homecare services, as well as the provision of public health services. The municipalities also have binding agreements with entrepreneurial GPs. When there is a need for more specialized treatment, citizens are referred to tertiary care facilities (hospitals), which are governed by the state through four regional health authorities. There are three different EHRs in use in the municipalities' nursing homes and homecare services: Profdoc, Cosdoc, and Gericca. These EHRs are used by a range of different professionals, such as nurses, occupational therapists, psychologists, municipal physicians, and physiotherapists. The average municipality pays a relatively small, fixed amount per year for a standardized, but customizable EHR. Clusters of municipalities tend to use the same EHR system, given their longstanding regional cooperation and the fact that municipalities seldom change suppliers. The current systems have been criticized for not being able to support an increasingly hard-pressed municipal healthcare sector. When the EHRs were introduced 20-25 years ago, they were archive and case management systems; they have, however, not kept pace with present-day users' requirements, in particular when it comes to integration with secondary care EHRs, workflow, and clinical functionality. One major reason for this is that neither the municipalities nor the suppliers have invested much in developing the EHRs over the years.

Many of those who participated in the preparatory work for Akson considered it a positive initiative. A policy adviser in the municipality explained that there was general consensus that there was not too much variation between the municipalities' responsibilities, since they are all governed by the Health and Care Act and take on statutory tasks. For this reason, a common EHR for the municipalities (including GPs) would seem to be a reasonable way to ensure seamless information flow between healthcare personnel involved in treating and caring for patients. Akson Journal AS, a corporation jointly owned by the municipalities and the state, was intended to bear responsibility for the acquisition, management, and future development of a standard EHR for all municipalities. This was expected to ensure a strong, united position during the negotiation process with suppliers and to be a substantial improvement over the current scenario, wherein small and mid-sized municipalities with less negotiating power typically end

up acquiring a standardized EHR package (one of the three mentioned above) with less potential for future development.

Some have argued that this strategy may simply be a continuation of the existing strategy that is, having a shared system for a wide variety of different user groups. A municipal physician, for instance, argued this would simply be a very costly extension of the present-day situation, where everybody used the same EHR system. Suppliers have also voiced concerns, arguing that this is an old-fashioned way of doing things and that it prohibits local innovation initiatives. The key point is that while all municipalities have similar responsibilities in accordance with the law, there are different needs in each municipality. A policy consultant explained that, although the municipalities have the same overall goals, it is difficult to agree on exactly how things should be done. Similarly, a coordinating nurse in a nursing home pointed to how hard it is to implement good ideas in the present EHR system: “What is good for a nursing home is not necessarily good for substance abuse, psychiatry, or child welfare.” What’s worse, entrepreneurial GPs currently use EHR systems that are specially designed for their GP practices. The GPs are quite satisfied with these systems, and there are many modern EHR systems currently available on the market.

In order to accommodate the different perspectives, spokespersons representing users, suppliers, and policymakers have suggested that the common EHR system should have the characteristics of a platform or ecosystem that can support the presence of various components and systems, where the platform itself ensures effective integration mechanisms between different domains. The recommendations were duly accepted by the Directorate of e-Health and any necessary changes were made to the policy. The Akson program was then divided into two parts: the “holistic integration” part remains the responsibility of the Directorate of e-Health, while the EHR part was transferred to the Norwegian Association of Local and Regional Authorities and given the name “common municipal health record.” Despite these changes, the common municipal health record concept remains vague and contested. This was emphasized by one municipality physician participating in the pre-project, who argued that it was hard to understand exactly what this change represents, because on the one hand it has been promoted as one system, while on the other, many suppliers are now being invited to collaborate with their individual systems, and in a stepwise process. Existing EHR system suppliers in the municipal market also find the platform strategy unclear, leaning toward a large-scale, standardized solution. One manager was particularly explicit about this, stating that there is no supplier in the world that can offer a so-called health ecosystem that can be pieced together like an app on an iPhone. The manager added that this strategy appears to be a plan for just another EHR capable of offering mechanisms for integrating into other systems, i.e., an ordinary IT mindset. Another reason for the pull toward a standardized solution, according to a municipal policymaker, is the fact that there are challenges associated with platforms because of each municipality’s legal responsibility to enter into agreements with various suppliers in accordance with the “sale and purchase agreement IT.” Given this context, municipalities will still have the responsibility of coordinating its IT portfolio.

Conclusions

Along information infrastructural dimensions [3], Norwegian authorities have great ambitions for the implementation of a common EHR system for Norwegian municipal health ser-

vices. However, the platform strategy [1] has proven vague and many stakeholders fear that the notion of “platform” is just another term for a large-scale monolithic system along the lines of what currently is implemented in other Nordic countries such as Denmark and Finland [5].

References

- [1] Cozzolino, A., Corbo, L. and P. Aversa, Digital platform-based ecosystems: The evolution of collaboration and competition between producers and entrant platforms, *Journal of Business Research*, 2020: 385-400.
- [2] Directorate of e-Health, Central policy document Akson: Comprehensive collaboration and common municipal Electronic Health Record solution. Main report (1-190), 2020. Oslo.
- [3] Star S.L. and K. Ruhleder, Steps toward an ecology of infrastructure: Design and access for large information spaces, *Information Systems Research*, 1996;7(1):1-50.
- [4] Klein, H.K. and M.D. Myers, A set of principles for conducting and evaluating interpretive field studies in information systems, *MIS Quarterly* 1999;23(1):67-94.
- [5] Hertzum, M. and G. Ellingsen, The Implementation of an Electronic Health Record: Comparing Preparations for Epic in Norway with Experiences from the UK and Denmark, *International Journal of Medical Informatics*, 2019;129(May);312-317.

Address for correspondence

Gunnar Ellingsen: gunnar.ellingsen@uit.no