

Ten years experience with National IT strategies for the Danish Health Care service

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Abstract

Since 1995 IT strategies have been an important instrument in Denmark to agree about what systems and services are going to be developed and implemented in large scale on national basis. During the past 10 years the focus for the it strategies has changed and this paper is analyzing and comparing the content and focus for the four strategies. In order to compare the IT strategies the content has been divided into five groups and the quality of the content have been scored. The comparing is done by plotting the result of the scoring into a radar (spider) diagram. The analyse shows that none of the strategies covers all the important factors at the same time.

Keywords:

It strategy, Electronic Health Record, technical infrastructure, clinical infrastructure, governance, business support, stakeholder involvement.

Introduction:

A targeted and efficient use of modern information technology for the health care service is essential in order to meet the society's increas-ing demands as well as the political objectives of high quality, access to information, influence and participation in the health care service. The purpose of the National IT Strategy for the Danish Health Care Service is to establish a common framework for the digitization of the health care service. Electronic Health Records (EHR) has been known as concept for more than 40 year and during the past 15-20 year, EHR systems have been developed and are used in large scale in the primary care sector in many countries. In the secondary care sector, EHR systems have been developed systematically in Denmark in the past 10 years, but it is still not possible to buy a standard EHR system to be used in a hospital. One of the instruments to focus the development and implementation is a national agreed IT strategy for the health services.

Materials and Methods:

The purpose of this paper is to analyse and compare the content of the past four Danish IT strategies. In order to compare the IT strategies the content has been divided into five groups and the quality of the content have been scored. The comparing is done by plotting the result of the scoring into a radar (spider) diagram.

Strategy #1: IT political action plan 1995

In the autumn 1994, the Ministry of Research published a report with the political objectives and strategies for the info-society year 2000 [1]. In the report the information technology had a high priority. The initiative for the health care service was followed up by the Ministry of Health, which published an action plan for Electronic Health Records (EHR) [2] in 1996.

Strategy #2: National strategy for it in the Hospital system 2000-2002

The next strategy was a follow up on a decision from 1998 in the Danish parliament, that the use of modern information technology should be improved as much as possible in the Hospitals. The objective for the strategy 2000-2003 [3] was to point out the necessary initiatives for the Hospital it systems, in order to support the work and realisation of the political healthcare goals:

- High health professional quality
- Clear information and short waiting times
- High user acceptance
- Better information regarding service and quality
- Efficient use of resources

Strategy #3: National IT strategy for the health services 2003-2007

The Ministry of Health and Interior launched in May 2003 a national strategy 2000-2003 [4] for the health services. The aim of the strategy was to support the order of priority for the use of IT in the health care service, i.e.

- Contribute directly to the improvement of quality, service and coherence in patient care.
- Ensure better communication between all parties in the health care service.
- Contribute to the fast and safe access of the individual citizen and/or patient to his own health record as well as to information concerning service and quality of health care.
- Be instrumental to better administration and management of the health care service.
- Ensure coordination with the political goals concerning digitization of the public sector in Denmark.

Strategy #4: A national strategy 2008-2012 – a participatory approach

The national strategy 2003-2007 enabled a lot of development and implementation of IT systems for the health service. By June 1995, the coverage [5] of EHR in the Danish Hospitals had increased to 50%. But, in the meantime it was visible that the ambitious goal regarding implementing EHR [6], based on shared standards in the Hospitals systems, would take longer time than agreed [7].

In April 2007 a new organisation “Connecting Digital Health in Denmark” was formed in an agreement between the Ministry of Health, the Danish Regions and the Municipality association. The first task was to prepare a new strategy 2008-2012 [8] for the digitalisation of the health service. This time, it was agreed to use a participatory approach by involving more actors and strengthen the governance at national level.

Results:

The content of the four strategies has been analysed and divided into five groups (factors). Afterwards each strategy has been scored (0-100%) to indicate to what degree the content include a specific factor. Low scores have been given if the content for a factor only are described on a general and broad level (eq. high quality, user friendly systems, coordination). High scores have been given if the content is described substantially.

Business support:

The factor for business support expresses to what degree the strategy focus on support of the health care processes and/or the empowerment of the patients and citizens. To get a high score the strategy shall include details on how IT systems can improve the treatment, the quality and the use of resources.

Infrastructure, technical:

The factor for the technical infrastructure expresses to what degree the strategy focus on the use of computer power, network with high bandwidth, wireless solutions, pervasive solutions and seamless access to data.

Infrastructure, clinical:

The factor for the clinical infrastructure express to what degree the strategy focus on how the IT systems can support the clinical work eq. evidence based medicine, bioinformatics, genomics, environmental factors, cultural factors, social factors, simulations of organs and drug reactions. A well developed clinical infrastructure will require large amount of structured data to be stored using agreed national models, standards and terminology systems.

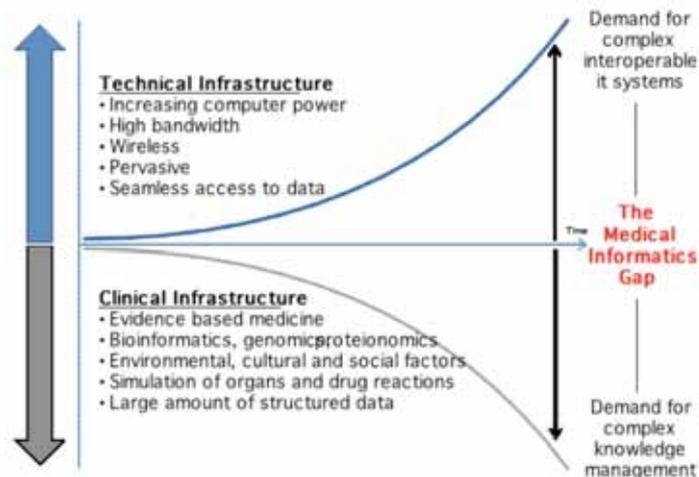


Figure 1. *The Medical Informatics Gap*

On Figure 1 is shown the development for the technical and clinical infrastructure, which both is progressing exponential.

The current situation and also the possible future situation is a gap between the demand for complex it systems, which builds on the newest technology and a demand for complex knowledge management from the health professionals and the patients.

Governance:

The governance factor expresses to what degree the strategy focus on coordination and management on national level. Governance will involve policies and requirements for the use of standards, terminology and the structure of data.

Stakeholder involvement:

The stakeholder involvement factor expresses to what degree the strategy have involved the parties who affects, or can be affected by the IT strategy as well in the strategy phase and in the realization phase.

Discussion:

In order to compare the different focuses for the IT strategies, the scoring has been plotted into a radar (spider) diagram.

The radar diagram on Figure 2 shows significant difference in the IT strategies for the health service in past 10 years.

The first two strategies 1995-1996 and 2000-2003 had focus on the establishment of the clinical infrastructure by building a national health care network for the exchange of messages between the health care organisations.

The IT strategy 2003-2007 had focus on the development of the clinical infrastructure (model, standards and terminology).

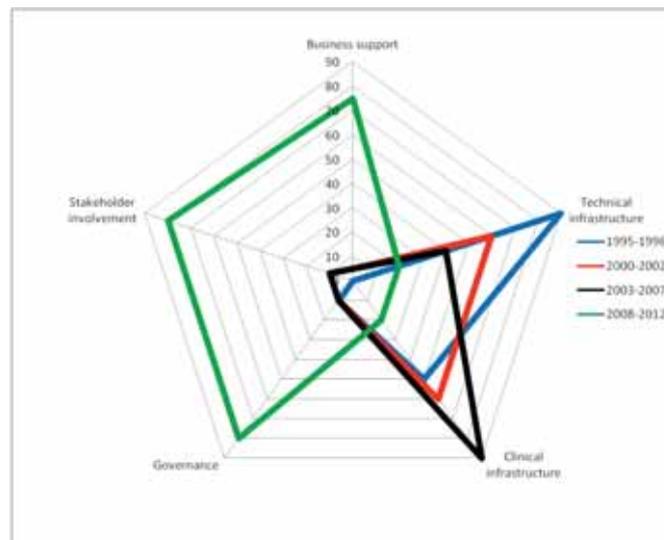


Figure 2. Radar diagram showing focus for the IT strategies

The new strategy for 2008-2012 focus on support of the business, governance and involving the stakeholders.

Conclusion:

Development and implementation of EHR or more general IT systems for use by the health service is a complex and often underestimated work. The success depends of many factors and we do not know how the different factors influence each other.

An IT strategy is a usable instrument to define and agree on common and national objectives. The current analyse of the four strategies has made it visible that none of the strategies covers all the important factors at the same time. Each of the factors is essential and we need time and a process in order to understand the complexity and to accept the direction for the future.

References:

- [1] The Danish Ministry of Research. The InfoSociety year 2000. October 1994.
- [2] The Danish Ministry of Health. Action plan for Electronic Health Records (EHR) – strategy report. August 1996.
- [3] The Danish Ministry of Health. National strategy for IT in the Hospital system 2000-2002. November 1999.
- [4] The Danish Ministry of Interior and Health. National strategy for the Danish Health Care Service, 2003-2007. May 2003.
- [5] Vingtoft S., Bruun-Rasmussen M., Bernstein K., Andersen S. K., Nøhr C. EHR Observatory – annual report 2005. October 2005.
- [6] The Danish Government and the County association. Agreement regarding the economy. June 2003.
- [7] Nøhr C., Andersen S. K., Bernstein K., Bruun-Rasmussen M., Vingtoft S. Diffusion of Electronic Health Records – six years of empirical data.
- [8] Connecting Digital Health in Denmark. Digitalization of the health care service 2008-2012. December 2007.

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