TELEMEDICINE AND eHEALTH IN NORWAY: ADMINISTRATION AND DELIVERY OF SERVICES

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ABSTRACT

Objectives. This article reviews the situation in Norway concerning the administration and delivery of telemedicine and eHealth.

Methods and results. By introducing the Norwegian hospital reform implemented in January 2002, the review provides the background allowing to understand the shift in strategy within this field in Norway.

It also provides a historical context regarding the use and development of telemedicine in Norway.

Since the implementation of the hospital reform, it can be argued that, presently, there has been a significant change in strategy from what can be described as a "muddling through"-strategy to a more rational approach, based on common and clearly defined goals.

Conclusions. The hospital reform can be regarded as an important crossroads for the use of information and communication technology in Norway. The hypothesis put forward is that the development since the reform was implemented has strengthened both the willingness and the ability to make rational choices and take important steps forwards regarding the use of information and communication technology in the health sector in Norway, when discussing both telemedicine and eHealth. *(Int J Circumpolar Health 2004;63(4):328-335)*

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INTRODUCTION

This article reviews the situation in Norway concerning how telemedicine and eHealth are progressing, and how services are administrated and delivered within the system.

The review starts by giving an introduction to the Norwegian hospital reform, which was implemented from 2002. This reform provides an important background to the changes that have happened afterwards, and also to the possibilities inherent in the system. I will then proceed to illustrate how, at different levels of organisation within the specialized health-care system, we are working to promote telemedicine and eHealth services. Finally, I will point out the main challenges to be faced in the forthcoming years, as seen from a governmental point of view.

The Norwegian hospital reform

Historically, Norway (4.5 million inhabitants) has a long tradition of its hospitals being owned by the 19 county municipalities. Around year 2000, there was growing discontent among politicians, administrators and health professionals with respect to hospital organization and ownership. It was perceived that the services were increasingly inefficient, despite a growth in expenditure, a high level of public spending, and more doctors and nursing staff than ever. As the hospitals were owned by 19 rather small owners, this seemed to generate organizational problems, such as an inability to create rational patient flows in order to use capacity in a good manner, great variation in the services offered to the population, and differences between hospitals regarding the use of resources estimated by the use of indicators such as money spent per patient and bed-time per patient. There was also some dismay with the fact that the old system did not encourage the use of information and communication technology (ICT) in a rational manner.

Following a decision by the Labour Party, which had governmental responsibility from spring 2000 until after the election in 2001, a bill was proposed to the parliament, the Storting. The bill proposed a total restructuring of ownership and responsibilities within the specialised health-care system in Norway (1). The hospital reform placed the ownership of the hospitals with the central government. In each of Norway's five health regions, there is one regional health authority

which owns the hospital trusts within each region. The regional authority has a statutory responsibility for ensuring that health services are provided within its health region. The hospital trusts are service delivering units. They are the factual provider of health services. Each of the regional health authorities and the hospital trusts are separate legal subjects.

The reform had the ambition to concentrate political and formal authority, but also to increase local responsibility. The health authorities and hospital trusts have freedom to invest, and to be flexible in the planning, organization and dispensing of health services within their organization. Among the government's ambitions for the reform, one can find a wish to utilise information and communication technology (ICT) within the health services in a more strategic manner (2). ICT is viewed as a tool for more functional health services. ICT will help to achieve results in other areas such as research, the quality of the services delivered, the implementation of evidence-based medicine, and the prevention of information loss. This implies the coordination of the procurement of certain products, such as electronic patient records, the coordination of regional and national plans, and the formulation of clear targets.

What do we understand by the concepts telemedicine and eHealth?

The terms *telemedicine* and *eHealth* are in many ways confusing, both to the general public, and to health personnel and administrators. In Norway, we use a definition of telemedicine to draw the boundaries within which the National Centre of Excellence for Telemedicine in Tromsø shall work. This definition states that telemedicine is the "examination, surveillance, treatment and care of patients by using information and communication technology in situations with a geographical distance between patient, information and/or the health-care personnel" (3). This definition is well-suited as a tool for the government. On the other hand, we must acknowledge that it is just one of many different definitions within this field (4). This plethora of definitions and understandings of the same concept makes it difficult to distinguish and discuss subjects concerning the use of ICT within the health sector.

eHealth is a broader concept, which in many ways provides an opening for radical new ways to access and organize the delivery of

health services, and also includes internet-based services for the general public. It seems logical to understand eHealth as a subset of the concept of eGovernment, which implies that the public sector uses new technology to establish new structures and new ways of producing and delivering services to the general public. On the basis of this distinction, the Ministry, when acting as an owner of the health authorities, should normally be more concerned about *telemedicine* than *eHealth*. This article takes the role of the owner as the principal point of departure.

The development in Norway

In 1993, the Department of Telemedicine at the Northern Norway University Hospital was appointed by the Ministry of Health and Social Affairs to be a National Centre of Excellence for telemedicine. As a National centre of excellence, it is to be on the forefront regarding research and development of telemedicine. In addition, the centre has a responsibility for the education and further training of health-care personnel in the field of telemedicine (5). Importantly, the centre shall contribute to make telemedicine known, and facilitate the implementation of telemedicine and ICT in the Norwegian health service. Telemedicine has, thus far, predominantly been used in the northern parts of Norway.

The centre has had a pivotal role in the development of new policies and regulations to facilitate the implementation and use of telemedicine in the health-care service, by identifying obstacles of regulatory and structural natures, both in general terms and within specific fields, such as teledermatology, teleradiology and telepsychiatry. The Ministry of Health has issued a circular that clarifies the responsibilities of the different professions and persons involved in a telemedical consultation (6). The overall principle is that using telemedicine as a technological tool does not alter the overall principles of responsibility. The Ministry has also established reimbursement schemes within several fields of telemedicine.

Norway now has its third generation strategic plan for the use of ICT within the health services. A common denominator has been the establishment of an infrastructure exclusively for the health service, a Norwegian health net. This has been an official aim since 1996 (7). The desire to establish such a net was reformulated, and made more explicit, in the subsequent plan (8), which lasted from 2001 until the

end of 2003. The visions formulated for this net, namely 1) to be secure and guarantee seamless interaction, and 2) to be built along regional and local needs, could, to a certain extent, be interpreted as contradictory. This is explained by the abundance of hospital owners at that time (19 county municipalities and the State) and more than 400 independent local municipalities with diverging interests along different lines, such as different geographies and population bases, different locations on a centre-periphery axis, and different experiences concerning the use of ICT. The national dimension of the net was meant to be a virtual bridge between the very divergent regional and local solutions. The national role was to provide the connection between the regional networks and also to provide some basic services connected to the functionality of the infrastructure and security systems.

After the implementation of the hospital reform in January 2002, there has been a change from what can be described as a "muddling through"-strategy, involving national actors and all the county municipalities, to a more concerted and rational approach, driven by the regional health authorities and the Directorate for Health and Social Affairs. Both sets of actors have their mandate from the Ministry. In the next section, I will outline the present main strategies within this field in Norway.

Strategies

The main document for the national approach to ICT in the health service is the general plan presented by the Directorate for Health and Social Affairs (9). This plan outlines the most important challenges and identifies the main courses of action for the years to come. A main point in this plan is the establishment of an infrastructure exclusive for the health service, i.e. one common infrastructure between hospitals, general practitioners and other relevant actors. Three considerations are important. First, it will be difficult to realize the advantages of telemedicine and eHealth without an integrated, functioning and secure infrastructure which connects all the relevant actors in the sector and in the country as such. Second, as the regional health authorities represent the largest users of this infrastructure, it is vital that they are the owners of the infrastructure. Third, the general plan has no specific funding. It is therefore important to promote and ensure the establishment of alliances with the regional health authorities to secure both funding and an endorsement of the general plan.

To meet these three considerations, the infrastructure will be owned and maintained by the five regional health authorities in a joint ownership of a limited company called Norsk Helsenett AS. This was be established on the 1st October, 2004, and has statutory responsibility for connecting general practitioners, pharmacies and so on. This is to be done in such a way that no one can gain an unfair advantage concerning the price of connecting to the network. The third consideration, the funding, is partly taken care of by the structure of ownership, and partly by the development of a common general strategy for the use of, and investment in, ICT within the hospital trusts.

With this strategy, it is important to promote the use of common standards, the coordination of procurement, and the development of a common strategy for the five regional health authorities. To make this happen, the five regional health authorities have been working together to develop a common general strategy for the use of ICT within and between the hospital trusts (10). The government expects this strategy to be followed by the parties within the specialised health-care service. The main points in this common ICT strategy include a concerted development of electronic interaction, an implementation of electronic patient records based on universal and known industrial standards, and a consistent system of concepts to be used by all responsible parties in the sector.

Another significant factor is the way in which the reimbursement of travel expenses in conjunction with treatment has been altered. This is probably of great importance, because it works as an incentive for the fulfilment of the two ICTstrategies that have evolved lately. Historically, travel expenses have been reimbursed through a third party, the National Insurance Administration, and it is a right that people have. The alteration implies that the financing responsibility has been moved to the regional health authorities. This means that there is an incentive, or room for action, which the regional health authorities can use. If they find that telemedicine solutions ease the patient treatment and, in addition, represent a cheaper and equal, or bette quality compared with alternatives where the patient has to travel to a hospital, it can be a rational choice to establish a service based upon decentralization and telemedicine. Services for kidney dialysis and cytostatic medical treatment, for instance, have been set up outside hospitals, using telemedicine as a tool to make it work properly.

To make these changes happen, we also need someone to push the barriers like the National Centre of Telemedicine does. It lies within our system of government, and in the way new methods in medicine are introduced, that changes occur gradually. Usually, this is considered an advantage. New methods should be tested and evaluated before they are introduced on a national level. In this respect, the central and northern regions of Norway have provided the Norwegian health sector with a test-bed for new solutions. Without this contribution, we would not have come as far as we have. Presently, the framework is largely in place. We now need to focus on values, culture and leadership as tools for the broader implementation of telemedicine as a new technology and tool in the health sector. This is vital if we are to consider telemedicine a success in the future.

The growth of telemedicine and new ways of using the technology will, and must, find its way within the established system. The Ministry believes that this is a healthy way of developing a high quality service. Telemedicine will grow as a tool within the health services, if telemedicine, as a method, can show results, documentation and quality. Another important aspect is the importance of a firm placement within the strategies of the regional health authorities, which have the responsibility for ensuring the provision of health services to the public.

Concluding remarks

I have put forward arguments to which the conclusion will be that Norway has shown a rather well planned and concerted development within this field over the years. This is true, but only partialy.

First, many developments have taken place before a policy was formulated. That is especially true for much of the development within telemedicine. Second, developments have taken roads other than those outlined in plans formulated at the national level. This is true for much of the history concerning the regional networks, which is now assembled in a national infrastructure. Third, and maybe most important, we cannot formulate policies which define precisely which technologies are worth spending time and money on. Research and development on the technological front live largely their own lives.

What Norway has accomplished, and where Norway has interesting results, is that there has been a willingness to apply new technologies and new methods to a public sector, to make it work better

and more efficiently in terms of the quality of treatment, economy, time use and availability. The hospital reform can, in retrospect, be viewed as an important crossroads for this development. The hypothesis put forward in this review is that the development after the 2002 reform has strengthened both the willingness and the ability to make rational choices and to take important steps regarding the use of ICT in the health sector in Norway, both when discussing telemedicine and eHealth. This can, in large part, be explained by the total responsibility given to the regional health authorities. They are in a unique position to view the situation as a whole, and assess their actions from that point of view.

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