

ELECTRONIC HEALTH RECORD IN THE NETHERLANDS: AFRAID OF THE UNKNOWN

*Laurens J. van Baardenwijk**

Introduction

The Dutch government is about to introduce an obligatory national electronic health record, *het Electronisch Patiëntendossier* (EHR). The purpose of the EHR is to replace the widespread use of paper-based records and fragmented computer files, in order to exchange medical information quickly and easily nationwide. However, the EHR is mistrusted, such that almost one third of the doctors have made an objection to their own personal participation. Objections centre on the guarantee of privacy and the assumed lack of security. In my opinion, the foundation of these objections is questionable. In this article I will state that the EHR is a welcome enhancement in medical treatment services. First, I will elucidate the concept and predecessors of the national EHR in the Netherlands. Then I will argue that our privacy and security are not at risk in the EHR. And finally, I will summarise important advantages of the EHR. The discussion on the EHR is a matter that concerns us all, because sooner or later, we will all be a patient.

I. What is the Electronic Health Record?

The EHR system is a collection of summaries from medical health records. The summary contains a list of physical and psychological health problems, prescribed medication and possible allergies of a specific patient. This list is composed and controlled by the treating healthcare professionals. These summaries are not centrally saved, but are kept with the original healthcare provider and are retrievable for others via the EHR system, but only if they are treating that specific patient.

The EHR is a service, provided by the Dutch government, which is exclusively accessible for general practitioners (primary care), pharmacists and medical specialists (hospital care) since July 2009. Company doctors, health insurance, and other institutions are excluded from access to the EHR. The law on EHR adopts an opt-out, rather than opt-in system, meaning that patients will automatically participate unless they make objections. This can be done for the complete record or for specific parts of the medical information being exchanged through the EHR system.¹ Participation for healthcare professionals is on a voluntary basis at this moment, but the law on EHR (waiting a final approval from the Dutch government) will make it obligatory. In the Netherlands, the law on EHR (which is actually a modification of an already existing law) has already passed the lower house (House of Representatives) and is now awaiting its final approval from the upper house (Senate). The exact date of implementation is

unknown, because the discussion by the upper house is not expected to start until after the summer of 2009.¹

Before implementation, it became apparent that many people disagreed with the EHR. In November 2008 the Dutch government sent every citizen an information letter and an objection form, 3% filled in this form. In May 2009 an inquiry was sent to a random sample of general practitioners and medical specialists, and asked if they had filled in the objection form for their own personal participation. Almost one third (31%) claimed to have filled in the form and 25% were still considering it. The most commonly voiced objections focused on the unsatisfactory guarantee of privacy and the assumed lack of security.² Patients can, however, prevent their information from being exchanged via the EHR system, although it might turn out to be disadvantageous for medical treatment or even be harmful for patients.

The Netherlands is not the only country planning a national electronic health record. For example, in the United States the economic recovery package concerning the financial crisis will provide bonus payments to doctors who adopt and effectively use electronic health records. President Obama has set a goal of computerising all of America's medical records within 5 years. Another example is Denmark, where a centralised computer database connects 98% of general practitioners, all pharmacists and all medical specialists.³

II. The Regional Predecessors of the Electronic Health Record.

The electronic health record is not a new concept in medicine. The first regional electronic health record in the Netherlands was introduced in the academic hospital in Leiden on behalf of the Dutch government in 1972. This rudimentary version of the EHR was already capable of registration of a summary of diagnosis for each patient and for consulting laboratory test results. By 1978 the database contained information of 350000 patients with 500000 diagnoses and 2000000 laboratory test results.⁴ In the last three decades regional predecessors have been introduced on a large-scale, and today information from nearly eight million patients (on a population of 16.5 million people) is being exchanged via the regional electronic health records.⁵ It is just a small step to exchange this information nationwide with the EHR.

* *Laurens J. van Baardewijk, student in Medicine, Leiden University, The Netherlands.*

¹ See: S. Nouwt, 'Nog Steeds Onduidelijkheden rond de Wet EPD', *Medisch Contact*, 6 May 2009, <http://medischcontact.artsennet.nl> and <http://medischcontact.artsennet.nl/tijdschrift/Tijdschriftartikel/Nog-steeds-onduidelijkheden-rond-de-Wet-EPD.htm> (accessed on 27 August 2009).

² M. Katzenbauer, 'Te Vroeg voor Landelijk EPD', *Medisch contact*, (20) 2009, pp. 880-883.

³ See: E. Harrell, 'In Denmark's Electronic Health Records Program, a Lesson for the U.S.', *TIME* 2009, <http://www.time.com> (accessed on 27 August 2009).

⁴ E.J. Groenevelt, J.A. van Nieuwkoop, C.G. Wouters, A.D. de Jonge, 'Nobin-Zis-Project', *Centrum* 1978-8, pp. 207-210.

⁵ A. Nieuwenhuijzen, Kruseman & L. Wigersma, 'Klink moet stoppen met zijn landelijk EPD; Patiëntendossier', *NRC Handelsblad*, 2009, 14 May 2009, p. 7.

To sum up, the EHR is a carefully controlled exchange platform for summaries of healthcare records, and is the product of a continuous development. With the introduction of the law on EHR, healthcare professionals are obliged to participate. However, patients can object to their information being exchanged via the EHR system.

III. Is our Privacy in Danger?

There is doubt concerning the guarantee of privacy in the EHR, and this doubt is as old as the first regional health record. Below I will discuss three issues concerning the privacy of patients in the EHR: autonomy, confidentiality and security.

The first interpretation of privacy can be described as the right to decide for yourself who may read your health record and who may not. The newly formed law on EHR, as well as the already existing law on medical treatment, states that a person has the right to object to his records being exchanged via the EHR (partly or totally). In practice, this can be done either by submitting an objection form, or by contacting a specific health care provider. Thus, the autonomy of patients is still guaranteed in the EHR.

The second explanation of privacy considers confidentiality. This is a concept in medicine derived from the Hippocratic Oath (which goes back to the 4th century B.C.) and is traditionally taken by medical students to ethically practice medicine: “Whatever I see or hear in the lives of my patients, whether in connection with my professional practice or not, which ought not to be spoken of outside, I will keep secret, as considering all such things to be private.”⁶ This oath is of no legal force or relevance, but all healthcare professionals have to sign a pledge of secrecy. It follows that medical professionals are forbidden to use the EHR for anything other than medical reasons. This is controlled by both the medical disciplinary tribunal and Dutch criminal law.

The third explanation of privacy is that of security of the system. First, the information in the EHR is better secured than that of non-electronic information systems. An example can clarify this. In November 2008 a reporter of RTV West, a local Dutch radio network, asked for a copy of medical records in several hospitals and asked to fax them to his home. He easily got six out of eight requests without any questions. In the two other cases the hospitals solely requested a written permission (i.e. a signature).⁷ Such a mistake cannot be made in with the EHR, because authorisation is required when consulting the EHR, and the EHR only allows the healthcare provider treating a patient to consult his or her medical information. Second,

⁶ M. North, ‘The Hippocratic Oath’, *National Library of Medicine*, 2002, http://www.nlm.nih.gov/hmd/greek/greek_oath.html (accessed on 27 August 2009).

⁷ See: J. van Vegchel, ‘Medische gegevens liggen op straat’, *RTV West*, 11 November 2008, <http://www.westonline.nl> (accessed on 27 August 2009)

a record is maintained of who has received information from a specific patient and when, in order to ensure that healthcare providers are justifiably consulting medical information. In addition, patients can check this file for incorrect usage. Security is a technical problem that can be solved with ongoing technological progress. We will have to learn from other fields such as banking systems for making an airtight security system.

IV. Advantages of the Electronic Health Record.

There are several expected advantages of the EHR. The most important advantage, in my opinion, is a smaller chance of making treatment errors. By consulting the EHR, medical staff sees what medicines have been prescribed or which treatment has been chosen, and can adapt to it. The EHR checks chosen treatment plans for possible contraindications or allergies and, if so, a notification appears. Furthermore, with the electronic record it is more difficult to make errors through miscommunication because of unreadable handwriting.

People tend to go to their hometown for medical care, but that is not always an option. Healthcare shopping is increasing, because of waiting lists or specialised centers. The advantage of the EHR is that it will enable healthcare providers to consult a patient's current information quickly and easily, instead of the slow and possibly unsecured communication via fax machine, paper letters, or e-mail. This is essential in an acute setting or during severe illness, in which patients themselves are not always able to coherently reproduce their crucial medical history. It is also more convenient for a patient to have their medical information readily available.

With an electronic health record, it is easier to standardise treatment or introduce clinical pathways. A clinical pathway is a standardised treatment protocol, to streamline multidisciplinary patient care of common diagnoses. These clinical pathways could serve as useful tools for medical decision-making in the future. For example, this system could introduce new concepts or signal problems with treatment. Also, it may be possible to communicate with patients by question forms. These are features that exceed the capabilities of current electronic health record that currently only act as documenter and collector of information. However, eventually the EHR will not only be a documenter, but also a new instrument in medical treatment.

The EHR makes data collection possible on a large scale, previously unknown in medical research. Analysis of these data (made anonymous for research purposes) can monitor public health, signal side effects and compare medical facilities and healthcare providers. It can therefore improve medical knowledge and treatment. ⁸

⁸ M.A. Rodwin, 'The case of public ownership of patient Data', *JAMA* 2009-302, pp. 86-88.

Technological development has its price. However, it is expected that eventually, the EHR will save money. The prevention of costly duplication of tests and treatments, the decrease of labor associated with time consuming documentation, and the expediting of searching for medical records are all examples of financial benefits of the EHR. Nevertheless, the major advantages of the EHR will rather be medical than financial.

Conclusion

The EHR is a collection of summaries from healthcare records, created with the purpose of exchanging medical information quickly and easily nationwide. Unfortunately, many patients and healthcare professionals alike mistrust it. In my opinion this is partly based on misleading descriptions of the EHR, descriptions in which the EHR is seen as a database that lacks privacy and security. The regional predecessors are now being introduced on a large-scale, and it seems only a small step to exchange this information nationwide. However, people are still able to exclude their medical information from being exchanged in the EHR if they elect to opt-out, even though this decision may turn out to be disadvantageous or even be harmful.

In this article I summarised some arguments that hopefully invalidate the fear of EHR, the most important being the decreased chance of making treatment errors, the improvement of medical knowledge, and the fact that the EHR is a system that can actively help in medical decision-making. The EHR is a welcome enhancement, acting not only as means of documentation, but also a new instrument for medical treatment.

