Attitudes and behaviors related to the introduction of electronic health records among Austrian and German citizens

Alexander Hoerbst[a,*], Christian Dominik Kohl[b], Petra Knaup[b], Elske Ammenwerth[c]

[a] Research Division eHealth and Telemedicine, UMIT - University for Health Sciences, Medical Informatics and Technology, Eduard-Wallnoefer-Zentrum 1, 6060 Hall in Tirol, Austria
[b] Institute of Medical Biometry and Informatics, INF 305, University of Heidelberg, Germany
[c] Institute for Health Information Systems, UMIT - University for Health, Sciences, Medical Informatics and Technology, Eduard-Wallnoefer-Zentrum 1, Hall in Tirol, Austria

ARTICLE INFO

ABSTRACT

Background: Acceptance by citizens seems to be crucial for the future success of an electronic health record (EHR) in Germany and Austria. We analyzed citizens' knowledge and expectations about the concept and contents of an EHR. We also addressed possible fears and barriers, and we investigated desired EHR functionalities relevant to citizens in the Austrian and German population.

Methods: Standardized interviews of a convenience sample of 203 Austrian and 293 German citizens recruited in two metropolises.

Results: Up to three-quarter of the interviewed citizens already collect and store medical documents at home, mostly in paper-based form. No respondents had already used an Internet-based personal health record. Between 80% and 90% of respondents were supportive of the idea of an electronic exchange of health-related data between health care providers as core functionality of an EHR. However, many respondents formulated concerns with regard to data protection and data security within an EHR. The EHR functionalities most supported by respondents included the electronic vaccination record, online information on doctors and hospitals, and the administration of appointments and reminders.

Conclusion: The results indicate a generally positive attitude towards the EHR. However, the study shows that data protection is an issue for many citizens, and that despite strong media discussion, there are information deficits with regard to the national EHR initiatives.

© 2009 Elsevier Ireland Ltd. All rights reserved.

1. Background

Ongoing medical progress leads to an increase in medical knowledge. This rising amount and complexity of medical knowledge leads to an increase in specialization of health professionals, and to a strong need to exchange information between healthcare providers [1].

The concept of an electronic health record (EHR) sets out to close the gap between institution-specific patient data and a comprehensive, probably lifelong, collection of patient's health and healthcare data [2] that supports information

* Corresponding author. Tel.: +43 50 8648 3814; fax: +43 50 8648 67 3814.
  E-mail address: alexander.hoerbst@umit.at (A. Hoerbst).

exchange between healthcare providers. For this paper, we want to understand the term EHR as a trans-institutional, digital repository of information regarding the health status of a subject of care [3].

Within the concept of the EHR, the patient is understood as an active partner who is accessing, adding and managing health-related data. The active integration of the patient is said to support the quality of care as well as the compliance of the patient [4,5]. An EHR that allows the patient to actively manage his/her data is also called a personal health record (PHR). Waegemann distinguishes five types of PHRs, such as off-line personal health records, that are often paper-based and comprise copies of clinical documents; web-based personal health records; and provider-based personal health records where hospitals and other providers make some of the patient's health information available for the patient [6]. For this paper, we want to understand the term PHR as that part of the EHR that is accessible to the patient.

The patient thus takes a prominent position for the success of the future implementation of an EHR. Therefore, it seems important that, apart from institutional requirements and health professional related requirements, the patients' needs are also taken into account, both as an EHR user and receiver of EHR-based patient care. As the acceptance by patients and citizens is crucial for the future success of the EHR, it is mandatory to address those issues early enough to identify expectations and barriers that can then be dealt with during future EHR implementations.

Both in Austria and Germany, initiatives are under way to implement nationwide EHRs. In both countries, patients are expected to be a relevant future user group. However, at the moment it is unclear as to how well patients (or more generally, citizens) are informed of the concept of an EHR, how they judge the basic idea of the EHR, which fears and barriers may currently exist, and which functionality citizens see as important. While those questions have partly been addressed for other countries [7–9], a comprehensive investigation from Germany and Austria is missing.

Our study takes place in two large cities in Austria and Germany, which are countries with a comparable life standard and health care structures, but that have different roadmaps and concepts with regard to a nationwide EHR.

The objective of the present paper is, on the basis of a survey of citizens in both countries, to analyze citizens' knowledge about the concept of an EHR, to address the possible fears and barriers with regard to the EHR, and to investigate the desired EHR functionality.

2. Status of the electronic health record in Austria and Germany

The following remarks provide a brief overview of the current situation with regard to the implementation efforts of the electronic health record in the two countries of the present study.

2.1. The EHR in Austria

Every citizen in Austria already possesses a smart card issued by insurance companies. This e-card contains basic admin-istrative information and is used for patient identification and for check of insurance coverage both in inpatient and outpatient areas. In 2005, the health reformation law (Gesundheitsreformgesetz) [10] provided the initial basis for the introduction of an electronic health record in Austria. The law explicitly defined the goal of EHR introduction but a specific timeframe for the introduction is not defined in the law. EHR is here understood as health-related information that is shared on demand between healthcare institutions, using a central EHR directory service to locate and access clinical documents. In the public media, the term ELGA (Elektronische Gesundheitsakte, electronic health record) is used to name this Austrian EHR concept. For the patient-related view, the name "patient portal" is in use.

A feasibility study was commissioned to develop the first concepts for an EHR implementation [11]. The first results of the study were presented at the end of 2006, in turn describing the present legal, scientific, organizational, and functional situation as well as the directions for a basic EHR architecture and functionality. In mid-2007, a master plan for an Austrian EHR was developed [12]. This master plan describes the creation of a central document meta-index which helps to search and retrieve medical documents of all participating institutions. Based on this document registry, the master plan describes the following EHR core functions: exchange of lab reports, radiology reports, discharge letters, and medication information between institutions. Later, a patient portal should support the citizen to access his/her clinical documents, and also to add health-related information.

At the end of 2007, the detailed planning of all the components commenced. At the moment, all the results are being discussed by the commission for state health (Bundesgesundheitskommission). No final decision had been taken regarding the actual implementation of an EHR in Austria, and no detailed plans or prototypes for the patient portal are available yet.

Apart from the efforts taken by the state, there are several concrete initiatives establishing prototypes of an EHR in Austria, such as H.ELGA [13] or health@net [14]. These projects closely cooperate with public initiatives, but share a more scientific view on the EHR.

The opinions of health professionals with regard to the Austrian EHR initiatives are mixed—major organizations of health professionals such as physicians and pharmacists are quite critical, fearing increased transparency, cost pressure, and reduced confidentiality of patient data [15,16]. Whereas hospital operators or public bodies definitely have a positive attitude towards the introduction of an EHR as they expect mid-term a positive impact on costs and quality of patient treatment. In the public media, however, the EHR initiative has not yet been in the center of larger critical discussions.

2.2. The EHR in Germany

In Germany, the development of an EHR is currently not a national initiative but a free market. However, as a first step towards an EHR and as part of Germany's strategic e-health intentions, the German law (Book V of the German Social Welfare Code) claimed the introduction of an electronic health card for all German citizens by 2006. This card should, as a