

Chapter 49

Use and Reuse of Electronic Health Records: Building Information Systems for Improvement of Health Services

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ABSTRACT

Electronic Health Record (EHR) is a term with several meanings, even if its very definition allows distinguishing it from other electronic records of healthcare interest, such as Electronic Medical Records (EMR) and Personal Health Records (PHR). EMR is the electronic evolution of paper-based medical records, while PHR is mainly the collection of health-related information of a single individual. All of these have many points in common, but the interchangeable use of the terms leads to several misunderstandings and may threaten the validity and reliability of EHR applications. EHRs are more structured and conform to interoperability standards, and include a huge quantity of data of very large populations. Thus, they have proven to be useful for both theoretical and practical purposes, especially for Public Health issues. In this chapter, the authors argue that the appropriate use of EHR requires a realistic comprehensive concept of e-health by all the involved professions. They also show that a change in the “thinking” of e-health is necessary in order to achieve tangible results of improvement in healthcare services through the use of EHR.

DOI: 10.4018/978-1-4666-8756-1.ch049

INTRODUCTION

Electronic records are being produced in several health contexts, mainly hospital, laboratory services, imaging services, insurance claims.

The aim of this chapter is to understand the nature of electronic health records, their subtypes, their expectations, the grey areas, those that need more clarification and disambiguation, the concerns about misuse and misinterpretation, highlighting the real potential for the ethical development of Information technology in healthcare.

As it has been stated (Habib, 2010), EHR technology is an important piece of health information technology infrastructure and is a cornerstone for reform health care systems across the world. EHR is an important tool for the improvement of health care quality, efficiency, and patient safety, diminishing research costs, decreasing the inefficiencies associated with paper based research and aligning research with implementation of new health technology devices. (Weiskopf & Weng, 2012).

Most countries are now focusing healthcare delivery through a health informatics strategy. EHR has been focused as the central power tool in most of the national e-health and HIT strategies, including telemedicine, personalized medicine, and large-scale genome analysis projects (Ruch, 2010).

DEFINITION OF EHR

A semantic problem that researchers, engineers and developers in the field of Health Technology will encounter if they intend to extend the research on the topic both in Biomedical and in Engineering literature is the confusion between EHR and other electronic records. We believe that the core of the correct evolution of such a vision with the patient at the centre of care delivery needs a clear definition of what is and what is not an “electronic health record”.

According to the current literature, the definition of EHR is evolving and still confusing (Hayrinen, Saranto & Nykanen, 2008). Electronic health records may include all health-related information on electronic support: Electronic medical record (EMR), Personal health record (PHR) and Electronic personal record (EPR). All these terms are often used interchangeably, although there are huge differences between each of them. This confusion has been propagated not only by the scientific community but by governments, consultants and vendors as well. (Healthcare Information and Management Systems Society [HIMSS] 2006).

It is conceivable to consider “widely” all these as health electronic records but scientists, developers and users are confused by these interchangeable meanings. Electronic health records need first of all to be defined as clearly as possible, in order to avoid any confusion in its interpretation and application. This is the reason for which we call the attention to the following definitions and clarifications.

In 2008 the US National Alliance for Health Information Technology defined EHR, EMR and PHR as separate concepts (National Alliance for Health Information Technology, 2008):

Electronic Medical Record: *An electronic record of health-related information on an individual that can be created, gathered, managed, and consulted by authorized clinicians and staff within one healthcare organization.*

Electronic Health Record: *An electronic record of health-related information on an individual that conforms to nationally recognized interoperability standards and that can be created, managed, and consulted by authorized clinicians and staff across more than one healthcare organization.*

Personal Health Record: *An electronic record of health-related information on an individual that conforms to nationally recognized interoperability standards and that can be drawn from multiple sources while being managed, shared, and controlled by the individual.*

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