

Chapter 3

Closing the Gap: E-Health and Optimization of Patient Care

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ABSTRACT

Brought to life by contemporary changes of our world, e-health offers enormous possibilities. In the World Health Organization's World Health Assembly resolution on e-health, WHO has defined e-health as the cost-effective and secure use of information and communication technologies in support of health and health-related fields, including healthcare services, health surveillance, health literature, and health education (WHO, 2005). It is impossible to have a detailed view of its potential as e-health affects the entire health sector and is a viable tool to provide routine, as well as specialized, health services. It is able to improve both the access to, and the standard of, health care. The aim of the chapter is to focus on how e-health can help in closing one gap - optimizing patient care. The examples included and references provided are ready to be introduced in practice immediately. Special attention is dedicated to cost effectiveness of e-health applications.

INTRODUCTION

Over the past decade the interest in e-health has risen very quickly. E-health is the application and extensive use of information and communication technology in all areas of health care, from delivery of professional care to patients to the life-long education of citizens and medical professionals. In the World Health Assembly resolution on e-health

in 2005, the World Health Organization (WHO) has defined e-health as the cost-effective and secure use of information and communication technologies in support of health and health-related fields, including healthcare services, health surveillance, health literature, and health education (WHO, 2005). Despite the fact that almost all recognize the WHO as a world leading authority, responsible for providing leadership on global health matters, setting norms and standards, etc., and all its members respect its decisions, the term e-health is not accepted world-

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wide. Thus, before we begin it is necessary to clarify the confusion in terminology.

Vocabulary

Until the end of the 90s the term telemedicine was widely used. This word is a combination of two Greek words $\tau\acute{\eta}\lambda\epsilon$ = tele - meaning “at a distance” and “medicina” or “ars medicina” meaning “healing”. The introduction of “telemedicine” is ascribed to Thomas Bird, who in the 1970s had used the term to illustrate healthcare delivery, where physicians examined distant patients through the use of telecommunications technologies (Strehle & Shabde, 2006). But it may be well forgotten that in 1906 Einthoven published a paper on telecardiology (Einthoven, 1906)!

In the 1980s and 1990s multiple working definitions of telemedicine were introduced. Some of them were very broad such as “something to do with computers, people and health”, others – extremely narrow, e.g., “the healthcare industry’s component of business over the Internet” (Pagliari, 2005, see slide 8). More on various telemedicine and e-health definitions may be found in Oh, Rizo, Enkin, and Jadad (2005).

With more involvement of electronic communication systems, the major international organizations – the World Health Organization (WHO), the European Union (EU) and the International Telecommunication Union (ITU) - have officially adopted the term “e-health”. The definitions of e-health in the literature are also numerous. The reader may come across definitions as short as three words, i.e. Internet-related health activities or as long as 74 words (Eysenbach, 2001; HIMSS 2008; Oh et al., 2005; Silber, 2003; WHO, 2005). One of the best definitions, short but covering all aspects of e-health, is the one published on Gunther Eysenbach’s homepage (2006), where e-health equals medicine plus communication plus information plus society (e-health = Medicine + Communication + Information + Society). This definition covers all – the application of informa-

tion and communication technology in all medical fields plus the influence that e-health has on society, as health care is a social service.

At the First High Level Ministerial Conference on e-health, May 22-23, 2003, the European Commission accepted that e-health is the use of modern information and communication technologies applied to meet the needs of citizens, patients, healthcare professionals, healthcare providers, as well as policy makers (Silber, 2003). This was done as an attempt to put order among the mass of definitions applied in this field, at least at the level of the European Union.

For many authors telemedicine and e-health are synonyms and are used as synonyms in this chapter, too. Others accept that e-health is a broader term and includes telemedicine. A third group of authors separate both expressions, acknowledging that telemedicine incorporates telecardiology, teleradiology, telepathology, teleophthalmology, teledermatology, telesurgery, telenursing, etc., while e-health comprises e-Santé, information and communication technologies in health (ICT-Health), all types of health communication services, patient information systems, e-education, e-prescription, etc. Those who are particularly interested in detailed semantics of the words telemedicine and e-health may refer to the TM Alliance (2004).

In the attempts to distinguish between various aspects of e-health, several other terms have also been introduced:

- mHealth or mobile health, i.e., efficient high-quality healthcare services for mobile citizens;
- uHealth or ubiquitous health care, focusing on e-health applications that provide health care to people anywhere at any time using broadband and wireless mobile technologies.

So, what is the correct term – e-health or telemedicine? The consensus now is for e-health.

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