Chapter 3
The European Perspective of E-Health and a Framework for its Economic Evaluation

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ABSTRACT

E-health is a priority of the European i2010 initiative, which aims to provide safe and interoperable information systems for patients and health professionals throughout Europe. Moreover, the use of electronic storing and transmission of data to patients is increasing while through the deployment of e-health applications, health care is improved in terms of waiting time for patients. The concentration results from the cumulative incidence of chronic-degenerative pathologies, the greater utilization of biomedical technologies, and the increased health services demand. Finally, the interest towards electromechanical systems means the realization of tools of small dimensions, which have tremendous advantages thanks to their invasivity and greater diagnostic-therapeutic effectiveness. Therefore, an economic analysis has to take into consideration the use of biomedical technology, the analysis of alternatives, the selection of the economic evaluation technique, and the identification and quantification of the costs and benefits.

INTRODUCTION

Innovation is essential to improve accessibility, effectiveness and efficiency of healthcare delivery. E-health promises these improvements, provided we comply with fundamental requirements with respect to quality and safety. E-health must be implemented thoughtfully to provide the maximum advantage of the innovation. However, there exists no structured framework of the basic requirements of quality and safety issues. This often hampers development, implementation and usage. Therefore, a framework of quality and safety requirements must evolve to support and encourage innovation.

The analysis of an innovation, which contributes to quality, safety and efficiency, leads to an evaluation process, which should be followed to assess an e-health application. The issue of minimum requirements is a political one while

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the requirements themselves are the subject of research. Furthermore, one problem in addressing this issue is the mere fact that e-health is under development and that it can assume various forms and sizes. It is, therefore, hardly likely to formulate all requirements in advance. For each service offered to the market, it is anticipated that different aspects will have to be assessed while a rigorous program of requirements will make innovation difficult.

It is worthwhile mentioning that e-health is a priority of the European i2010 initiative, which aims to provide safe and interoperable information systems for patients and health professionals throughout Europe. Based on a pan-European survey on electronic services in healthcare, 87% of general practitioners use a computer and 48% have a broadband connection. Moreover, the use of electronic storing and transmission of data to patients is increasing while through the deployment of e-health applications, health care is improved in terms of waiting time for patients. There is, however, considerable space for improvement since ICT assists many aspects of the doctor-patient relationship. This includes remote monitoring services (used in Sweden, the Netherlands and Iceland), electronic prescriptions (used by only 6% of EU general practitioners, and only three Member States, which include Denmark, Netherlands and Sweden), and medical care, practiced by only 1% of general practitioners, with the highest percentage in the Netherlands (5%). The survey also shows that e-health services are used where the broadband Internet use is widespread. In Denmark, for example, where the penetration of broadband Internet is the highest in Europe, 60% of doctors are currently exchanging emails with patients. On the contrary, the EU average is stuck at 4%. Overall, despite considerable progress, there are still notable differences between different countries. The main barriers to adoption of new technologies in health care include the lack of training and technical support. To encourage the routine use of ICT in health care and accelerate the adoption of appropriate strategies at the country level, the Commission adopted an action plan for e-health, under the title 'Lead Market Europe' (Commission of the European Communities, 2007).

The analysis aimed at the cost-benefit of the patient treatment, an essential part of the quality evaluation, is widely documented in healthcare literature. The focus results from the cumulative incidence of chronic-degenerative pathologies, the greater utilization of biomedical technologies, and the increased health services demand. The method is based on the formulation of testable criteria and standard values with respect to the particular parts of the service. Therefore, it can determine the criteria, which are not met, leading to a provisional acceptance of the e-health application.

Methods of comparative analysis, like the cost-benefit approach have to be adapted to the various aspects of the healthcare process, in order to determine the advantage of a traditional model of care with respect to an integrated one, which is based on new computer science technologies. Among the new methods of book keeping that operate in this direction, the most widely used is the Activity Based Costing (ABC). ABC is a method of imputation of the costs incurred by the activities of the cost centers. Therefore, every re-engineering decision can be isolated, and estimated in relation to the cost that it incurs.

In this chapter, we will provide an overview of the European strategy in e-health, the research programs and initiatives of the European Union, as well as a framework for the economic evaluation of e-health applications (Drummond et al., 2005; Scrivens, 1997; Hughes & Humphrey, 1990).

BACKGROUND

Commissioner for Health and Consumer Protection Markos Kyprianou said: 'e-health can improve health care. Even more important, it is possible to reduce medical errors and save lives.