Chapter 54
Physicians' Acceptance of E–Health

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ABSTRACT

Physicians' acceptance of e-health refers to physicians' voluntary or intended use of e-health services or applications—defined as "health services and information delivered or enhanced through the Internet and related technologies" (Eysenbach, 2001). Physicians exert a crucial influence on the successful diffusion and implementation of health information technology, largely because of their service-generating role in health care. Drawing on the Technology Acceptance Model—TAM (Davis, Bagozzi, & Warshaw, 1989) and its extended/adapted versions, empirical evidence has accumulated to suggest the importance of cognitive instrumental processes—especially usefulness perceptions—in accounting for physicians' acceptance of e-health. This chapter discusses physicians' acceptance of four e-health applications: (1) Electronic prescriptions—i.e., IT-based management and automation of drug prescriptions; (2) EHCR systems—viewed as IT systems for electronic recording and storage of patient information; (3) Patient-physician and physician-physician online communication; and (iv) Telemonitoring applications—i.e., IT systems enabling remote monitoring of patients.

INTRODUCTION

e-Health is a broad, interdisciplinary field concerned with the intersection of health and information and communication technology (ICT)—with particular emphasis on Internet-related technologies. Rarely used before 1999, the term 'e-health' has become prevalent in the media and scientific literature. From 2001 to 2006, a series of six papers titled 'What is e-Health' (with different subtitles) were published in the leading *Journal of Medical Internet Research*; these highly-cited articles were the first, and perhaps best, formal efforts to define and map the scope of e-health. In the arguably most influential definition so far, Eysenbach (2001) referred to e-health as "health

services and information delivered or enhanced through the Internet and related technologies". Key elements of this field include the use of networked digital and Internet technologies, especially for communication purposes, and its extension across all health stakeholder groups—ie, e-health applications target not only health professionals or patients.

Much of the literature on e-health, and from the wider field of medical informatics, has advocated health information technology (health IT)—especially, interoperable health IT systems enabling health information exchange through the Internet or dedicated digital networks—as the means to address some endemic problems of health care (ie, lowering health care costs and reducing medical errors). Likewise, e-health offers unprecedented potential for enhancing the efficiency of health care processes and the quality of patient services (eg, patient diagnostic and therapeutic procedures).

Yet, despite its vast potential, integrating information technology into health care provision is not without problems; several management and technological bottlenecks—such as changing the behavior of patients and health professionals—may hinder the successful diffusion and implementation of e-health applications and, if so, need to be overcome (Chau & Hu, 2002). Over the past decade, scholars have documented substantial differences in patients' and physicians' e-health related attitudes and behavior. In general, patients have shown a more optimistic view of e-health services—eg, patients' Internet health information seeking, 'patient–physician' email communication, or patient-accessible medical records, compared to physicians. Moreover, physicians' resistance has been identified as a key barrier for the organizational implementation of health IT systems.

Many authors have highlighted the crucial influence of physicians on the diffusion and implementation of various health IT systems, such as e-health applications—largely because of physicians' service-generating role in health care. Likewise, reviews of the literature—from the fields of management, information systems, or medical informatics—underscore that the growing interest and importance of research focusing on physicians' reactions to e-health, and other health IT systems, is well justified on economic and social grounds. In this area, the term *physicians' acceptance of e-health* is commonly used to refer to physicians' voluntary or intended use of e-health services or applications. At least two types of studies subsumed under the umbrella of 'e-health acceptance research' are differentiable, based on the research question being addressed: first, many studies have offered descriptive accounts of 'whether or not' specific e-health applications have been adopted or implemented; second, considerably less research has attempted to clarify 'how', and more importantly, 'why' the different e-health applications are used (or rejected).

This chapter focuses on latter type of 'e-health acceptance' studies—that is, theoretically-driven research concerned with the factors that influence physicians' acceptance or resistance to e-health. First, attention is paid to (individual-level) theory of technology acceptance; for this purpose, the characteristics of TAM, TAM2, TPB, and 'context-specific' factors are discussed in relation to e-health acceptance by health professionals. Next, an overview is provided of four representative e-health applications and research areas: (1) *Electronic prescriptions*—ie, IT-based management and automation of drug prescriptions; (2) *EHCR systems*—viewed as IT systems for electronic recording and storage of patient information; (3) 'Patient-physician' and 'physician-physician' *online communication*; and (4) *Telemonitoring applications*—i.e., IT systems enabling remote monitoring of patients.

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