Chapter 7

mHealth:
A Passing Fad or Here to Stay?

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ABSTRACT

The mHealth field focuses on the use of mobile technologies to support hospital care, healthy behavior, patient monitoring, and educational awareness. It is a new field that is developing rapidly, with thousands of mHealth applications developed within the last two years alone. In this chapter, the authors discuss the current state of, and the opportunities and challenges within, the mHealth field. They also introduce the term Mobile Social Networking Healthcare (MSN-Healthcare), which they define as follows: "The use of mobile health applications that incorporate social networking tools to promote healthy behaviors and awareness among patient groups and communities." This concept has not been introduced in previous literature. This chapter is organized as follows: 1) introduction and background of mHealth; 2) opportunities for the implementation of mHealth in relation to chronic disease management, the education of health professionals, the needs of health professionals, and the decision-making process for patients and clinicians; 3) challenges concerning implementation and usability, information needs, and interactions with clinical work; 4) current application uses; and 5) future trends and conclusion.

INTRODUCTION

mHealth is a developing field that refers to the use of mobile information and communication technologies in healthcare. The universal use of mobile communication technologies within developed and developing countries makes it an economical and feasible solution in a healthcare environment. Current figures show that approximately five billion people utilize cellular phones around the world (Central Intelligence Agency, 2011), which is equivalent to 70% of the world

population (U.S. Census Bureau, 2011). Therefore, the potential for health education, training and awareness, remote monitoring, diagnostic treatment, communication between patients and providers, and epidemic outbreak tracking is further accentuated by the pervasive use of mobile health technologies around the world (Vital Wave Consulting, 2009).

In 2009, the United Nation's Vodafone Foundation Partnership produced a report showcasing over fifty mHealth projects from around the world. The report suggests that for mHealth to be successful, multi-sector collaboration between private and public enterprises is needed. Over the last couple of years, such partnerships have transpired and can be seen in today's conferences. For example, in 2010, mHealth summits were held in Washington, D.C. and Dubai, UAE. In 2011, several conferences will have been hosted mainly in the U.S. as well as in other parts of the world. These conferences provide opportunities for community members to network, collaborate, and exchange ideas concerning mHealth. The proliferation of such conferences and reports demonstrates the growing importance of this domain.

As with every new technology, there is a great deal of excitement concerning the potential of mHealth. It is our belief, however, that the benefits and challenges of mHealth need to be carefully evaluated. Researchers, policy makers, and individuals within technological organizations are trying to understand the potential of this field for patient care. There is much to learn about mHealth to determine if it is just another fad or a technology that is here to stay. Within this context, the purpose of this chapter is to provide policy makers, hospitals, clinicians, and academics with a more objective understanding of the opportunities, challenges, and benefits of mHealth.

Like previous innovations in health care, there are several factors can influence innovation within any field. In a paper describing the dissemination of innovation within healthcare, based on Everett Rogers's study concerning the diffusion of in-

novation, Berwick (2003) discussed three basic clusters that influence the spread of change within any institution. These three basic clusters are as follows: 1) the perceptions of the innovation; 2) the characteristics of the individuals who adopt the innovation; and 3) contextual factors such as leadership, incentives, or management. Berwick argues that innovation is used by individuals when it is perceived to benefit them. In time, the majority will follow suit in adopting the new innovation. Therefore, how healthcare policies and organizations support those early mHealth adopters will influence mHealth adoption within healthcare. In our opinion, the current state of mHealth adoption is in the early stages. The future level of mHealth adoption within healthcare will depend on factors such as its usefulness to clinicians and the consumer; support from healthcare organizations and the health informatics community; and the potential for companies to make a profit in the area.

This chapter focuses on the current state, opportunities, and challenges of the mHealth field. The organization of the book chapter is as follows: 1) a background section on mHealth; 2) opportunities for the implementation of mHealth in relation to chronic disease management, the education of health professionals, the needs of health professionals, and the decision-making process for patients and clinicians are described; 3) challenges concerning implementation and usability, information needs and interactions with clinical work; 4) summary of current application uses; and 5) future trends and conclusion.

BACKGROUND

In 2000, *unwired e-med* was the term used to describe what practitioners in the field refer to today as mHealth (Laxminarayan & Istepanian, 2000). It was not until 2003 that the authors Istepanian and Lacal coined the term mHealth and defined it as follows: "emerging mobile communications

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