Chapter 6.10
M–Health:
A New Paradigm for Mobilizing Healthcare Delivery

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ABSTRACT

Medical science has made revolutionary changes in the past decades. Contemporaneously, however, healthcare has made incremental changes at best. The growing discrepancy between the revolutionary changes in medicine and the minimal changes in healthcare processes is leading to inefficient and ineffective healthcare delivery and one if not the significant contributor to the exponentially increasing costs plaguing healthcare globally. Healthcare organizations can respond to these challenges by focusing on three key solution strategies, namely, (1) access – caring for anyone, anytime, anywhere; (2) quality – offering world-class care and establishing integrated information repositories; and (3) value – providing effective and efficient healthcare delivery. These three components are interconnected such that they continually impact the other and all are necessary to meet the key challenges facing healthcare organizations today. The application of mobile commerce to healthcare, namely, m-health, appears to offer a way for healthcare delivery to revolutionize itself. This chapter serves to outline an example of adopting mobile commerce within the healthcare industry, namely, in the area of a wireless medical record. In particular, it discusses an appropriate, feasible mobile solution to enable hospitals operate effectively and efficiently in today's competitive and costly healthcare environment as well as meet all the necessary regulatory requirements. The lessons learnt from these case study data should be of interest to both practitioners and researchers since they will outline realistic and feasible solutions to enable hospitals to incorporate a wireless/m-commerce solution as well as highlighting key areas for further research in this important area of high-quality, effective, and efficient healthcare management.

INTRODUCTION

Currently the healthcare industry in the United States as well as globally is contending with relentless pressures to lower costs while maintaining and increasing the quality of service in a challenging environment (Pallarito, 1996, pp. 42–44; Wickramasinghe & Silvers, 2003, pp. 75–86). It is useful to think of the major challenges facing today's healthcare organizations in terms of the categories of demographics, technology, and finance. Demographic challenges are reflected by longer life expectancy and an aging population; technology challenges include incorporating advances that keep people younger and healthier; and finance challenges are exacerbated by the escalating costs of treating everyone with the latest technologies. Healthcare organizations can respond to these challenges by focusing on three key solution strategies, namely, (1) access – caring for anyone, anytime, anywhere; (2) quality – offering world-class care and establishing integrated information repositories; and (3) value – providing effective and efficient healthcare delivery. These three components are interconnected such that they continually impact the other and all are necessary to meet the key challenges facing healthcare organizations today.

In short then, the healthcare industry is finding itself in a state of turbulence and flux (Wickramasinghe & Mills, 2001, pp. 406–423). Such an environment, we believe, is definitely well suited for a paradigm shift with respect to healthcare delivery. Therefore, in this chapter we address the issue of wireless solutions for healthcare delivery and management.

First, we discuss the findings from INET's study on mobile Internet (wireless) technology in healthcare by Ontario Hospitals in Canada. We use these findings as a launching place to review a rigorous way to accelerate healthcare delivery improvements. Next, we outline some preliminary evidence for using a standardized mobile Internet (wireless) environment in healthcare. For example,

INET International is advocating the use of a wireless healthcare portal to validate the possible reduction in IT infrastructure costs. A portal may reside on a wireless PDA device as single point of contact for clinicians to obtain immediate patient data (radiology reports, lab results, and clinical findings). This wireless portal may also improve patient care outcomes with access to the best available clinical evidence at the point of care. We shall also describe the current status of a standardized mobile Internet (wireless) environment in terms of technology requirements, security readiness, and IT management practices. In addition, we will also outline some of the key challenges that a hospital's IT department, medical units, administration, and clinicians will face regarding a wireless project and provide some reasonable solutions to these challenges. Finally, we shall outline the key steps necessary for a hospital to transition from proprietary information systems to a three-tier Web-based architecture.

INETS STUDY IN MOBILE INTERNET TECHNOLOGY IN HEALTHCARE

INET International Inc. delivers rigorous e-business acceleration projects in large corporate, government, and healthcare organizations. The organization focuses on custom Mobile, Internet, Intranet, Extranet (INET), and wireless solutions. It was founded by Steve Goldberg in 1998 and it leads a Wireless Technology Consortium (WTC) to collect evidence on the best way to use wireless technology to accelerate healthcare delivery improvements. These applications are designed to improve patient care, reduce costs, increase healthcare quality, and enhance teaching and research.

Over a period of 2 years INET has been conducting research that has been directed at how to apply mobile Internet wireless technologies' low-cost advantages to evolve a wireless health-

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