Chapter 9
Mobile Solutions for Managing Health Care

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ABSTRACT

Wirhe project is an international collaborative study that focused on the future of healthcare needs, technology requirements and solutions for effective use of wireless platform for health care delivery. In this chapter, the authors present results of a Wirhe survey of 85 experts and individual interviews with 35 experts. The authors asked their opinions on the current status of adopting wireless equipment in health care, unmet needs in serving hospital in-patients and outpatients, and their views on the incorporation of wireless platform for future health care delivery and personal health management. Key findings are that 1) both remarkable quality improvements and process enhancements can be expected from thoroughly utilizing the wireless technologies and mobile solutions, 2) integration of personal health monitoring and professional health management is a key issue to be addressed and 3) health promotion and illness prevention will grow by utilizing mobile solutions. As a result of this study, they propose a framework that can be used in developing wireless health care solutions for managing diseases and related health problems. It can also be used to structure and stratify the needs by importance and utility, to anticipate which technologies and solutions are needed next, and to estimate how large the market size may be for industries.

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INTRODUCTION

Healthcare is a large industry that spends globally USD 6 trillion per year (in 2008). The US alone spent USD 2.3 trillion on health care in 2007, and spending was growing at a rate of 8 percent annually (Kalorama, 2007). According to the U.S. Department of Health and Human Services, healthcare spending in the U.S.A. will remain between 17 and 18 percent of the GDP until 2015 (http://www.cms.gov/NationalHealthExpendData/downloads/proj2009.pdf).

An aging population, rising costs of care, changes in environment such as global warming and industrial pollution, management of chronic disease, and enablement of self-care, among other challenges, challenge human health and health care systems in many countries, both developed and undeveloped. Mobile, wireless solutions offer an intriguing approach and value proposition to gather and provide information, maintain continuity of care, improve care coordination, and allow for advanced health services to be delivered, such as telemedicine. In addition, many leading information technology companies like IBM, Intel, Microsoft, Google, HP and Cisco have begun to focus on health care technology solutions that are converging / emerging toward an interoperable ecosystem that leverages wireless connectivity and mobility.

Online health record systems offer people the opportunity to input their health data including diagnostic and care history into forms, which they can share with their peers and all health professionals through the Internet. Kalorama's market study (2007) also shows rapid growth in IT; in particular, wireless technologies are seen to have big potential. They are expected to: improve patient care; reduce costs; streamline processes; help with regulatory compliance; and provide many other benefits. IT solutions may be directed at all phases of healthcare from prevention, through diagnostics into acute care, long-term disease care and rehabilitation in any setting. Healthcare professionals need real-time access to data at the point of care for improving their decision making and enhancing processes. Remote patient monitoring, e-prescription, asset management and tracking are also potential application areas of wireless technologies in health care.

The total market for wireless technologies in U.S. health care in 2005 was USD 1.8 billion, expected to grow 33 percent annually until 2010, reaching a total market size of USD 7.3 billion (Kalorama, 2007).

Microsoft Health Vault (http://www.healthvault.com/) is the first trial for a major generic commercial Personal Health Record (PHR). The dominance of Microsoft in personal computing makes this trial especially interesting. One big challenge is the connectivity throughout the health ecosystem and how users can browse their personal information in a wide range of health and wellness IT applications. Google emphasizes the continuity even more in their Health Data API service (http://code.google.com/apis/health/). They promote the use of a Continuity of Care Record (CCR) endorsed by the American Academy of Family Physicians and ASTM international as a standard of exchanging care information (http://www.astm.org/Standards/E2369.htm). The health record system has to communicate both with people and machines, and simultaneously maintain the high privacy and security of people's health data.

An IBM research team (Adams et al., 2006) summarizes the challenges of the world's health care this way: "Change must be made; the choices left to the stakeholders of today's health care systems are when and how. If they wait too long to act or do not act decisively enough, their systems could 'hit the wall' – in other words, be unable to continue on the current path – and then, require immediate and major forced restructuring."

Among IBM's recommendations are that: health care providers enhance management of chronic diseases and prevention of illness; consumers take personal responsibility for their health and maximize the value they get from the