

Chapter XVII

Applying Personal Health Informatics to Create Effective Patient-Centered E-Health

E. Vance Wilson, The University of Toledo, USA

Abstract

E-health use is increasing worldwide, but no current e-health paradigm fulfills the complete range of users' needs for Web-enabled healthcare services. Moreover, a number of obstacles exist that could make it difficult for e-health to meet users' expectations, especially in the case where the users are patients. These dilemmas cloud the future of e-health, as promoters of e-commerce, personal health records, and consumer health informatics paradigms vie to create e-health applications while being hampered by the implicit constraints of each perspective. This chapter presents an alternative approach for designing and developing e-health titled personal health informatics (PHI). PHI was developed to overcome the limitations of preceding paradigms while incorporating their best features. The chapter goes on to describe how PHI can be applied to create effective patient-centered e-health for delivery by healthcare organizations to their own patients.

Introduction

E-health is broadly defined as “health services and information delivered or enhanced through the Internet” (Eysenbach, 2001). Overall use of e-health continues to expand worldwide. Harris Interactive reports the number of Americans who have searched for health information online has increased to 117 million, and 85% of these individuals searched within the month prior to being surveyed (Krane, 2005). Outside the U.S. and Europe, e-health use has grown more slowly (e.g., see Holliday & Tam, 2004). But even in these areas further expansion seems likely as the World Health Organization and similar groups ramp up efforts to increase availability of e-health in developing nations (Kwankam, 2004; WHO, 2005).

Although some aspects of successful e-health are well-established, such as the need to provide encyclopedic health content, other aspects are less obvious. For example:

- Which services should be deployed online and how should users interface with these services?
- If communication is offered, what is the best way to coordinate this to balance needs of the public with those of healthcare representatives, for example, physicians and clinic staff?
- How should personal health records (PHR) be incorporated into e-health, who “owns” the data in these records, and what (if any) data should PHR share with records of the healthcare provider, insurer, and payer, such as employer or government agency?

These are no idle questions to the health informatics and IT practitioners who must design and deploy e-health applications. Given the large number of healthcare providers who currently are investing in e-health as an important part of organizational strategy (Lazarus, 2001; Martin, Yen & Tan, 2002), learning how to create successful e-health applications is a key topic for both research and practice.

In developing effective approaches for designers and developers of e-health, I propose that it will be helpful to view e-health, as broadly defined above, from a user-centered perspective that can incorporate best practices of preceding e-health paradigms without being limited by their implicit constraints. This chapter presents the foundational concepts underlying this approach and then describes how the approach can provide guidance in the specific context of e-health applications that healthcare providers develop to serve their own patients.

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