

# Chapter 9

## Designing the E-Health Message

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### ABSTRACT

*The tremendous growth in the use of Web 2.0 technologies, interactive computer technologies, electronic records, and mobile devices for delivery of e-health necessitates attention to design. Designing e-health requires consideration of research, including best practices embodied in design principles. This chapter reviews key background information, including central definitions, concepts, and research, followed by a presentation of 9 key considerations that are recommended for guiding the design of e-health messages. An illustrative case example demonstrates how a typology that codifies design principles gave rise to a research tool that permits the evaluation of health care websites. The case example underscores the important role of findings from research evaluations in creating a feedback loop for designers, permitting research to inform refinements in design. Overall, the 9 key considerations suggest a new paradigm for design, while also giving rise to corresponding recommendations for future research to support evolution in the field of e-health.*

### INTRODUCTION

The design of health-related websites has emerged as critical for users (Misra & Wallace, 2011a), as is the design of a variety of electronic health information technologies. It is important to explore how design and presentation modalities incorporating

user-centered design can contribute to the efficacy of health communication across health literacy levels—whether presenting health information via various large or small computer devices such as personal computers, mobile iPhones, interactive television, gaming consoles, or other technology. Thus, one may speak broadly of the critical importance of designing the e-health message.

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There is also a role for the evaluation of designs, in order to obtain information that may guide improvements in design (Misra & Wallace, 2011b). The tremendous growth in electronic health information technology necessitates attention being paid to the task of designing the e-health message, and to evaluating what has been designed.

In this regard, Crilly et al. (2011) reported that the past decade “has experienced a rapid growth of electronic health information technology in hospital and health care provider systems to enhance access and quality for service recipients” (p. 1163). Progress has also been made toward the goal of having a “fully connected national health care system” within the present decade (p. 1163). Noteworthy developments are several, including how: the growth of the Internet has permitted wider access to health-related information and health promotion; online personal health records are accessible by patients, allowing them to control their own health data; and, broadband “Internet access and mobile wireless are available in all urban and most nonurban areas” in the United States, thereby “offering new opportunities to reach individuals outside health care networks” (p. 1164). Collectively, electronic health information technology holds out the hope for overcoming barriers to health care and health information, since it may reach geographically and socially isolated populations—especially with the use of wireless handheld devices. What is envisioned is the use of electronic health information technology both “to improve conventional health services” and “reduce health disparities”—while advancing public health goals, “without compromising privacy or security” (p. 1165).

There are those who dedicate their careers to informatics, “the science of information management in health care” (Adams & Leath, 2008, p. 297). Furthermore, one may identify the field of *Health Informatics and Information Technology* (HIIT) as one characterized by new advances that are constantly emerging. Adams and Leath (2008) explained how within the health care arena pro-

viders and consumers are facing a new challenge. This challenge involves the task of understanding what technologies are available, as well as learning how to use these tools for purposes of improving healthcare or self-management of one’s own health.. The available range of effective HIIT tools support a variety of functions. These functions include the receipt, processing, transmission, retrieval, protection, and analysis of vast amounts of information and data. The breadth and scope of HIIT encompasses the global tracking of diseases, as well as reaching underserved populations, thereby impacting health disparities. Adams and Leath (2008) draw upon information disseminated by the World Health Organization in identifying potential outcomes from the use of information and communication technology, as follows:

- Health workers making better treatment decisions
- Hospitals providing higher quality and safer care
- People making informed choices about their own health
- Governments becoming more responsive to health needs
- National and local information systems supporting the development of effective, efficient and equitable health systems
- Policy makers and the public [being made] aware of health risks
- People having better access to the information and knowledge they need for better health (p. 302)

Clearly, HIIT can make vital contributions both nationally and globally. Those managing information in health care must also be concerned about the process of designing the e-health message. Information to be communicated to providers and consumers should reflect the use of designs that permit effective engagement and knowledge acquisition.

Others confirm the importance of the design of e-health messages. Woo (2008) has asserted

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