

Chapter XXVII

Planning Successful Telemedicine and E-Health Systems

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ABSTRACT

Telemedicine and e-health applications have the potential to improve healthcare organizations' ability to provide advanced services in a cost-effective manner. Given the failure rate of information technology projects in general (25%), successfully launching a new telemedicine or e-health system can be a daunting prospect—especially for organizations without experience with these new technologies. This chapter provides examples of important aspects of pre-project planning that can help set the stage for success in implementing new telemedicine and e-health applications; importantly, the lessons provided in this chapter are provided by discussing both systems that have achieved success and others that have faced significant difficulties. Key points discussed include: the benefits of involving important stakeholders and users in the planning process, effectively contracting with external technology vendors, and successfully managing expectations. Improved pre-project planning can contribute substantially to the eventual project outcome, so this is a step that cannot be overlooked.

INTRODUCTION

As healthcare providers and organizations seek to minimize costs while providing quality healthcare to patients, telemedicine and e-health applications offer promising solutions to these challenges. This chapter will explore pre-project aspects of telemedicine and e-health systems as well as implementations that contributed significantly to the technology's success or failure. Lessons learned in exploring these varying factors can be broadly applied to other Information Technology (IT) projects in the healthcare context. These lessons are important, as research has demonstrated that 25% of all IT projects fail (Keil & Mann, 2000).

Telemedicine refers to the provision of healthcare via telecommunication technology – healthcare provided at a distance. Some of the earliest telemedicine work was carried out by Wittson and colleagues in 1961, through the establishment of a video-based telepsychiatry service that linked providers in Nebraska at the Psychiatric Institute in Omaha with a distant psychiatric hospital (Wittson, Affleck, & Johnson, 1961). Since the 1960s, the number of telemedicine projects and services operating in the United States has grown so large it is no longer possible to quantify the exact number (Whitten & Kuwahara, 2003).

Telemedicine has evolved to include a wide array of services, including home-based monitoring of patients with chronic diseases (Hopp et al., 2005; McManus, 2004), providing hospice services via videophones (Bensink & Irving, 2004; Whitten, Doolittle, Mackert, & Rush, 2003), and Picture Archiving Systems (PACS) used to store and transmit images for teleradiology and similar applications (Raman, Raman, Raman, & Beaulieu, 2004). Telemedicine has been used in an assortment of medical applications, including dermatology (Burgiss, Clark, Watson, & Haynes, 1997; Chen, See, & Shumack, 2002), pathology (Joel, Leong, & Leong, 2004; Mireskandari, Kayser, Hufnagl, Schrader, & Kayser,

2004), radiology (Aas & Geitung, 2005; Crowe & Sim, 2004), psychiatry (Greenwood, Chamberlain, & Parker, 2004; Kuulasmaa, Wahlberg, & Kuusimaki, 2004), and physical therapy (Rizzo, Strickland, & Bouchard, 2004). Telemedicine researchers continue to explore innovative and efficacious methods of providing healthcare at a distance, so the capabilities of the technology will continue to improve.

While certainly related to telemedicine, e-health is a different field and type of application. Eysenbach (2001) provides a well-recognized definition of e-health:

e-health is an emerging field in the intersection of medical informatics, public health and business, referring to health services and information delivered or enhanced through the Internet and related technologies. In a broader sense, the term characterizes not only a technical development, but also a state-of-mind, a way of thinking, an attitude, and a commitment for networked, global thinking, to improve health care locally, regionally, and worldwide by using information and communication technology.

The Internet has become increasingly ubiquitous, with recent reports indicating that 70% of American adults use the Internet at least occasionally (Pew Internet and American Life Project, 2007). A large majority of those using the Internet (8 in 10) have used it as a source of health information, and every day six million Americans seek health information on the Internet (Fox, 2006; Schloman, 2003). In this context e-health, much like telemedicine, can be a useful tool and model for thinking about improving healthcare – both to advance the quality of care and contain costs. Examples of promising e-health applications include websites designed to enable provider consultations (Heinzelmann & Kvedar, 2004), providers communicating with patients via e-mail (May, Finch, Mair, & Mort, 2005), online patient support groups (Arrington, 2004).

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