Chapter 1.9
Adoption of Electronic Health Records:
A Study of CIO Perceptions

Yousuf J. Ahmad
Mercy Health Partners, USA

Vijay V. Raghavan
Northern Kentucky University, USA

William Benjamin Martz Jr.
Northern Kentucky University, USA

ABSTRACT

Adoption of Electronic Health Records (EHR) can provide an impetus to a greater degree of overall adoption of Information Technology (IT) in many healthcare organizations. In this study, using a Delphi technique, input from 40 CIO responses is analyzed to provide an insight into acceptance and adoption of EHRs at an enterprise level. Many useful findings emerged from the study. First, a majority of the participants believed that about 40-49 percent of the providers will be using EHRs by the year 2014, thus highlighting the need for studying EHR diffusion in hospitals. As predictors of successful implementations, physicians' leadership and attitude was ranked as the most important factor. Another significant determinant of success was the business model of the physicians—whether they are affiliated with hospitals or working independently. This factor highlights the need to employ different strategies to encourage adoption of EHRs among these distinct groups. All findings are discussed, including their implications for IT diffusion in healthcare.

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INTRODUCTION

In spite of many widespread uses of information technology, its potential to help in delivering quality healthcare has not yet been realized. A centralized database of patient data that can be easily accessed by healthcare providers is not yet a reality. Companies do offer proprietary solutions but often these systems cannot interact with each other. Adoption and diffusion rates for technologies such as computerized physician order entry (CPOE) have been very low (Poon, Blumenthal, & Jaggi, 2004). We seek to understand the rationale behind the rather slow adoption rate for electronic health records (EHRs). For the purposes of this study, an electronic health record refers to an individual patient's medical record in a digital format; a real-time patient health record with access to evidence-based decision support tools that can be used to aid clinicians in decision-making. EHRs can also automate and streamline a clinician's workflow ensuring that all clinical information is clearly communicated across individuals and groups that use the patient data. They can also prevent delays in responding to individuals needing urgent care (Chau & Hu, 2002). One of the complexities with EHRs is that its database activities (create, read, update or delete) can originate from many diverse sources: at a physician's office during patient visits, pharmacy counters or at hospitals when patients receive care from the hospital. In physician practices, adoption of EHR is often an individual or a small-group decision. While the adoption of technology in general at small-group levels has been studied previously (Baxley & Campbell, 2008), the current study focuses specifically on the institutional level adoption of electronic health record systems. We know from prior studies that organizational adoption of software product lines hinges on the adopter making business, technical, organizational, procedural, financial, and personnel changes (Clements, Jones, McGregor, & Northrop, 2006). Studies evaluating healthcare information systems from an enterprise perspective have identified potential conflict areas and have proposed conceptual models to facilitate implementation of healthcare Information systems (Connell & Young, 2007). Meetings have been called, retreats have been held, and policy recommendations ranging from financial incentives to promoting through educational, marketing, and supporting activities have been proposed (Middleton, Hammond, Brennan, & Cooper, 2005). And yet, implementing EHR systems remains the least understood process in the area of healthcare information systems. CIOs of healthcare institutions comprise a primary stakeholder group that is on the forefront of implementing organization-wide EHRs. It seems unlikely that the implementation of an organization-wide EHR would be undertaken without the participation and concurrence of the organization's CIO. Hence we pursue a study of CIO perceptions of critical issues surrounding organization adoption of EHRs.

AREAS OF INVESTIGATION

This section segments the areas investigated in our Delphi study under three broad categories: issues of adoption, barriers to adoption, and finally determinants of EHR adoption success. Under issues of adoption a variety of aspects of EHR adoption are examined. Barriers to Adoption and Determinants of success are of special significance as judged from many prior studies (Baxley & Campbell, 2008; Cooper, 2005; Gans, Kralewski, Hammons, & Dowd, 2005; Lowes & Spikol, 2008; Withrow, 2008) and we treat them separately.

Issues of EHR Adoption

There is no disagreement about the powerful ways in which IT can help the creation and management of EHRs and consequently improve the quality of healthcare. Computerized order entry can ensure that medication and laboratory orders are accurate