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Life After a Disastrous Electronic Medical Record Implementation: One Clinic's Experience

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The majority of users of an electronic medical record (EMR) at a family medicine clinic located in a small city in the western United States are currently quite dissatisfied with the system. The practice experienced a disastrous implementation of the EMR in 1994 and has not recovered. Although the level of dissatisfaction varies among the practice employees, several influential physicians are pushing to "pull the plug" and start over with a brand new system. The authors of this case studied this practice during a more comprehensive qualitative study of the impact of an EMR system on primary care. The practice's negative experience was particularly noteworthy, because the other four practices in the larger study were satisfied with the EMR system. As with most system failures, there are multiple organizational and other factors that have contributed to the frustrations and dissatisfactions with the use of EMR within this practice.

BACKGROUND

In his textbook, *Managing Information in Healthcare*, John Abbott Worthley (2000) discusses three "realities" that impact the use of information technology to manage information in healthcare and in other organizations. The first reality is "the general pervasiveness of information technology in managing information..." The second reality is that "computer-processed information continues to offer wonderful opportunities for significant improvements in organizational and social life, and in healthcare in particular." The final reality is that "the actual experience...with managing information technology in organizations and in society often has been disappointing and problem laden…In many cases the potential for using information technology in organizations has not been realized." Consider Burch's (1986) tongue-in-cheek life cycle of modern information systems. Stage one is wild

euphoria; stage two is mild concern; stage three is broad disillusionment; and stage four is unmitigated disaster. Unfortunately, this life cycle is often more recognizable to veterans of an information system implementation than the more traditional life cycle of systems planning, analysis, design, implementation and evaluation.

Characteristics of Healthcare Information and Information Systems

What are the unique challenges to managing information in a healthcare environment? The healthcare industry has been notoriously slow to adopt information technology to manage patient information. Multiple reasons have been discussed for this lag behind other industries. Healthcare information is sensitive information. Many users are concerned about security and confidentiality issues. Patient information is documented in medical "language" and is narrative in nature. The scope of patient information has been all-inclusive; rarely are specific criteria outlined for what will or will not be documented. As a legal document the patient record contains a lot of details about patient care.

Healthcare organizations, particularly physicians' offices, also differ from other business enterprises. In a private primary care practice, the physician or physicians own the practice. Traditional medical education has not emphasized management practices. While many practices have business managers, often these people are responsible for billing and clerical functions. Patient documentation is seen as a function of patient care under the direct control of the individual physician.

Millions of dollars have been spent exploring the use of computers to manage patient information. Today's patient record systems, however, often look very much like they did two or three decades ago—they are maintained in paper form within manual filing systems. The data the physician and other care providers seek are often illegible, fragmented, incomplete or altogether irretrievable.

Current Status of EMR Systems in Healthcare

Following a comprehensive study of the myriad of problems associated with paper-based patient record systems, the Institute of Medicine recommended that the computer-based patient record (CPR) or EMR become the industry standard by the start of the new millennium (Dick & Steen, 1991). Although this has not occurred, there is an increasing interest among physician practices to adopt this technology (Anderson, 1992; Anderson, Aydin, & Kaplan, 1995; Balas et al., 1996; Edelson, 1995; Hammond, Hales, Lobach, & Straube, 1997; Wager, Ornstein, & Jenkins, 1997; Yarnall, Michener, & Hammond, 1994). Rapid changes in health care and the influx of managed care plans have led to an increased need for accurate, timely patient care information, both at the patient-specific level and at an aggregate level (Dick, Steen, & Detmer, 1997).

The terms EMR and CPR have been used interchangeably to describe many different levels of computer systems used to maintain patient care information. One of the most widely accepted definitions comes from the Medical Record Institute (MRI), an organization dedicated to the promotion of the EMR (Waegemann, 1996). The MRI describes an attainable EMR as generally limited to a single enterprise and possessing at least the following functions:

1. an enterprise-wide system of identifying all patient information,