

## Chapter 5.16

# Physician Characteristics Associated with Early Adoption of Electronic Medical Records in Smaller Group Practices

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### ABSTRACT

To examine physician characteristics and practice patterns associated with the adoption of electronic medical records (EMRs) in smaller group practices. Primary care physicians in Kentucky were surveyed regarding their use of EMRs. Respondents were asked if their practice had fully implemented, partially implemented, or not implemented EMRs. Of the 482 physicians surveyed, the rate of EMR adoption was 28%, with 14% full implementation and 14% partial implementation. Younger physicians were significantly more likely to use EMRs ( $p = 0.00$ ). For those in their thirties, 45% had fully or partially implemented EMRs compared with

15% of physicians aged 60 and above. In logistic regression analyses that controlled for practice characteristics, age, male gender, and rural location predicted EMR adoption. Younger physicians in smaller group practices are more likely to adopt EMRs than older physicians. EMRs were also associated with an increased use of chronic disease management. [Article copies are available for purchase from InfoSci-on-Demand.com]

### INTRODUCTION

Electronic medical records (EMRs) have the potential to transform health care in the United States. Achieving the goal of a standardized, inter-

operable EMR would offer significant economic and social benefits. An EMR-based health care system would shift the balance away from acute care and specialists and toward primary care and prevention. The experience of the Veterans Affairs (VA) system over the last decade offers some important lessons in this area. In the mid-1990s, the VA invested in a system-wide EMR, eliminated excess hospital beds, and shifted its focus toward health promotion, prevention, and outpatient care. The result has been the transformation into a “full-service” integrated delivery system (Greenfield and Kaplan 2004). One recent study found that VA patients received higher quality care than Medicare patients for 11 out of 11 measures, including preventive services and treatment of chronic diseases, such as diabetes and hypertension (Jha et al., 2003).

A target date of 2014 has been established by President Bush to achieve the widespread adoption of an inter-operable EMR. Yet progress to date has been slow. According to a recent study from the Centers for Disease Control (CDC), only 12.4 percent of physicians nationwide reported using a comprehensive, fully-functional EMR (Hing, Burt and Woodwell 2007). Adoption rates tend to be higher in large academic medical centers and lower in smaller, primary care practices (Rosenthal and Layman, 2008; Hing et al., 2007). Among the reasons given for not adopting EMRs were the following: lack of capital; difficulty finding a system to meet needs; uncertain that EMR investment would produce an economic return; concern that the system would become obsolete; and apprehension over loss of productivity (Conn, 2007).

Historically, some physicians have viewed clinical information technology with skepticism and as a threat to their professional autonomy (Shortliffe, 2005). And whereas some physicians have embraced IT in the clinical setting, others are concerned that IT might interfere with the physician-patient relationship and promote a “cookie cutter” approach to medicine. In a re-

cent editorial, Hartzband and Groopman (2008) warned of the “clinical plagiarism” that occurs when physicians cut and paste each other’s notes into the patient’s record. They also argued that EMRs would constrain creative thinking and promote a rigid, unreflective approach that they termed “automatization.”

Numerous studies have examined the economic aspects of EMR adoption. These include the estimated total savings from a nationwide EMR (Hillestad et al 2005), and the “business case” for adopting EMRs at the practice level (Wang et al. 2003; Miller et al., 2005). Yet the business case alone has proven to be insufficient to bring about widespread adoption (Kleinke, 2005). Smaller practices may lack the resources to implement EMRs, and most of the benefits tend to accrue to other stakeholders, such as insurers, patients, and society.

In smaller practices, physicians are the primary decision-makers on IT investments. Without physician acceptance, a clinical information system will have little chance of success. Yet the role of physicians in EMR adoption decisions and the characteristics of “early adopters” has not been adequately studied and is poorly understood. Our purpose is to address this gap in the literature.

## **BACKGROUND AND CONCEPTUAL FRAMEWORK**

Compared to other OECD countries, the US lags 5-10 years behind in public investment for health information networks. For example, the United Kingdom (UK) has invested \$11.5 billion in an enterprise-wide EMR, as compared with \$125 million U.S. Federal spending on Health Information Technology (HIT) over a comparable period (Anderson et al. 2006). Hence these countries have moved beyond the planning stage and toward implementation. Patients in the UK can now choose hospitals and make appointments through a national, on-line scheduling system.

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