

## Chapter 4.16

# Computerization of Primary Care in the United States

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### **ABSTRACT**

*The objective of this study was to assess the current level of information technology use by primary care physicians in the U.S. Primary care physicians listed by the American Medical Association were contacted by e-mail and asked to complete a Web-based questionnaire. A total of 2,145 physicians responded. Overall, between 20% and 25% of primary care physicians reported using electronic medical records, e-prescribing, point-of-care decision support tools, and electronic communication with patients. This indicates a slow rate of adoption since 2000. Differences in adoption rates suggest that future surveys need to differentiate primary care and office-based physicians by specialty. An important finding is that one-third of the physicians surveyed expressed no interest in the four IT applications. Overcoming this barrier may require efforts by medical specialty societies to educate their members in the*

*benefits of IT in practice. The majority of physicians perceived benefits of IT, but they cited costs, vendor inability to deliver acceptable products, and concerns about privacy and confidentiality as major barriers to implementation of IT applications. Overcoming the cost barrier may require that payers and the federal government share the costs of implementing these IT applications.*

### **INTRODUCTION**

The adoption of information technology (IT) to support the delivery of healthcare is recognized increasingly in many countries as an essential tool to improve patient care (Dick & Steen, 1997; Leaning, 1993; President's Information Technology Advisory Committee, 2004). Until recently, IT products available for healthcare providers mostly were designed for large organizations, were business-oriented, complex to implement,

and costly. Recent advances in technology have made IT applications more available to primary care physicians in smaller practices. Products are available that are modular; able to be integrated with different systems, and designed to fit the physician's practice pattern without substantial investments in hardware, software, and maintenance (McDonald & Metzger, 2002).

As a result, the introduction of computers and IT applications into primary care in countries with favorable government policies and financial incentives has been rapid (Kidd, 2000; Mount, Kelman, Smith, & Douglas, 2000; Purves, Sugden, Booth, & Sowerby, 1999; Thakurdas, Coster, Guirr, & Arroll, 1996). A number of English-speaking countries has experienced widespread implementation of information technology. The Harvard School of Public Health and the Commonwealth Fund's International Symposium survey of primary care physicians found the following proportions of primary care physicians in the following countries who were using electronic medical records: U.S. (17%); Canada (14%); Australia (25%); New Zealand (52%); and the U.K. (59%). The survey also found the following use of electronic prescribing by primary care physicians: U.S. (9%); Canada (8%); Australia (44%); New Zealand (52%); and the U.K. (87%) (Harris Interactive, 2001a).

The U.S. trails European countries in the use of information technology in patient care. Overall, 29% of general practitioners in the European Union use electronic medical records compared to only 11% in the U.S. Only three countries from the Organization for Economic Cooperation and Development (OECD)—Portugal, France, and Spain—lag behind the U.S. (Harris Interactive, 2002b). Despite its potential to improve efficiency and quality of care, use of information technology in healthcare lags behind other sectors of the economy in the U.S. In 2001, most of the \$20 million invested in healthcare information technology was used to computerize financial systems (Goldsmith, Blumenthal, & Rishel, 2003).

Less than 10% of U.S. hospitals had adopted electronic medical record systems and less than 5% had implemented computerized physician order entry by 2001.

Given the increasing public attention to the importance of health information technology, the rate of IT adoption among primary care providers is important (Hillestad, et al., 2005). Accurate estimates of the adoption rate for information technology form the basis for policy regarding how to stimulate its use by physicians. The overall aim of this study was to determine primary care physicians' use of information technology in patient care. The specific objectives included the following:

1. Estimating the proportion of primary care physicians who have adopted information technology applications in their practices.
2. Determining physician perceptions of the benefits of these IT applications.
3. Determining physician perceptions of the barriers to the adoption of IT applications in their practices.

Primary care in the U.S. is delivered by physicians who comprise several specialties; namely, family practice (FP), internal medicine (IM), pediatrics (PEDS), and obstetricians and gynecologists (OBGYN). One other group of physicians was included in the survey comprising medical specialties such as geriatrics and occupational medicine.

Four IT applications were selected for investigation. First, electronic medical records (EMRs) are promoted as more comprehensive and accessible to healthcare providers. Studies have shown that EMRs have the potential to reduce medical errors, especially when integrated with other applications such as decision support (Bates et al., 1998). Electronic prescribing involves the use of computers or hand-held devices to submit prescriptions to pharmacies electronically. E-pre-

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