ISSUE BRIEF

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AUGUST 2005
NUMBER 1

TRENDS IN HEALTH INFORMATICS

Electronic Health Records: Synthesizing Recent Evidence and Current Policy

by Lorenzo Moreno

The federal government has embarked on an ambitious course to ensure that most Americans have electronic health records (EHRs) within the next 10 years. Although EHRs have the potential to improve quality of care, reduce medical errors, and lower administrative costs, incorporating them into clinical practice will require large investments in new technology, in addition to changes in existing systems and processes. Since 2004, Mathematica has been leading the way in evaluating whether financial incentives persuade physician practices to adopt EHRs. This issue brief draws on our review of the literature on health care providers' use of EHRs, which currently seems modest among office-based physicians. As a result, it may take several years before EHRs can be used to monitor performance and quality-based payments, although current policies and recent legislation may expedite their adoption.

New Policy Directions

EHRs are increasingly viewed as a way to help achieve quality and continuity in treatment, contain costs, and fill gaps in clinical and public health data. Yet, the technical infrastructure and network required for large-scale adoption of EHRs do not exist. The Office of the National Coordinator for Health Information Technology (ONCHIT) in the U.S. Department of Health and Human Services has been charged with realizing the goal of incorporating EHRs into clinical practice. In response, ONCHIT has developed strategies to:

- Create incentives that spur EHR adoption
- Promote EHR diffusion in rural and under-served areas
- Reduce the financial risk of EHR investment

WHAT ARE EHRs?

EHRs consist of clinical information systems that allow physicians and other health care professionals to:

- Monitor the health status of their patients with electronic medical charts
- Support their care decisions with evidence-based guidelines
- Expedite referrals to specialists and other care decisions
- Computerize their ordering of prescription drugs, laboratory tests, and images
- Store and retrieve patients' medical records from different locations

ONCHIT is investing up to $75 million over the next few years to:

- Take stock of state laws and business policies on privacy and security that could undermine health information sharing
- Develop a process to harmonize software applications and create industrywide standards
- Develop standards for and test certification of EHRs
- Construct a prototype of a national health information network

In addition, ONCHIT has partnered with the Agency for Healthcare Research and Quality (AHRQ) and the Centers for Medicare & Medicaid Services (CMS) to stimulate planning and implementation of EHRs in clinical practice through a variety of initiatives. These include the Doctor's Office Quality–Information Technology (DOQ-IT) program; contracts and grants to more than 100 communities, hospitals, providers, and health care systems to accelerate the adoption of EHRs and build health information networks; the National Resource Center for Health Information Technology; and the Physician Group Practice and Medicare Care Management Performance demonstrations.

The State of Things

The evidence from our literature review suggests that large physician groups and hospitals are at the forefront of using EHRs. However, the extent to which small physician practices—those made up of eight or fewer physicians, representing nearly

TABLE 1

RECENT STUDIES OF EHR USE, BY FUNCTIONALITY

Electronic Medical Records (EMRs)

Setting	Measure and Use Rate
Small office-based physicians	13 percent of physicians report that their practices have EMRs
Source: 2001 Deloitte Research/Fulcrum Analytics[5, 6]	
Office-based physicians	17 percent of physicians use EMRs (not including billing records) in practice
Source: 2003 National Ambulatory Medical Care Survey[3]	
Office-based physicians	24 percent of physicians use EMRs in practice
Source: 2003 Survey of Family Physicians[1]	
Office-based physicians	24 percent of physicians are in practices with IT support for specific patient care functions
Source: Community Tracking Survey, 2001 Physician Survey[4, 7]	

Computerized Physician Order Entry (CPOE)

Setting	Measure and Use Rate
Office-based	11 percent of physicians are in practices with IT support for specific patient care functions
Source: Community Tracking Survey, 2001 Physician Survey[4, 7]	
Hospitals	16 percent of hospitals have installed CPOE
Source: 2002 Mail and Telephone Survey of Hospitals[2]	
Hospital emergency and outpatient department	29 to 31 percent of hospitals use CPOE
Source: 2001-2002 National Hospital Ambulatory Medical Care Survey[3]	

Decision Support Systems (DSS)

Setting	Measure and Use Rate
Hospital emergency and outpatient department	18 to 40 percent of hospitals use DSS
Source: 2001-2002 National Hospital Ambulatory Medical Care Survey[3]	

IT = information technology

The superscripts in the source notes correspond to the numbers in the literature review box on page 4.

80 percent of all physicians in the U.S.—have adopted EHRs nationally remains unclear.

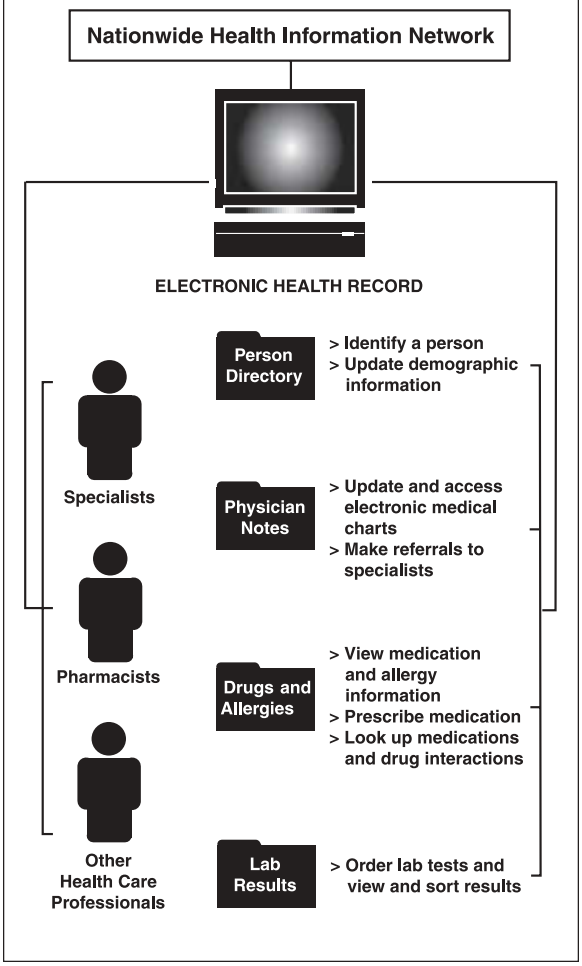
Our ongoing review suggests that use of EHRs by health care providers ranges between 11 and 40 percent, depending on the functionality, setting, measure, and period considered (Table 1). Moreover, up to one-quarter of office-based physicians already have either electronic medical records (computerized charts that allow physicians to access patient notes and test results, generate preventive care reminders, and make referrals to specialists) or computerized physician order entry systems (software that allows physicians to order prescription drugs, laboratory tests, and images and transmit these orders), although there is considerable variability by practice size.

We also examined use of decision support systems (software that allows physicians to decide clinical issues with the support of knowledge references or databases, including prescription drug counter-indications). Between 18 and 40 percent of hospital emergency rooms and outpatient departments use these systems; small physician practices trail behind.

Implications for the Future

Health care purchasers have always been interested in securing the best quality health care at a fair price, and approaches to measuring quality of care and increasing accountability for it have been growing. Recently, especially in response to the Institute of Medicine's reports, *To Err Is Human* and *Crossing the Quality Chasm*, which detail strategies for reducing medical errors and improving health care quality, the push for quality-based purchasing has grown stronger. Proponents hope that it can be used to address deficiencies in patient safety and quality.

SOME KEY COMPONENTS OF AN ELECTRONIC HEALTH RECORD



Well-designed performance-based payment mechanisms are widely viewed as a way to improve care quality and coordination, patient safety and satisfaction, and, ultimately, administrative costs and health outcomes. Yet, an infrastructure such as that represented by EHRs must be put in place before pay for performance can be implemented successfully and widely in health care. Physicians will need to adopt EHRs as a tool for measuring performance and submitting data on their performance to insurers and health plan administrators, in addition to reallocating financial and human resources within their practices.

LITERATURE REVIEWED

Our literature review examined publications by the following experts:

1. American Academy of Family Physicians. "AAFP Pushes for Affordable EMR System." *Monitor,* February 2003.
2. Joan S. Ash, Paul M. Gorman, Veena Seshadri, and William R. Hersh. "Computerized Physician Order Entry in U.S. Hospitals: Results of a 2002 Survey." *Journal of the Medical Informatics Association,* vol. 11, 2004.
3. Catharine W. Burt and Esther Hing. "Use of Computerized Clinical Support Systems in Medical Settings: United States, 2001-03." *Advance Data for Vital Statistics,* no. 353, March 15, 2005.
4. Joy M. Grossman and Marie C. Reed. *Most Medicare Outpatient Visits Are to Physicians With Limited Clinical Information Technology*. Center for Studying Health System Change, Data Bulletin no. 30, July 2005.
5. Robert H. Miller and Ida Sim. "Physicians' Use of Electronic Medical Records: Barriers and Solutions." *Health Affairs*, vol. 23, no. 2, March/April 2004.
6. Robert H. Miller, John M. Hillman, and Ruth S. Given. "Physician Use of IT: Results from the Deloitte Research Survey." *Journal of Healthcare Information Management*, vol. 18, no. 1, 2004.
7. Marie C. Reed and Joy M. Grossman. *Limited Information Technology for Patient Care in Physician Offices.* Center for Studying Health System Change, Issue Brief no. 89, September 2004.

Our review of recent evidence suggests that use of EHRs by physician practices is still modest among solo or small-group practices, but current policies and recent legislative initiatives are likely to expedite the adoption of this technology. Providing the appropriate financial incentives to providers, fostering the development of standards and networks for allowing EHR systems to communicate nationwide, and addressing legal barriers to the secure exchange of data will move this process forward.

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