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 underserved areas
- Reduce the financial risk of EHR investment
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

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<thead>
<tr>
<th>Setting</th>
<th>Measure and Use Rate</th>
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<tr>
<td>Small office-based physicians</td>
<td>13 percent of physicians report that their practices have EMRs</td>
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<td>Office-based physicians</td>
<td>17 percent of physicians use EMRs (not including billing records) in practice</td>
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<td>Office-based physicians</td>
<td>24 percent of physicians use EMRs in practice</td>
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<td>Office-based physicians</td>
<td>24 percent of physicians are in practices with IT support for specific patient care functions</td>
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### Computerized Physician Order Entry (CPOE)

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<th>Setting</th>
<th>Measure and Use Rate</th>
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<tr>
<td>Office-based</td>
<td>11 percent of physicians are in practices with IT support for specific patient care functions</td>
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<td>Hospitals</td>
<td>16 percent of hospitals have installed CPOE</td>
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<td>Hospital emergency and outpatient department</td>
<td>29 to 31 percent of hospitals use CPOE</td>
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### Decision Support Systems (DSS)

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<td>Hospital emergency and outpatient department</td>
<td>18 to 40 percent of hospitals use DSS</td>
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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 counterindications). 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.
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.

For more information on research in this area, contact Lorenzo Moreno at (609) 936-2766, lmoreno@mathematica-mpr.com.

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Our literature review examined publications by the following experts:


