

FEATURE

ELECTRONIC HEALTH RECORDS

Financial incentives are spurring growth of electronic health records

Julie Jacob looks at the growth, usefulness, and challenges of electronic health records

Julie A Jacob *freelance journalist*

Wisconsin

It's a familiar sound to a patient waiting in an examining room to see a doctor: the patient hears the doctor just outside the exam room, flipping through pages of medical notes, and then the door opens and the doctor, holding a manila folder containing the patient's medical record, walks in. Now, however, a patient is more likely to hear the tapping sound of the physician typing notes into an electronic health record (EHR). The number of physicians and hospitals using EHRs has reached "the tipping point," according to a comment that Kathleen Sebelius, secretary of the US Department of Health and Human Services, made in a 22 May *USA Today* article.¹ Federal financial incentives for physicians and hospitals to adopt EHRs, along with a push from the government and insurers for more data about patient care and outcomes, are motivating physicians to make the transition.

Although physicians have been using computers for decades to schedule appointments and manage billing and insurance claims, an EHR is different from practice management software, explained Steven J Stack, an emergency physician and chair of the American Medical Association's Health Information Technology Advisory Group. An EHR is "software to capture information about a patient. Some are fairly rudimentary, while others are very sophisticated," said Stack.

The federal Centers for Medicare and Medicaid Services (CMS) defines an EHR as "an electronic version of a patient's medical history that providers maintain over time." The EHR contains information on the patient's drugs, tests, laboratory results, immunizations, and procedures. An EHR can also include "evidence based decision support, quality management, and outcomes reporting," the CMS states on its website.

Increasing usage

About 75% of physicians in the United States now use EHRs, also known as electronic medical records (EMRs), according to data from Manhattan Research, a healthcare market research firm in New York City. This proportion is a sharp increase from the 12% of doctors who were using EHRs in 2001, according to Manhattan Research. However, statistics from the Breakaway

Group, a healthcare IT consulting firm owned by Xerox, indicate that a slightly lower percentage of physicians (63%) are using EHRs. Sebelius said in the *USA Today* article that about 50% of physicians and 80% of hospitals are using EHRs in a way that meets CMS standards for meaningful use. Whatever the exact percentage, the trend is toward rapid physician adoption of EHRs.¹

"Academic medical centers and acute hospitals have higher rates, and large physician practices are a little bit ahead of the smaller practices. We've made huge gains since 2009," said Heather Haugen, managing director of the Breakaway Group and director of health information technology at the University of Colorado.

The percentage of physicians using EHRs also varies geographically, with some states much ahead of others in the rate of physician adoption of EHRs, noted Stack. In some states, such as Massachusetts and Wisconsin, many physicians are using them, while in other states, such as Mississippi, fewer doctors have given up their paper records.

"It has a bit to do with the attention and the investment that the state government has done on it," said Stack.

Financial incentives

Federal financial incentives have spurred physicians and hospitals to invest in EHRs over the past few years. The American Recovery and Reinvestment Act of 2009 includes a provision directing the CMS to award substantial financial incentives to physicians and hospitals that switch to EHRs and use them in what the CMS defines as "meaningful use." The CMS established criteria for what it defines as Stage 1 meaningful use, including using EHRs to enter orders, prescribe medications, report quality measurements to the CMS, check for drug interactions and allergies, and record the patient's vital signs and smoking status. The CMS has developed two additional stages of meaningful use, each with its own set of requirements and deadlines.

Physicians who participate in Medicare, the health insurance program for older people, and who adopted EHRs by 2012, were eligible for up to \$44 000 (£28 000; €33 000) in incentive payments spread over five years. Physicians who participate in Medicare, but who have not yet purchased an EHR system, can receive smaller incentive payments if they transition to EHRs by 2014. The incentive has a stick of non-compliance, as well as a carrot of compliance: Doctors who participate in Medicare, but who do not switch to EHRs by 2015 will have their Medicare payments reduced by one percent each year up to a five percent deduction.

Physicians who participate in the 43 state-run Medicaid program for US citizens on a low income can receive even bigger payments for adopting EHRs. They are eligible for up to \$63 750 in incentives spread over six years.

These financial incentives can help offset the costs of installing and maintaining EHR systems. Although costs can vary widely, a study published in the March 2011 *Health Affairs* found that the cost of implementing an EHR system was \$162 000 for an average five-doctor practice.² Costs can be lower for physician groups that purchase cloud-based EHR systems, rather than server-based ones, noted Derek Kosiorek, a principal with the Medical Group Management Association Health Care Consulting Group.

The Wildwood Family Clinic, a practice of 13 doctors in Madison, Wisconsin, adopted an Epic EHR system in 2010 in a joint venture with a local hospital. The cost of switching to the system was about \$60 000 per doctor, said Paul Wertsch, a member of the Wildwood group and past president of the Wisconsin Medical Society. The transition required a substantial investment of time, as well, to teach the physicians how to use the system.

In Austin, Texas, the 16 physician Premier Family Physicians medical group made the transition to EHRs in 2010. At that time, the group comprised only six physicians, and system affordability was a priority, said Kevin P Spencer, the group's president. They chose Greenway, a smaller EHR vendor, because it was more affordable than other EHRs and the system connects easily with other EHR systems. Despite choosing a lower cost system, changing to the EHR system—including hardware, software, and training—cost about \$200 000 to \$250 000 per doctor, said Spencer.

An improvement on paper records

Despite the investment of time and money needed to install and maintain EHRs, they have several advantages over paper records, say health information technology experts. For one thing, EHRs eliminate medical errors caused by clinicians misreading a doctors' handwriting or misinterpreting information given verbally.

What's more, an EHR can be sent to other clinicians with a few clicks of a keyboard, unlike paper medical records that have to be transported from department to department, and which can sometimes get lost in the process.

In addition, doctors can view EHRs at any time and from anywhere, using their own computer or a smartphone, and several clinicians can look at them at once.

"It certainly is an improvement," said Wertsch, noting that he can review patient records at home. However, he added, evenings at home that once were spent reading are now spent at the computer updating patient medical records.

At Premier, several physicians and their teams review and enter data into the EHRs using tablet computers that they bring into

the exam rooms, while other physicians choose to use desktop computers, said Spencer.

Use of patient data

The most important advantage of EHRs, said the healthcare technology experts, is that they empower physicians to use clinical decision making tools and analyze aggregated patient data, which gives them more information that can help them improve patient care and outcomes. Doctors can pull data from EHRs, for example, to see how many patients received flu shots or who are overweight.

"We get a better sense of population health and a better sense of being alerted when patients are not achieving success with their medical treatment, which may be a clue that the patient requires different medications or may not be able to comply," said Stack.

At Wildwood Family Clinic, the physicians are using the EHR system to analyze data on patients with diabetes.

At Premier, the doctors use the EHR system for such things as tracking the status of patients with diabetes, checking how many asthma patients are not using inhalers, and alerting patients about prescription drug recalls and interactions. "Our goals were to be able to affect patient care and grade ourselves and gather data on how we were doing clinically . . . diabetes care, cholesterol goals, immunization rates—it's helped with all of those," said Spencer.

Because Premier uses an EHR system and can transmit aggregate patient data to insurers, the medical group has been able to sign contracts with insurers that reward the medical group for meeting specific metrics on patient care quality and cost.

"The only way to participate in new payment models is to have data we can share with the insurance companies," said Spencer.

EHRs also improve coordination of care, at least within a healthcare system that is using one EHR system, noted Haugen.

New challenges

However, the transition to EHRs brings with it a set of new challenges. Information that once could easily be found with a quick scan of paper notes is scattered in various places in an EHR.

"It's hard to separate the wheat from the chafe," commented Wertsch, describing the busy array of tabs, links, and menus on an EHR screen.

Using EHRs is also time consuming. Wertsch said he spends a large portion of his time with patients "clicking and typing"—time for which the physicians in his group do not receive payment from insurers.

Another challenge is that the user interfaces for EHRs are often complicated and clunky, said Kosiorek, but vendors are more intent at the moment on increasing their market share than revamping their products.

"EHRs are stuck in old technology models. It is difficult for them to get out of it. They are focused on expanding the customer base. It's a land grab for doctors," said Kosiorek.

In addition, he added, vendors need to be careful that updates work as intended because—unlike a glitch with a Facebook upgrade—a bug in an EHR program can have serious consequences.

"Their systems are life or death. They are mission-critical systems that can cause problems if something is wrong with them," said Kosiorek.

Even server slowness or temporary freezing can cause problems, noted Spencer. “You become so accustomed to using a computer that if you’re having a server issue, you are sort of at a standstill.”

The biggest problem with EHRs now, however, is that EHRs created by different vendors are generally not yet designed to be compatible with one another, although health information exchange (HIE) between EHR systems is one of the CMS’s Stage 2 meaningful use criteria. Currently, a handful of vendors dominate the EHR industry with dozens of others operating as niche players. Hospitals commonly use EHR systems from the vendors Cerner, Epic, McKesson, Meditech, and Siemens, said Haugen and Stack, while many physicians like EHRs from Allscripts, eClinicalWorks, and NextGen. One EHR system might not be able to open or download a medical record created in a different EHR system.

“It’s a little like mailing a letter. It has to get to the right place,” said Haugen. “When you open the letter, you have to be able to read it. That requires us to standardize the language we use in healthcare. We need to standardize clinical terminology, and then populate it in the system in the right places. It sounds simple, but it actually is quite complex.”

Although physicians might have minor annoyances with using EHRs as they are designed now, the EHR systems will get better over the next several years, said the experts. Patient engagement will be the next step in the evolution of EHRs, they said. For example, a patient with diabetes might be able to check his or her glucose level and send the information from a smartphone directly to an EHR.

Increasing technology

Patients expect technological sophistication now at the doctor’s office, too, said Spencer. In Austin, which is a tech savvy college

city with a large population of young adults, patients want their physicians to use digital tools.

Technical improvements will make it much easier for doctors to use EHRs, too, Kosiorek said. Voice recognition technology will eventually improve to the point that doctors can simply speak their notes instead of typing them, he predicted. In addition, a movement toward cloud-based systems will reduce the cost of maintaining these systems.

He also thinks physicians will soon use Google Glass and similar devices to review notes and diagnostic images while caring for patients.

Despite the AMA’s concerns about the aggressive pace at which the CMS is pushing EHR adoption and the current lack of EHR interoperability, the AMA is committed to encouraging physicians to use EHRs, said Stack. “We want to work with the broader health community and the government to help us do this in a way that is responsible and reflective of the needs of patients and physicians.”

Competing interests: I have read and understood the BMJ Group policy on declaration of interests and have no relevant interests to declare.

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- 1 Kennedy K. Incentives push doctors to electronic health records. *USA Today*. 22 May 2013.
- 2 Fleming NS, Culler SD, McCorkle R, Becker ER, Ballard DJ. The financial and nonfinancial costs of implementing electronic health records in primary care practices. *Health Affairs* 2011 30:481-9.

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