

Electronic Medical Records: What's in Store for America's Health Care System?

Electronic medical records. Three simple words that together translate into anything but simple.

In an ideal world, a patient from Dallas could visit a health care provider in San Francisco and, within seconds, her medical records would be available on the exam room computer screen. A successful system would provide an accurate, confidential and accessible means for delivering appropriate, high-quality care. It also would be a timely one. In the words of former Congressional Speaker of the House Newt Gingrich, electronic medical records would allow the federal government to track the course and impact of a pandemic in real time.

Mr. Gingrich and Robert Egge, from the Center for Health Transformation, wrote an Op-Ed piece "To Fight the Flu, Change How Government Works" on Nov. 6, 2005, in *The New York Times*. It was written in response to President George W. Bush's announced plan for preparing for a flu pandemic. The two authors said what many experts have claimed since Hurricane Katrina: The current bureaucratic structure is broken and in need of management that allows efficient and effective collaboration and communication between public and private sectors, government and communities.

Not Yesterday, Not Tomorrow, but Today

What's vital to preparing for tomorrow's emergencies is immediately putting into place systematic solutions that have multiple uses, such as electronic medical records. An EMR system, say Mr. Gingrich and Mr. Egge, would allow for safer and more efficient care under normal circumstances and would provide local, state and federal governments with the necessary data to direct therapies, medical personnel and supplies during an emergency. "There's no reason why every American couldn't

have a preliminary electronic health record by the end of 2006," they wrote in their *New York Times* piece.

But ask health care professionals and other stakeholders in the industry and you most likely will hear some skepticism in their voices. Pat Kroken, FACMPE, CRA, who is a principal in Healthcare Resource Providers, a radiology consulting company in Albuquerque, N.M., said that although radiologists and radiologic technologists are familiar with using electronic files because of picture archiving and communication systems, or PACS, there are not many traditional radiology practice vendors using and promoting EMRs yet. "I think it's a wonderful idea," she said, "but I'm not sure yet how the health care system will make it work. Just look at HIPAA (the Health Insurance Portability and Accountability Act). It's been years and the industry is still struggling to fully implement the Transactions and Code Set standards."

Once EMRs are in wide use, however, she thinks they will have a positive effect. "At this point, hospitals are leading the way, so imaging centers will face the challenge of catching up once EMR options are more readily available. This also points out the challenge of how information from a wide variety of sites will be accumulated, and that represents the true challenge ahead. Creation of the EMR is only the first step."

Going Paperless With PACS and EMRs

David Newman, R.T.(R), director of radiology at Methodist Medical Center in Oak Ridge, Tenn., said his facility has been using EMRs and PACS successfully for three or four years. The records are interconnected, so when a provider pulls up a patient record, he or she sees an icon that designates a PACS image. Mr. Newman said R.T.s and doctors at his hospital are able to quickly review images, reports, lab results and other information and send them to any hospital in his five-hospital system. As for the security of electronic records, his response is

Focusing on Widespread Health Information Technology

In October 2005, the American Health Information Community published a list of what it calls “potential breakthroughs” designed as the foundation for adopting and implementing interoperable health information technologies. The community defines a breakthrough as “the use of health information technology that produces a tangible and specific value to the health care consumer and can be realized within a two- to three-year period.”

Breakthroughs are divided into three categories: consumer empowerment, health improvement and public health protection. They include the following:

- Personal electronic health records that offer patients and their authorized providers immediate access to vital information.
- Patient medication history.
- An electronic record locator, which is a computer search tool that locates patient information at different clinics, physician offices and hospitals.
- A single electronic health registration form that every health institution can access.
- E-prescribing.
- Automated collecting, monitoring and reporting of patient data.
- Chronic disease management.
- Monitoring and management of public health threats.
- Biosurveillance and pandemic surveillance on a local, state and federal level.
- Adverse drug event reporting. ◆

to the point. “I think there’s more danger in fax machines than EMRs,” he said. “Think about how many times people fax something to the wrong number.”

Cathy Parsons, B.S., R.T.(R)(M)(QM), FASRT, director of medical imaging at Cumberland Medical Center in Crossville, Tenn., said that in her state, radiology departments have to keep films for six years, mammography forever and films for minors until they’re age 19. “You can run out of space really quickly,” she said, which is why her hospital went to PACS last year and is using EMRs on a limited basis now. Cumberland Medical plans to be paperless in another year or two, Ms. Parsons, ASRT president, said.

Will an Integrated EMR System Be the Solution?

The concept of electronic medical records, however, involves more than a collection of computerized files with patients’ medical information. It is an interoperable system — interoperable being the key word — guided by a set of common standards that specify how information is communicated, and in what format, between hospitals, clinics and private physician offices nationally. Interoperability means that each component of the system functions effectively with other components and systems. Right now, the health care industry does not know how to make this kind of system work. Progress is being made, but the industry is a long way from putting all the pieces together.

The U.S. Department of Health and Human Services lists some of the necessary ingredients for an interoperable system: interconnection tools like mobile authentication, identification management, common Web services architecture and security technologies. These components are called the National Health Information Network. In plain language, computers must be able to communicate with each other on a secure network that protects patient privacy.

So, let’s say the technology and health experts get all these pieces into place and they’re working well. What then? How will this system be sustained on a national basis? Who will manage it on local, state or federal levels? And how will success be measured? Key players are working on the answers to these questions, but in the meantime, the assumption is that they will encounter unexpected challenges. One thing they do know, however, is that President Bush wants the system to be operable by 2014.

Information Management and Technology

The Institute of Medicine says medical errors kill between 44,000 and 98,000 hospital patients every year. Economists claim one-third of the money Americans spend on health care is wasted on duplicate tests and unnecessary procedures, all because of inaccurate or nonexistent medical records. If medical facilities had the ability to share patient records, the health care system would save about \$86.6 billion a year, according to the HHS. A successful interoperable system would give patients more control over their health information, provide clinicians with point-of-care patient information and give researchers better data to work with.

The Joint Commission on Accreditation of Healthcare Organizations staff believe that EMRs are necessary to improving quality of care, containing costs and increasing productivity in the health care setting. That is why JCAHO introduced in 1996 the Information Management/Information Technology standards

for obtaining, managing and using patient health information. JCAHO thinks that a well-designed EMR system will allow health organizations to meet these and other standards. Different parts of the system must be able to communicate freely and share information, and all hardware and software must be compatible, allowing communication between systems nationwide. An integrated national system simply will not work without a dependable information technology infrastructure operating under consistent standards.

Mr. Newman credits his hospital's IT department for its well-functioning system. "We're pretty high tech here," he said. "Oak Ridge was home to the Manhattan Project, so we have a lot of Ph.D.s and scientists in the area. Our medical staff is progressive and computer savvy. We put in our first radiology information system in 1988 and were one of the first hospitals in the area to install PACS."

Ms. Parsons praises the expertise in her IT department as well. "They're excellent," she said. "Our experience is that security in electronic records is actually better because you have an audit trail. We also save space and time using electronic records. Radiologic technologists like it because they don't have to bundle up files or go digging through medical records to find what they need."

It's a Work in Progress, but in the Meantime ...

Last September, HHS announced the formation of the American Health Information Community. The group consists of 17 private and public sector leaders who over the next five years will provide input and recommendations to the HHS for creating an interoperable EMR system that will be functioning within nine years. This national strategy calls for federal agencies to collaborate with private stakeholders to develop and adopt architecture, standards, a certification process and a method of governance for ongoing implementation of health information technology.

As part of the plan, the HHS awarded contracts to four companies — IBM, Accenture, Northrop Grumman and Computer Sciences — to build regional networks that will link providers, hospitals and clinics around the country.

The framework for the health information community is based on four goals:

- To inform clinical practice with the use of electronic health records.
- To interconnect clinicians so they can exchange health information using advanced and secure electronic communication.
- To personalize care with consumer-based health records and better information for consumers.
- To improve public health through advanced biosurveillance methods and streamlined collection of data for quality measurement and research.

At the five-year mark, a private health information community will take the place of the original group. This private entity will be charged with the task of setting additional standards and providing long-term governance over the newly created system.

"EMRs are part of our world from here on out," said Mr. Newman. "As with any tool it has the ability to make us faster and more efficient, and, more importantly, help us deliver better patient care." ◆

The Good, the Bad and The Uncertain

As with anything, there is a learning curve when it comes to using electronic medical records, said Cathy Parsons, B.S., R.T.(R)(M)(QM), FASRT, director of medical imaging at Cumberland Medical Center in Crossville, Tenn. "Although radiographers and radiologists are used to looking at images, it's a good idea to include everyone on your staff in all your trainings when you are moving to EMRs. Tell them what's involved. Show them demos of the system. Ease them into using it."

What's in store? Here's a short list:

Pros

- Provides access to patient information, anytime, anywhere.
- Provides real-time review of diagnoses.
- Provides real-time tracking of data.
- Facilitates the ability to develop and manage care plans.
- Helps reduce variability of care.
- Improves communication.
- Increases legibility.
- Simplifies records review process.
- Facilitates multidisciplinary approach to patient care.
- Facilitates better disease management and infection control.
- Reduces medical errors.
- Reduces health care costs.
- Improves coordination of care between facilities, providers and labs.
- Simplifies health information for patients, ideally, so they can be better consumers and participate more in their health care.

Cons

- Increases the need for advanced privacy and security protection.
- Relies on consistency among systems.
- Lacks standardization.
- Increases potential to link health care information to wrong patient.
- Lacks protection from widespread interruption if system goes down.
- Raises cost of care. (Late in 2005, Rep. Phil Gingrey, M.D., R-Ga., introduced a bill in Congress that would give tax breaks to health care providers who adopt health information technology.) ◆