

# Getting the Most from Your EMR

With an electronic records (EMR) system, information can easily be shared with other clinicians, and the system can alert physicians to recommended preventative services. These features can go a long way towards reducing risk and errors in patient care—but physicians need to know how to use them.

## Fast Facts

- ▲ *Most physicians who have EMRs don't use them to their full advantage. In a study published in Archives of Internal Medicine in 2007, the authors concluded that as implemented in most offices, EMRs did not result in better care. Page 97.*
- ▲ *In the future, reimbursement rates will be tied to certain quality measures. Fully featured EMRs can help track these measures and result in better payment rates down the line. Page 99.*
- ▲ *Pediatric and family practices should look for an EMR system that can interface with their state's immunization registry, which is set up with safeguards to prevent errors. Page 102.*

Only 10 to 25 percent of physicians actually use computerized record systems in their offices. Multi-physician practices are converting at a higher rate than solo practitioners, but there is still a long way to go.

“In the majority of cases, they're not totally computerized—the records are still paper,” says Lewis Sharps, MD, FACS, president of Positive Physicians Insurance Exchange (PPIX).

From the perspective of risk management as well as patient safety, to improve care, physicians need to do more than just use an EMR system—they need to take advantage of its capabilities.



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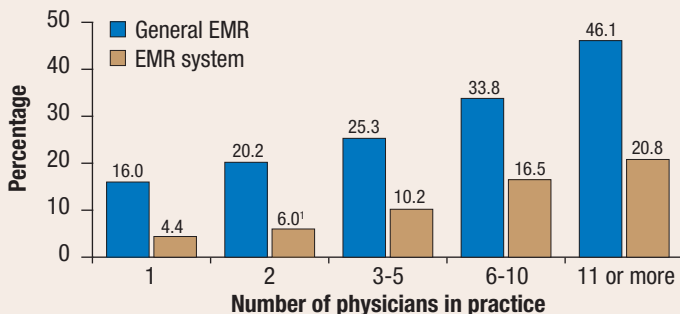
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Even though paper records are easy to leaf through, with an electronic system, physicians can access patient information from many places without having to track down the only copy of the chart. Information can easily be shared with other clinicians, and the system can alert physicians to recommended preventative services.

Another advantage is that most electronic records are searchable for key words if information is entered correctly. “The ideal medical record would treat every word as a key word,” says Donald Palmisano, MD, JD, president of Intrepid Resources, a Louisiana-based medical risk management company, and a former president of the American Medical Association.

Not only are EMRs more legible and more clearly organized than paper charts, but many come with extra features that alert the physician and other staff to possible problems or missed care. For example, some flag incoming lab reports, which continue to flash on the screen until they have been reviewed and signed by the appropriate person. The system not only documents the time and date on which the report was reviewed, it

**Percentage of Physicians Using Electronic Medical Records and Electronic Medical Record Systems by Practice Size: United States, 2005**



*Figure does not meet standard of reliability or precision.*

*Notes: Both trends are significant (p<.05). General EMR is positive response to single question on full or partial EMR use. EMR system is a positive response to four minimal features: computerized orders for prescriptions, computerized orders for tests, test results, and physician notes. Includes nonfederal, office-based physicians who see patients in an office setting. Excludes radiologists, anesthesiologists, and pathologists.*

*Source: CDC/NCHS, National Ambulatory Medical Care Survey, 2005.*

also lets the physician know that a report was *not* reviewed.

Most physicians who have EMRs don't use them to their full advantage. The study "Electronic Health Record Use and the Quality of Ambulatory Care in the United States" (*Archives of Internal Medicine*, 2007) showed that in 14 of 17 quality indicators, ambulatory care physicians using paper records provide equal care to those using EMRs. The authors concluded that *as implemented in most offices*, EMRs did not result in better care.

### EMR Advantages

Steven Selbst, MD, a Wilmington, Del., pediatric emergency room specialist and author of *Preventing Malpractice Lawsuits in Pediatric Emergency Medicine* (American College of Emergency Physicians, 1999), says that AI duPont Children's Hospital, where he works, has an EMR system that's linked to hospital-associated clinics. Before moving to this integrated system, he says it was difficult to get a child's chart quickly in the emergency department. Physicians would miss seeing documents that hadn't yet made it into the chart.

But with the EMR system, "If [the child is a patient at] one of our satellite clinics, we can access his or her immunization records, specialist appointments, and well-child visits," Dr. Selbst says. "I think this is the goal—you can access anyone's record anywhere."

Each specialty has its own specific needs in electronic systems. For example, Debra Best, MD, a medical instructor and pediatrician with Duke Children's Primary Care in North Carolina, who is on the team developing the pediatric EMR system at Duke, points out that documenting child development with social and motor milestones is essential in pediatrics. A pediatric EMR should enable one to graphically represent the growth chart, according to Dr. Best. With paper charts, "It's easy to plot [growth] incorrectly."

EMR systems can alert physicians to appropriate preventative care, like a mammogram or colonoscopy. The systems also can alert the physician if lab results or other statistics fall outside the normal range or if there are potential drug interactions.

Dr. Best points out that although these are great safety features, they may need to be adjusted for a particular patient pop-

ulation. EMR systems include various norms set for adults, such as pulse, respiration, and other vital signs. Without altering an EMR system for pediatrics, the program would flag many things that are considered normal for kids.

**AAFP made a big push to convince its members to use EMRs. The efforts were successful; a 2007 survey of AAFP members showed that 37 percent fully implemented an EMR system, and another 13 percent are in the process. An additional 26 percent plan to purchase a system in the future.**

Another feature that enhances patient care is sending prescriptions electronically to pharmacies, which can decrease errors as well as help to ensure the medication gets to the patient as

fast as possible. Dr. Best says, “You can have the prescription sent over, and it’s ready before the patient gets there.”

From a litigation defense perspective, Scott Buchholz, JD, CPHRM, a healthcare attorney with Dummit, Briegleb, Boyce & Buchholz in San Diego, Calif., says that it’s easier to go through the EMRs, since paper records have many folded-out sections and each hospital has different formats. With electronic records, “There’s greater clarity. It reduces the cost of interpretation, which is an issue for the law firm and claims adjustor, but also for the hospital, which has to look at schedules if it can’t figure out signatures,” he says.

“The information in the electronic record may be more complete than in a handwritten progress note. That could reduce claims and lawsuits,” he explains.

According to a 2007 survey conducted by Medical Records Institute, Inc. and Professional Risk Associates Inc., 45 percent of surveyed physicians felt that their EMR systems made them safer from malpractice cases; and 20 percent reported that their malpractice insurance carrier offered a discount for EMR use.

As director for the American Academy of Family Physicians’ (AAFP) Center for Health Information Technology (CHIT), Steven Waldren, MD, says that AAFP made a big push to convince its members to use EMRs. The efforts were successful; a 2007 survey of AAFP members showed that 37 percent fully implemented an EMR system, and another 13 percent are in the process. An additional 26 percent plan to purchase a system in the future.

Now CHIT has shifted its focus to helping physicians optimize their use of EMR. Dr. Waldren says that physicians are adopting EMR systems to improve their health documentation, but they should also be looking ahead at improving their quality and safety profile. He advises physicians to look at systems that capture quality information, even though there's currently no financial return for that. "Future payment structure will be based on quality and value, and they'll need systems to demonstrate that value," he says.

Unfortunately, those extra reporting systems could add \$20,000 to \$40,000 to the cost of an EMR system, Dr. Waldren estimates. But, despite these upfront costs, he believes, in the long run, it might be cost effective to spend more on a system with these quality-reporting capabilities. He says that some physicians already use their system data to show quality measures that help them negotiate better rates with health plans and liability carriers.

### **EMR Disadvantages**

While there are clearly advantages to EMRs, there are potential pitfalls to consider when deciding whether, how, and when to convert.

Attorney Buchholz looks forward to having access to electronic records data that are actually entered into the system at the time of care, instead of afterwards. "We're looking at medical records and documentation to try to put together a time line. It's difficult to do that if you don't have some precision," he says, noting that nurses and doctors are not always consistent about when they enter the information into the record.

Electronic records work best when all the patient's physicians use the same system. Dr. Sharps notes that many radiology offices are switching to electronic imaging systems, which is a problem for his orthopedics office. He doesn't have the capability to read the electronic images at a high-enough resolution.

While Dr. Sharps feels electronic imaging systems have some advantages, the disadvantages are many. "It's a double-tier system," he says. "The radiologist is using an electronic platform costing \$40,000 to \$100,000. They have big monitors and high pixels," he says, referring to the high-resolution screens used.

Many referring physicians don't have the same-quality computer screens and cannot view the images accurately, he says. As a result, Dr. Sharps, a back surgeon, will not perform spine surgery based on an electronic MRI.

Dr. Palmisano also has concerns about data integrity when transferring records between offices. He explains that just as the Internet sometimes jumbles information or adds extra characters, transferring data between systems can do the same thing. He recommends sending reports as a PDF file that can't be altered.

Another issue with EMR systems is the use of "smart sets," which are collections of phrases or answers a physician can select, like "normal breath sounds" or "within normal limits." It's faster and easier to click on the preprogrammed phrases than to type in the response. The problem comes when a physician's answer falls slightly outside that smart set, but the physician chooses the easy route of clicking the canned response. Or the physician clicks on the response without having asked the patient the question, or without performing that part of the exam.

Vicki Bokar, RN, CPHRM, the Cleveland Clinic's director of clinical risk management, cautions that it's important to capture a unique finding. "If the physician thinks it's close enough, they'll select the closest smart set, and that can be risky," she says. Ms. Bokar recommends that each department develops its own smart set to be sure the responses are adequate for all situations, or that they can go in and qualify that response with additional detail.

As a surgeon and attorney, Dr. Palmisano says that while clicking the standard phrases saves time, "There's nothing like writing it in your own words." After reviewing more than 3,000 medical cases, he finds that most physicians use the standard phrasing far more often than they should. "All the records begin to look the same, and you wonder if that's standard operating note number three. You know the operation wasn't always the same—each one is always a little different," he says.

## Choosing an EMR System

Of course, choosing a system is difficult. Dr. Waldren says that when he polled AAFP members in 2003, they were using 247 different products, and only 90 to 100 of these products

were certified by the Certification Commission for Healthcare Information Technology (CCHIT). The systems these doctors were using ranged from \$3,000 for a three-physician practice to \$140,000.

The CCHIT is a nonprofit certifying organization endorsed by many medical associations, including the American Medical Association. CCHIT reviews EMR products for functionality, interoperability (to receive and send data to pharmacies and labs, for example), and security of patient information. CCHIT-certified systems provide guidance on wellness care and

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preventive medicine; document and track lab reports, prescriptions and immunizations; monitor potential drug interactions; and assist with disease management. In addition to listing certified products on its Website, the CCHIT also has an online physician booklet detailing the certification process and what physicians should look for in an EMR system.

To get the most value when choosing a system, Dr. Waldren recommends choosing a company with a long track record. He also suggests visiting similar types of practice to see the system in use. “That has the most return for selecting the program,” Dr. Waldren says.

Linda Oberstein, MD, an internist in San Mateo, Calif., agrees that a site visit was helpful for her seven-physician practice. She says her practice initially narrowed down the vendors by cost and size of group supported. They chose a system that scales down to smaller offices, then sat down with representatives from two companies. After that, several physicians in her office visited similar practices to see the programs on site, including an out-of-state visit. They’re now implementing the chosen system.

While some programs can be purchased off the shelf, others can be personalized for the practice, specialty, or healthcare system. Dr. Best is on a team at Duke that developed the pilot pediatric EMR system. That process forces physicians to consider

risk-management issues when choosing the safeguards to put in place for their practice, such as flagging vital signs and drug interactions in their prescription system.

Picking the right system is important not only financially, but from a functional and workflow perspective. About eight percent of EMR users uninstalled their systems and converted back to paper records, according to the 2007 survey by Medical Records Institute and Professional Risk Associates. Another 30 percent of EMR users report that some clinicians in their office won't use the electronic systems.

Even before choosing an electronic system, Dr. Waldren recommends physicians start streamlining their current documentation, such as updating face sheets with current medications, so that the record is accurate and complete. "Look through the records and identify the key elements for that patient, such as an abnormal EKG, maybe pulmonary function testing. As you go through the data migration, update those medications, or allergies, and the computer system can act on that—leveraging the technology to help you," Dr. Waldren says.

For pediatric and family practices, ideally an EMR system can interface with the state's immunization registry, which is set up with safeguards to prevent medication errors. For example, registries sometimes give decision support; so if staff members are about to give an immunization too early, the registry may block the physician or nurse from entering that data into the computer. Dr. Best recommends logging in the planned immunizations before giving them to take advantage of this support, and to avoid giving a repeat, premature, or inappropriate immunization.

Dr. Best says that if a patient moves within the state, and the mother doesn't recall whether her child had a certain immunization, and the immunization card doesn't reflect it, the doctor might mistakenly give a double dose. "By linking to an immunization system, you can synchronize the immunizations," she says.

### **Reducing Errors During the Transition**

Selecting and purchasing an EMR system is only the start for getting the most out of a system in a physician's practice. Dr. Oberstein's internal medicine practice began that transition

process last year. As part of a seven-physician practice, she's been intimately involved in figuring out how to move to electronic records.

One of the first decisions was how to get her patients' charts into the system. For cost reasons, she decided to do it herself, but soon realized an additional benefit: inputting the records herself increased not only the precision, but the value to the patient. Entering her patients' charts into the computer the night before scheduled appointments, Dr. Oberstein thoroughly

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Dr. Oberstein adds that now that the information is entered into the system, outstanding maintenance issues pop up on the chart whenever the patient comes for a visit. With paper records, she says, she would routinely flip through the chart, but might not have caught that the patient was behind on tests she previously advised him or her to get.

The downside to this method is that entering the records manually is time consuming. "The first two weeks, I worked 30 hours outside of office hours, preparing for or finishing notes from the day," she says.

Dr. Oberstein says that the office will be getting a scanner soon, and they'll scan in the old EKGs and paper records as well as incoming consultations. While scanning in these documents means the information will be available electronically, it won't be searchable. For this reason, Dr. Oberstein still manually enters the most vital information from the paper chart, like the history and physical, into the electronic program's data fields.

There's also ongoing additional work in managing lab reports. Some labs upload the reports directly into the computer system, and alerts in her inbox inform her that the lab reports are avail-

able. While this is efficient, many labs also send duplicate paper copies just to make sure. Then there are some labs that do not offer electronic records. This can create a management problem for physicians and staff since it can be difficult to tell which reports the physician has seen. "I'm creating more paper than less at this point," Dr. Oberstein says. "It seems like I've seen the same labs a hundred times."

Dr. Waldren recommends a slightly different approach to the conversion process. "Pull the paper chart for three-to-six months, depending on how often you're seeing that patient population." All new information goes into the EMR, but the doctor can refer to the old chart during the visit. Anything from the paper chart that's pertinent to that visit (i.e., medications, ongoing issues) gets entered into the EMR. By the time the patient has been seen a number of times, the EMR should be up to date, but the paper file is kept in the office for reference.

To get through the adjustment period, implementing the EMR system in stages or during slow periods makes it more bearable. "It gives [doctors] more time to get used to it, to make you more efficient for when you have to be moving a little faster," Dr. Best says. She recommends implementing step by step: billing, order entry, then records input.

Vicki Bokar of the Cleveland Clinic recommends budgeting extra time for seeing patients when newly entering the visit into the computer. "We changed from our typical 15-minute appointments to 20-minute appointments when we started using the charting," Ms. Bokar says. "Give yourself extra time, even if you think you feel comfortable with the system."

It takes time to become proficient with the entry system, especially when the patient is interviewed face-to-face. "When we were first implementing it, the patients complained the doctors were looking at the computer screen instead of at them, and that had a negative effect on the patient-physician relationship," Ms. Bokar says. She adds that once the physicians become adept at it, the system becomes a time-saver.

## Privacy Concerns

Protecting a patient's privacy is an issue when using paper or electronic records. But any new medium brings new concerns,

and EMR systems are no different. Access to electronic records should be closely guarded.

If an office uses an EMR system and the users don't log out when leaving the room, the patient or someone else can gain access to those records. "That's a HIPAA violation," Dr. Selbst explains. "Most computers have a system built in where it will shut off after a period of time, but there are still a few minutes when it's live."

If the screen is left vulnerable, not only is confidential information at risk, but if someone else enters notes, it will look as if it were written by the last person who logged in—a risk-management issue.

Dr. Best notes that some practices have desktop computers they can lock when they leave; this means they don't need to log off completely.

Not surprisingly, passwords are the key to getting into most systems. Dr. Oberstein uses a laptop, which she brings back and forth from the office, as necessary. To protect her patients' privacy, she uses two separate passwords to log in.

Physicians should never share their password with other people, including a trusted nurse or secretary. Physicians should consider the password as equivalent to their signatures, since anything entered under that password will look as if it came from them.

An additional safeguard in some systems is requiring the use of an extra password or reentering a password when prescribing certain medications, like controlled substances, even if the program is already open.

Dr. Best explains that some physicians use a mini-notebook computer to enter their patient information during the visit, and it's more secure because the doctor carries it with her.

With medical records accessible on the Internet, concerns arise over who owns the records, who has access to them, and how they're kept confidential. Dr. Palmisano says this was a big

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topic for discussion when he was on the AMA board, and continues to be a major concern. “We want to make sure that whatever is instituted, there’s patient protection,” he says. Patients need to trust their physician enough to confide in them, so they also need to be able to trust the medical records system. “Trust is essential to the patient-physician relationship. Without trust, the patients may not tell you their innermost secrets that you may need to know to make a diagnosis,” Dr. Palmisano explains.

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## Making Alterations to an EMR

When making changes on a paper record, physicians can draw a line through an entry, white it out, or make an additional written entry. Changing an electronic record is a different process. What might be an innocent late entry or modification can be audited later for legal reasons. This is one of the important areas physicians need to understand when working with EMRs.

Dr. Waldren notes that paper records have only one record display. If a physician makes a deletion, it’s gone for good. “One of the advantages of electronic health records is that you can hide things from the display, but it’s retained in the EMR,” he says. Physicians should pick a system with a good audit-trail function. With the electronic record, a physician can “delete” an entry from the EMR and document why he deleted it. However, that doesn’t delete the entry from the database; it just doesn’t show on the visible patient record. “If you look in the audit trail, it’s still there, showing it was removed from display by this physician on this date for this reason. It allows you to be able to display the record so that you don’t display the errors, yet you will be able to build all those changes and annotate those in the records if needed for audit by the payer or the patient,” Dr. Waldren says.

He said most systems have an audit feature, and they’re required by CCHIT certified systems as of 2006.

Ms. Bokar agrees that an audit trail is important, noting that

this audit function is used heavily in legal discovery. “Electronic systems are always audited if they get notice of a lawsuit,” she says, adding that physicians sometimes panic and enter informed consent or something else into the system. “But systems might show that there’s an addendum,” Ms. Bokar says.

Another issue arising in electronic records is pulling up the wrong patient in the system, and entering data for someone else. In one case, two patients at a clinic had the same name, and the data was entered into the wrong electronic chart. “It was kind of a nightmare—very scary—but fortunately it didn’t cause any further error,” the clinician says. Since the electronic chart is a legal record, and the data was already entered, the doctors could not erase it. The doctors used a paper chart until they figured out how to document the incident properly.

Every person involved with a patient’s care has to be aware of these types of risk—schedulers, receptionists, billing personnel, nurses, and doctors, so that no mistake is made and then compounded. Staff members should use more than one identifier to ensure pulling the right chart—for example, name, address, medical identifier, or Social Security number.

From a legal standpoint, attorneys still look for the equivalent information from an electronic record as a paper record. “We’re still looking for the same things—the policies and procedures and standards and practices, what to document about changes in conditions, vital signs,” attorney Buchholz says.

Additional issues arise with electronic records, such as when they become official records and when they just constitute notes. Dr. Waldren says that with EMRs, there’s a fuzzy line between an initial entry and a signed, dated, complete entry. A physician may begin documenting a visit but gets called away to do something else. “Some say it’s a work in progress, and it isn’t an official record until the doctor dates and signs it,” he says. “We tell our doctors to sign it and put the date on when you finished it. Prior to that signing, it’s a little fuzzy how much needs to be documented about when the entry was started.”

## Contingency Plans

Having several different copies of the record can be problematic as well. Waldene Drake, RN, MBA, vice president of risk

management and patient safety for Cooperative of American Physicians, Inc. (CAP-MPT) in Los Angeles, Calif., cautions physicians not to copy the medical records onto a CD and take them home to complete. That creates another copy of the record, and it makes it difficult to know which is the most up-to-date or if the changes got made on the original back at the office.

On the other hand, it's essential to back up data regularly. Natural disasters, computer viruses, and malfunctions can leave an EMR system vulnerable to lost patient records. When choosing an EMR program, backup methods should be at the top of the discussion list. Even small practices should have a good information technology consultant on call to help troubleshoot issues like this and to anticipate and prepare for any problems.

After losing his New Orleans office to Hurricane Katrina, Dr. Palmisano knows the importance of backup systems. He recommends backing up data several ways, including an external hard drive. "You ought to have two backups in the office," he says. One backup holds records from the previous day, while another backs up the current system every five to ten minutes. This double-backup system helps protect records if a virus invades the records system or other system failure occurs. "If someone sends you a virus online or someone brings one into your office through homework they're taking from a night course, if that gets into your system, it's a mess. If you are backing up every five to ten minutes, it'll go on your backup drive, too," Dr. Palmisano says. That's when the previous day's backup comes in.

Dr. Palmisano also recommends using a third backup system outside the area. "A big practice can constantly back up into another state so if there's an earthquake or flood, they're up and running immediately." For smaller offices, the solution could be as simple as having backups brought offsite to a storage warehouse, or stored at the home of one of the physicians. This backup should not be altered in any way once it is created.

In case the EMRs aren't available, the Cleveland Clinic's Ms. Bokar advises physicians to "pretend you saw the patient for the first time," she says. Physicians should get a detailed history, do a physical exam, find out the names of other providers, and make some calls if necessary. "As a risk manager, I'd tell them to create a paper trail to show you took reasonable steps to try to get

the information needed,” Ms. Bokar says. This might mean calling the patient’s nursing home or next of kin to get information. “We want it to be very clear you went to your best effort to get the information.”

Even with EMR systems, some doctors still keep an informal shadow chart with hard copies of information. “Phone messages get put in there, and notes the doctor jots down when on the phone,” Ms. Bokar explains. She doesn’t recommend this.

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One problem is that doctors and staff members don’t always realize that the information in these charts is discoverable and will have to be produced if there’s a lawsuit. “We routinely do a deep investigation when there’s a lawsuit,” Ms. Bokar says, noting that they ask doctors “if they have anything else that’s written down. Sometimes those notes hurt us, some are helpful.”

Whether an office uses an EMR or paper records, it’s the processes that count—and that’s true of all aspects of the office, from reception to the back office. By taking a careful look at how things are accomplished in the office, physicians and their practice managers can do a lot to reduce errors, manage risk, and ultimately improve patient care.

Even risk managers admit that a lot of risk management is common sense. That’s good news for doctors, who can focus on putting systems in place to track patients and diagnostic studies, brush up on communication skills, use technology to improve care and document, document, document. All this won’t completely eliminate unintended outcomes. But with open and effective patient communications, both the doctor and the practice will be better equipped to handle what follows.