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SPECIAL TECHNOLOGY SECTION

The Connected Physician

EMRs: What you need to know

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There's a lot more to buying one than you might think. Know what you need before you go shopping.

Do you think it's time to get an **EMR**? Congratulations! An electronic medical record system can help you raise revenues, improve patient care, enhance documentation, and gain easier access to data. Plus it can reduce or eliminate dictation and the cost of transcription.

Many **EMRs** also let you import clinical data direct from labs, imaging centers, hospitals, and other physicians' offices. This sort of connectivity is still quite limited, though; so if you get an **EMR**, also plan to buy a scanner and software to input paper letters, results, and reports, as well as key data from your existing charts.

Maybe you're not ready for a full **EMR** that requires you to take electronic notes. In that case, you might want to start with digital dictation and be able to view your notes and lab results online. If you're online with the hospital, you can also see inpatient studies, reports, and discharge summaries. Eventually, you may want to start entering notes in the **EMR**, or try electronic prescribing or ordering. Several vendors favor this modular approach, charging separate fees for each additional function.

Here's how to decide if an **EMR** is for you, whether you can afford it, and how to be a smart shopper.

Can you afford an EMR?

Some consultants contend that small practices aren't prepared, financially or organizationally, for an **EMR**. Aside from the cost, "most one- and two-doctor practices with limited staff won't get as much benefit from the efficiencies that an **EMR** brings," says Ron Sterling, a health care technology consultant and president of Sterling Solutions in Silver Spring, MD.

What is the cost? There's a wide range of estimates, depending on whom you ask. Sterling says the initial cost of an **EMR**—including hardware, software, implementation, and training—ranges from \$30,000 to \$50,000 per physician. Estimates by vendors and their client practices are considerably lower. Based on his firm's survey of leading **EMR** makers, consultant Mark R. Anderson of AC Group in Spring, TX, estimates the initial cost at between \$15,000 and \$30,000 per physician.

But to get the best idea of how much you'll actually spend, look at the five-year cost, including infrastructure, hardware support, and the 15 to 18 percent of the software cost that you'll have to pay annually for maintenance and updates. Sterling says the total cost is \$1,500 to \$2,000 per doctor per month on an ongoing basis. Internist Jeffrey K. Hertzberg, president of Medformatics, a Minneapolis consulting firm, estimates the cost at \$800 to \$1,700 per doctor per month, or as much as \$102,000 per physician over five years.

On that basis, the Roswell Pediatric Clinic in Alpharetta, GA, with 13.5 full-time-equivalent doctors and nurse practitioners, will pay \$53,700 per full-time clinician over five years for its **EMR** from Noteworthy Medical Systems (www.noteworthyms.com). That breaks down to about \$900 per clinician per month.

South Arkansas Medical Associates, a family practice in El Dorado, AR, is spending about \$300,000 over five years on an A⁴ Healthmatics **EMR** (www.a4healthsystems.com). That comes to \$54,545 per full-time clinician for the practice's four full-time doctors, one part-time doctor, and one NP.

Some practices get a price break by combining an **EMR** with a new practice management system. For instance, First Care Family Physicians, a 21-doctor primary care group in Fort Wayne, IN, bought an integrated PM/**EMR** system from Misys (www.misyshealthcare.com) for a five-year cost of about \$650,000. That's \$30,950 per physician, or a bit over \$500 per month.

Small practices can pay much more, relative to their size. Solo family physician Gary S. Schenk of Gastonia, NC, is paying \$112,500 over five years, or nearly \$2,000 per month, for A⁴'s integrated **EMR** and PM system.

On the other hand, internist Daniel Griffin, a soloist in Fort Collins, CO, paid \$19,000 for his entire system. The Praxis **EMR** (www.infor-med.com) he bought three and a half years ago cost him \$6,000, with no yearly maintenance fees. He paid another \$12,000 for hardware. License fees for NDC MediSoft practice management software (www.medisoft.com) were \$1,000.

One way being touted to reduce **EMR** costs is to use an application service provider. ASPs host **EMR** programs and clinical databases on a remote server and serve them to doctors online. They do cut the up-front cost, since you don't need a server if you hire an ASP. But they might not reduce the five-year outlay significantly. For one thing, you still have to buy all the other hardware and infrastructure required for an **EMR**. Your monthly software-and-maintenance fee will range from \$150 to \$800 per doctor, according to Sterling. And you'll also have to pay for high-speed Internet access at a business rate. If you add up all these costs, a medium-sized group could pay as much or more for an ASP-based system as it would for an in-house system.

A small practice, however, may be able to save money by dealing with an ASP, because it might pay more for an in-house **EMR** on a per-doctor basis than a big group would. But Sterling notes that scanning in documents such as results and reports can be a strain on the data-carrying capacity of the ASP. You might also have concerns about security or about losing access to data if your Internet connection goes down.

What's the return on your investment?

Even if your primary goal in buying an **EMR** is to improve patient care, you'll want to see some return on your investment. So it helps to figure out where that's going to come from before you decide how much you can spend.

If you dictate your notes, you'll definitely save money on transcription, which can easily cost \$1,000 a month per physician. South Arkansas Medical Associates was spending \$70,000 a year on a transcription service. "We did a five-year lease-purchase on our **EMR** through a local bank, and the monthly payments on it were \$750 less than we were paying for transcription," says FP Gary L. Bevill, the group's leader. "Plus, we were saving even more on the intangible costs, like people running after charts."

If you don't do dictation, it's hard to quantify savings from an **EMR**. For instance, a small practice won't have a file clerk; so even if it goes paperless, it's more likely to change job descriptions than let anyone go. Even in a larger practice, the person who used to do filing may be needed to scan outside documents and parts of older charts. And while an **EMR** will save staff time on things like refills and charge input, you might decide to redirect employees to provide better patient service or clinical support rather than lay them off.

There's general agreement that **EMRs** boost coding levels and capture more charges than physicians usually write on their encounter forms. Nancy Babbitt, administrator of the Roswell Pediatric Clinic, says that her group's doctors have filed 18 percent more charges since getting their **EMR**. "In the first six months we had it, we saw an extra \$200,000 in net revenues just from capturing all of our charges," she says. "We'd figured on taking five years to pay for this system, and now we may pay it off in two."

What's essential and what's not?

"If you don't establish your needs first, you'll face an onslaught from the vendors who want to tell you what you need," says consultant Jeffrey Hertzberg.

One basic criterion relates to billing: If you buy an **EMR** that's little more than a digital dictation device, you won't create the discrete data you need to generate charges from the **EMR** or have the program check your E&M codes. So it makes economic sense to invest in a more expensive **EMR**. And make sure you can get a reasonably priced interface allowing the **EMR** to send the charges to your billing system.

Many **EMRs** include messaging systems that tell doctors and nurses when patients arrive, how long they've been waiting, and where they are in the office. They may also keep your schedule

updated in real time. But to take advantage of those features, you'll need an interface that sends more than just demographic information from your scheduling system to your **EMR**.

Do you want the **EMR** to include a messaging system that the staff can use to send you online reports, results, and refill requests? Some **EMR** vendors would have your staff do that through your office e-mail system; but if you buy that kind of product, you'll have to switch between your **EMR** and the e-mail system every time you want to check your messages. Also, it becomes more difficult to include the messages in the patient record.

You should also decide whether you want to send reminders and recalls from the **EMR** to your scheduling system. This can be a handy feature if you want to do periodic tests and follow-ups and outreach for preventive care.

Even if your hospital and lab aren't ready to send you data, it makes sense to buy an **EMR** that can easily be interfaced with their systems. To determine whether an **EMR** has that capability, ask the salesperson how many HL7 interfaces his company has written, says Barbara Kelly, a consultant with Gartner in Delran, NJ. "And you definitely wouldn't want something with a proprietary database or platform," she adds.

Having an **EMR** that's prepared for connectivity doesn't mean you can go online with your reference lab tomorrow. But national lab chains like LabCorp and Quest Diagnostics are willing to pay for interfaces on their end, and most major **EMR** vendors are willing to cooperate with them. If your practice deals mainly with a hospital lab, ask your hospital to write the interface.

You should also decide what kind of decision support you want in your electronic prescription writer. The best ones include comprehensive drug data as well as health plan formularies. Check on whether your major payers' formularies are included and how often they're updated. Also, how easy are the prescription writers to use? Will they generate computerized faxes to pharmacies?

Considering the steep learning curve in **EMRs**, you might want to consider the modular approach. At Old Hook Medical Associates in Emerson, NJ, for instance, only one of the seven physicians is using the full Medical Manager **EMR** (www.webmd.net). The other doctors settled for the ability to use the clinical messaging system, prescribe electronically, capture charges, and view patient data—including transcribed notes—on their wireless PDAs.

Medical Manager will soon introduce new features enabling the physicians to take notes on their handhelds and create note-taking forms more easily. Once those are available, Old Hook internist Edward Gold says, the other physicians may stop doing dictation. And when a scanner is installed this summer, he adds, the practice will be poised to go paperless. Meanwhile, he says, the integration of the **EMR** with Old Hook's existing Medical Manager PM system allows a seamless exchange of billing and scheduling data.

'Best of breed' or integrated system?

Some vendors stress the importance of buying an **EMR** that's integrated with a practice

management system made by the same vendor. The alternative is to acquire an **EMR** from a different company and interface it with your PM system. Certain kinds of data can move across the interface, but you still have two different databases. In an integrated system, on the other hand, you have a single database, and everyone in the office—from doctors and nurses to billing clerks and receptionists—has access to both sides of the system.

The big PM software vendors are the most enthusiastic supporters of this approach. Some won't even allow **EMRs** made by other vendors to be coupled with their systems. They argue that they can provide better service to practices with combined systems, and that integrated systems are more efficient.

"Suppose a doctor is documenting a visit in a nonintegrated **EMR**, and he wants to find out when he's available to see the patient again," says consultant Barbara Kelly. "If you're in the **EMR**, you might have to close down and log into the scheduling module." John C. Durham, chief medical officer of Greenway, which makes an integrated system, notes that a physician can look up patient insurance and billing information without leaving the face sheet in his company's **EMR**.

Some interfaced products, however, allow you to toggle between the **EMR** and scheduling systems, notes Rosemarie Nelson, a consultant in Syracuse, NY. Moreover, physicians don't often need to look up billing or scheduling data when they're seeing patients.

On the other hand, if you buy an **EMR** from a vendor other than your PM company, an expensive interface may have to be written from scratch. Even if the interface already exists, you'll have to pay several thousand dollars for it. In addition, interfaces are prone to fail if you change anything in either system.

FP Gary Bevill of El Dorado, AR, can testify to that. His group chose the A⁴ **EMR** at a time when A⁴ wasn't selling its PM system in their area. So the group bought a Millbrook PM system (www.millbrook.com). "Millbrook came in one evening to update their system, and uploaded an enhancement. The next morning, the interface wouldn't work. It took about an hour of phone time to find out where the problem was and fix it."

Beware of **EMR** vendors who say their product will work with any practice management system. "You don't want your group to be the guinea pig," says Ron Sterling. "You want to make sure they already have an installation that's working with your type of PM system."

But if you don't want to buy a new PM system, and you don't like your current vendor's **EMR**, you're better off getting a good **EMR** from a different vendor. "An integrated system has more sophisticated information flow, but if you get an **EMR** you hate, there's no advantage," says Bruce Kleaveland, chief operating officer of Physician Micro Systems, a Seattle vendor that sells both stand-alone **EMRs** and integrated products (www.pmsi.com).

Usability is the key to **EMR** success

Once you've narrowed your search to a few **EMRs**, ask vendors to conduct demos in person or

over the phone with Internet visuals. Also try to visit two or three offices similar to yours that are using the product. "If you go to only one site, you're just going to the vendor's showcase," notes Nelson. Ask for the vendor's entire client list or at least a dozen offices, she adds. "Then you get to pick and choose."

Some physicians have actually flown across the country to see an office of the same size and specialty that's using a certain **EMR**. And it might be even more difficult to find one that has it interfaced with the same PM system you have. But it's worth doing to avoid unpleasant surprises later.

When you're evaluating **EMRs**, realize that the physical layout of computer screens may affect usability. "You can tell that some systems were developed by programmers," notes Nancy Babbitt. "They have 20 or 30 icons across the top of the screen and a toolbar setup. It would take a couple of months to get up to speed so you'd understand where to go next in the work flow."

Usability is also somewhat dependent on how templates—forms with series of questions and check boxes—drive the note-taking process. Unless you get an **EMR** that's oriented to dictation, you're going to have to deal with drop-down menus and check boxes. But the more advanced **EMRs** have made it easier to take notes: First, they let you chart by exception, checking only boxes that show how a patient's condition differs from pre-formatted data. And second, they've accommodated the need to skip around in an exam, especially if the patient has several problems.

For instance, pediatrician Robert "Pat" Jones, president and chairman of the SouthCoast Medical Group in Savannah, GA, says he didn't like two leading **EMRs** because their templates were too rigid. If he were seeing a patient for hypertension, say, and the patient said he had a back problem, Jones would have to finish the hypertension exam before he could open a second template. With the A⁴ **EMR**, he can just add another complaint, pick the relevant data, place any necessary orders, and return to the original template. The **EMR** automatically pulls the back problem exam into the visit note.

Dan Griffin finds the same to be true of his Praxis **EMR**. He has virtually every template set up for any patient he's likely to see. All he has to do to skip from one problem to the next is to go to his general template and find the section on the second problem. After he documents the patient complaint and findings, he clicks on the assessment area. When he selects a diagnosis, the **EMR** supplies forms for prescriptions and lab orders.

Griffin's **EMR**, however, required a great deal of customization. The original templates were very sketchy, and he had to spend between 500 and 1,000 hours customizing them, both during and after visits.

EMRs have come a long way in the past few years, though. Computers are faster and cheaper, software is more usable, interfaces are available between more **EMRs** and PM systems, and connectivity is blossoming. If you get the right **EMR**, and you're willing to make the changes necessary to accommodate it, expect to be rewarded with a more efficient and profitable practice that delivers better patient care.

Where to get your EMR

Here's a list of leading EMR companies. All but the last three vendors are listed in order of the functionality of their products, as rated in 2002 by the AC Group, a Spring, TX-based consulting firm that does an annual vendor survey. AC Group asked the software makers detailed questions about what their EMRs can do. Neither Misys Healthcare Systems, Greenway Medical Technologies, nor Amicore participated in the survey, but all will be included in this year's AC Group survey. Bear in mind that some of these vendors are more oriented to small practices than others are.

NextGen Healthcare Information Systems

795 Horsham Road
Horsham, PA 19044
Tel: 215-657-7010
www.nextgen.com

Allscripts Healthcare Solutions (TouchWorks mEMR)

2401 Commerce Ave.
Libertyville, IL 60048
Tel: 800-654-0889
www.allscripts.com

A⁴ Health Systems (HealthMatics EMR)

5501 Dillard Drive
Cary, NC 27511
Tel: 888-672-3282
www.a4healthsystems.com

eClinicalWorks (eClinicalWorks 5.0)

300 W. Main St., Building B,
Suite 208
Northboro, MA 01532
Tel: 866-888-6929
www.eclinicalworks.com

iMedica (PhysicianSuite)

2250 Charleston Road
Mountain View, CA 94043
Tel: 650-960-6890
www.imedica.com

Physician Micro Systems (Practice Partner Patient Records)

2033 Sixth Ave.
Seattle, WA 98121
Tel: 800-770-7674
www.pmsi.com

e-MDs (topsChart)

500 W. Whitestone Blvd.
e-MDs Campus, Building One
Cedar Park, TX 78613
Tel: 888-344-9836
www.e-mds.com

Noteworthy Medical Systems

6001 Landerhaven Drive, Unit D
Cleveland, OH 44124
Tel: 800-224-9740
www.noteworthyms.com

JMJ Technologies (EncounterPRO)

Cumberland Center II
3100 Cumberland Blvd., Suite 1750
Atlanta, GA 30339
Tel: 800-677-5653
www.jmjtech.com

GE Medical Systems (Centricity Physician Office EMR)

8200 West Tower Ave.
Milwaukee, WI 53223
Phone: 800-558-5120
www.gemedical.com

Alteer (Office)

4 Venture, Suite 100
Irvine, CA 92618
Tel: 949-789-0500
www.alteer.com

MDanywhere Technologies (MDAClinical Suite)

World Trade Center Building
401 East Pratt St., Suite 1700
Baltimore, MD 21202
Tel: 410-547-7455
www.mdanywhere.com

**Monarch Medical
International
(CliniFlow)**

139 Forest Park Circle
Lakewood, NJ 08701
Tel: 877-664-0613
www.monarchmed.com

**Companion Technologies
(CompanionEMR)**

Interstate 20 at Alpine Road
Mail Stop AW180
Columbia, SC 29219
Tel: 800-717-2517
www.megawest.com

**Medical Manager Health
Systems
(Intergy)**

3001 North Rocky Point Drive
East Suite 400
Tampa, FL 33607
Tel: 800-222-7701
www.medicalmanager.com

**Misys Healthcare Systems
(Misys EMR)**

8529 Six Forks Road
Raleigh, NC 27615
Tel: 866-647-9787
www.misyshealthcare.com

**Greenway Medical Technologies
(PrimeSuite)**

121 Greenway Blvd.
Carrollton, GA 30117
770-836-3100
www.greenwaymedical.com

**Amicore
(Clinical Management)**

200 Minuteman Road
Andover, MA 01810
Tel: 877-264-2673
www.amicore.com

How much customization will you need?

If an **EMR** vendor has designed templates for your specialty, you're ahead of the game. Many vendors start with templates for primary care and then work their way through other specialties, says internist Jeffrey Hertzberg, president of Medformatics, a Minneapolis consulting firm.

FPs need very flexible **EMRs** that cover a broad range of conditions, whereas general internists require templates that probe more deeply into complex problems.

With lower-priced **EMRs**, you'll probably have to build forms from scratch, using standardized terms in an embedded clinical dictionary. And more elaborate, prepackaged templates are often hard to customize. You might even find it difficult just to change the order of questions, notes Ron Sterling, a health care technology consultant and president of Sterling Solutions in Silver Spring, MD. And when you change the wording in a template, he adds, it might alter other elements of the **EMR**, such as reporting functions or alerts.

Reese Gomez, vice president of marketing and product management for Amicore, an **EMR** vendor, agrees that this can be a problem. "We're moving toward a standardized clinical vocabulary called SNOMED CT," he says. This is important because functions like allergy alerts are triggered by the clinical vocabulary of the **EMR**. What's needed, he says, is a balance between "flexibility and the need to tie it back to some standard that the computer recognizes."

But for practicing doctors, the key to customization is the ability to do it while they're seeing patients. One reason why FP Gary Schenk of Gastonia, NC, likes the A⁴ **EMR** is that it has hundreds of patient complaints built in, each with a "skeleton" of what he needs to ask. If a patient comes in complaining of pain in his big toe, and there's no template in the **EMR** for that, "I can customize it

on the fly," he says.

That might be impossible in a group where doctors want to practice off the same page. In that case, a committee might have to customize an **EMR**, and the vendor might have to get involved. For instance, the Roswell Pediatric Clinic in Alpharetta, GA, already had standard checkup forms for conditions like ADHD and asthma. That made it easy to customize those templates with the help of Noteworthy, its **EMR** vendor. For things like ear pain and other sick visits, it worked with Noteworthy to design new templates.

If you want your vendor to help customize your **EMR**, you should agree on all aspects of the collaboration in advance, suggests Hertzberg. "One of the things to get settled is who pays for it? If the practice pays, does the customized template stay here, or will you take my template and sell it to others? You have to decide what you're okay with."

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