Practical Advances in Primary Care

HIPPOCRATES

From the publishers of The New England Journal of Medicine

Hippocrates
August 2000
Vol. 14 • No. 8

MAKING THE MOVE TO

Electronic Records

Some small practices are going electronic. The key is to keep it simple.

By Helen Lippman

Computerized patient record keeping has been one of the great, but largely unfulfilled, promises of the digital revolution. The electronic medical record (EMR) has the potential to put the complete patient chart in the doctor's hands whenever it's needed and to keep it up-to-date, as well as to facilitate numerous practice improvements—from flagging allergies and potential drug interactions, to communicating with labs, and even to reminding doctors of guideline-based interventions—all while guaranteeing the highest coding level allowed and eliminating the need for transcription.

The promise hasn't become reality, because EMR systems have been beyond the resources of most office practices, both technologically and economically. Systems were largely designed for, and are still often better suited to, the requirements of hospitals and larger health networks than to the needs of individual physician practices. So although some practices affiliated with large organizations have converted to the EMR, no more than one family physician in 20 has adopted the technology, according to Leonard Fromer, MD, who chairs one of the American Academy of Family Physicians's (AAFP) work groups on medical informatics.

That's beginning to change, as practices get more comfortable with computers and EMR systems become more doctor-friendly. But exploration is still required to find an EMR that serves a practice's individual needs.

Small practices aren't inclined to adopt EMR technology. The reasons for this were explored at an AAFP-sponsored conference that was strategically scheduled to lead into the May meeting of the Medical Records Institute. Along with the sponsor organization, representatives from the American Academy of Pediatrics, the American College of Physicians–American Society of Internal Medicine, leading medical informatics associations, and major EMR vendors together identified four barriers: cost, data entry, product design, and interface. "Basically, the systems are not reflective of physician work flow, and connectivity with hospitals, labs, and office billing systems is not very good," says Susan Rehm, AAFP manager of health information and technology.

To the surprise of many doctors, physician-created barriers were pinpointed as well. "The customization that nearly every practice insists on drives up costs and makes it harder for vendors to move toward standardization," reports Dr. Fromer.

Although the AAFP does not endorse any particular product, a list of companies is available on their Web site and a survey of different EMR vendors is currently under way. For now, however, physicians face the daunting

task of sorting through products designed with far more bells and whistles than they're likely to need or use. But with a realistic picture of what's on the market and which features they need, smaller practices can find systems that fit.

What's Your Goal?

Understanding what an EMR can and can't do is the key to finding one that doesn't disappoint, says Jane Metzger, a vice president at First Consulting's Emerging Practices Group in Boston. Recognizing that an EMR system is multifaceted is equally important. "A lot of people get confused. They start to think of the EMR as just one thing, but it really isn't," she observes. "It's actually a lot of different things, and before you can figure out which features you need, you've got to know what you want to accomplish."

Metzger and Keith MacDonald, a senior manager at the Emerging Practices Group, point out that practices want to go electronic for a variety of reasons; sorting out your goals can help you zero in on a product—and a company—with the capabilities most useful to you.

Going paperless is an objective for virtually everyone seeking an EMR, of course. But, MacDonald notes, it's not necessarily the main motivation. "Some practices care more about cutting costs. Others put the emphasis on quality and care management: they need a very different system—one able to track patients by disease, generate reports on practice patterns and outcomes, and provide clinical decision support in the exam room—than groups whose key focus is money." (See Table 1, which matches goals with EMR requirements and describes what each feature provides.)

To make the most logical choice, concentrate on your practice's larger goals, advises Eric Schnakenberg, MD, a family physician who's leading the transition to an EMR system at Latham Medical Group in Latham, NY. "If preventive care is a priority and you want to know the last time your female patients had Pap smears," he says, "don't wait for the EMR. Start gathering that information now. Then when you go live, capturing the data will be an established function."

Lyle Berkowitz, MD, an internist and the medical director at Proxicom, an e-business consulting firm, urges groups to do a work-flow analysis to define how physicians access, use, and document information. Look closely at the way doctors chart patient visits, retrieve and document lab results, and exchange patient information with other physicians, he advises. Track office flow to determine patterns in chart use: How often are charts missing or incomplete? How many people handle a chart for each patient visit? Do physicians usually look only at the summary or problem list, or do they thumb through old notes as well?

Identify bottlenecks in office flow and make sure your EMR system can help alleviate them. Finally, address any physician hesitations about computerized records. What changes would mean the most to the doctors? Use your findings as a framework as you move towards computerizing your work flow. "Organizational goals, which typically reflect the wants and needs of the administrative and executive staff, will be met best if the physicians' goals are satisfied early. In other words, a sophisticated system will be useless unless you can ensure that physicians accept and use it," Dr. Berkowitz says.

The Good-Enough EMR

The Primary Care EMR Wish List—developed at the AAFP conference—cites 18 top-ranked functions, spanning everything from a patient problem list to appointment scheduling, clinical decision support with physician prompts, an audit trail, lab and billing connectivity, and the ability to scan documents and open multiple patient records simultaneously. Lower on the list are ten suggested functions, including encrypted e-mail, CPT coding support, and online access to health information.

Having it all would be ideal, but there's a growing realization that an EMR does not have to be an all-or-nothing proposition. The bottom line for most practices simply entails the following: the level of electronic support and sophistication desired, the amount of training and adjustment practitioners and office staff are willing to endure,

and, of course, the budget.

In “Rethinking the CPR: Is Perfect the Enemy of the Good?” (published in the May 1999 issue of *Health Management Technology*), Francine Gaillour, MD, a physician and informatics specialist, makes a case for the less-than-perfect computerized patient record. Given the cost and complexity of the most sophisticated systems, she and others argue that it’s better to have some EMR functions than none at all.

A group concentrating on eliminating paper charts and the hassles of getting them where they need to be will want an EMR system with scanning and imaging capabilities, for example. But, MacDonald observes, “The products that allow you to scan in EKGs and other forms to make a practice paperless may not support patient registries, outreach reports, or other functions designed to boost clinical quality and promote disease management. If the practice’s focus is on getting rid of its medical records room, though, that’s not likely to matter.” The idea is for purchasers to get the applications they need—no more or less.

That idea has led to the development of Internet-based EMRs. An office-based EMR—the traditional client-server model—typically costs from about $20,000 to $50,000 per physician in the first year, but a top-of-the-line system to support sweeping office innovations can run as high as $70,000. As software is developed to manage an increasing array of functions, and as more and more records are stored electronically, practices need increasingly high-capacity—and high-cost—hardware to support an EMR.

Internet-based EMR systems, on the other hand, involve a database that’s kept by the vendor and accessed over the Web. They may offer fewer capabilities, but they’re far less expensive.

MedicaLogic, now known as MedicaLogic/Medscape after a recent merger, developed an Internet model when it discovered its office-based product was out-of-reach for many physician groups. “Sales of Logician [its client-server model] are very strong, but that market is realistic only for large organizations that can afford the infrastructure,” CEO Mark Leavitt observes. The company launched Logician Internet, an inexpensive alternative, last October. Within a few months, some 4,000 clinicians were using it.

However, Logician Internet does not give clients continuous direct access to a database on the Web. Instead, users download a patient file, or a portion of it, onto a laptop or handheld computer, enter new data, and then upload the data into the online patient record, which MedicaLogic/Medscape stores. But this limitation helps keep Logician Internet inexpensive—$99 per physician per month, or $199 for those who also lease the laptop.

The product’s relatively low price has made it popular, and it does offer the basic benefits of an EMR: an opportunity to capture notes on patient visits and to generate population reports based on demographics such as age, sex, and some diseases. Each patient record has a medication list and a problem list as well. But that’s it. “Our Web-based model is the beginning of an EMR that’s not yet complete,” a product manager says.

Another arrangement, which offers more capabilities, is the application service provider, or ASP. These vendors offer Internet-based EMRs with direct, continuous access to a leased database storage space. ASPs tend to offer a broader array of functions and, predictably, somewhat higher costs than other Web-based EMRs. For instance, Alteer Corporation, an e-health company based in Irvine, CA, charges a monthly subscription fee of $500 or $600 per physician, but that price includes application software and hardware, Internet access, support services, and regular maintenance and upgrades.

Internet-based EMRs provide more than enough functionality to meet the basic needs of most office practices. “The industry now understands that you don’t need this heavy, deep product. In fact, it’s often the sophisticated features that most people don’t even use that slow everyone down,” says Bob Elson, MD, product manager at Abaton.com, an ASP.

Abaton’s fees are about $200 per month for online charting, prescribing, connections with labs and radiology, office work flow, and more. Its product has what Dr. Elson describes as a modular design. “A group can start out

with simple Web-based lab-results reporting and order entry, then progress to online charting and prescribing, for instance, and later add office messaging and work-flow functions," he explains.

Web-based EMRs are the new kids on the block—available only in the last couple of years—but they have already generated a great deal of interest. "They've become quite mainstream," according to Dr. Elson, "and have irrevocably transformed the EMR landscape."

Security and the Web

The monthly charges of Web-based EMR vendors don't cover everything. Integrating the EMR with labs, radiology, and the practice's billing system isn't included and doesn't come cheap: a group may incur up-front costs of as much as $15,000. This reinforces the disadvantage to smaller groups, because establishing the connection requires roughly the same amount of work and cost whether your group employs 10 or 100 individuals, Dr. Elson says. "Because of the cost barrier, small independent practices will increasingly find themselves left out of the rapidly emerging Web-based clinical-application market—the Web have-nots of health care."

Another drawback is inherent in the very innovation that makes Web-based EMRs less costly: the practice doesn't house or control the database. The electronic charts are stored by the vendor. For some physicians, that's a fatal flaw. "In the end, you really want your records within the confines of your facility because otherwise someone can hack in and get them. There's always a back door," asserts Tripp Bradd, MD, a physician at Skyline Family Practice in Front Royal, VA, who purchased an EMR in 1994. Vendors counter that online records are generally more secure than office-based records because the professionals can afford more sophisticated security and encryption, keeping access strictly limited. However, a technical support person would need entry into an online database in the event of a system failure; while that's equally true for an office-based EMR, physicians have more control over who has access to the different parts of an office-based system.

In time, some of the anxiety may dissipate. "As the security requirements of the Health Insurance Portability and Accountability Act take effect, Web-based medical records are really going to take off," predicts Michael Brown, MD, a computer and information specialist at Harvard University Health Services. He's referring to a portion of the 1996 law that deals with establishing national standards for the security of medical electronic transactions.

An announcement from Health and Human Services Secretary Donna Shalala about final security rules is expected later this year. But, MacDonald points out, the proposed rules have some very clear implications: EMR systems will require the capacity to create an audit trail that tracks everyone who has opened a particular patient chart. They'll also need a system of graduated access so that more sensitive information is restricted to those who need it. "These capabilities must be on the list of things to look for in an EMR," he emphasizes.

EMR users and sellers have plenty of other advice about what to look for. "Be sure the system has browser capabilities, because the Web is where the world is going," advises Kevin Fickenscher, MD, senior vice president of an electronic connectivity company, CareInsite.

Look for a system that's fast enough—generally defined as no more than two seconds for a change of screen—and flexible enough to allow some customization, Dr. Brown advises. He also cautions against signing on with any vendor whose product is extremely complex. "They'll tell you it's impossible to understand until you've been doing it awhile, and to some extent that's true," he says. "But physicians will use an electronic function only if it makes their job easier, which won't happen if the system is too complicated." That's why it's important to understand what you are buying before you make the purchase.

Other precautions: Make sure any system you buy can be expanded—to accommodate new functions you may eventually decide to add, as well as
the needs of a growing practice. Furthermore, be sure the level of tech support is spelled out.

Finally, Dr. Brown says, find out what will happen if you decide to stop using your vendor. If you go with an ASP,

for example, will you lose all the data you've entered into the online charts? If you have a client-server system and decide to switch to another vendor, will the software you've purchased be compatible?

Going Live

When it comes to implementing an EMR system, experienced physicians advocate doing it gradually. "It should be an incremental approach, not the Big Bang," Skyline's Dr. Bradd advises. That will mean a lot less downtime and, generally, less physician and staff frustration, he and others say. It's also a good idea to begin with something that gives physicians an immediate boost; the sophisticated and more efficient bells and whistles can be implemented later.

Electronic messaging was that "something" at Latham Medical Group, which is now in the process of getting its EMR fully operational. Says Dr. Schnakenberg, "We get 500 to 600 phone calls a day. Now, instead of jotting down messages on sticky notes, the phone receptionist types the message into the EMR and sends it to the appropriate party, which may be the triage nurse, the billing department, or the patient's provider. The message immediately shows up in my in-box, flagged according to priority. If it's from a patient requesting Claritin, for instance, and I decide it's clinically appropriate, I can simply click on 'fax' and the order goes directly to the pharmacy."

For most purposes, though, Latham still relies on paper charts. Although demographic data on each patient were electronically transferred from the practice's billing system to the EMR, populating the medical record—tech-speak for entering the data—is far from complete. That's one of the biggest stumbling blocks to rapid implementation. Initially entering existing patient data can be daunting, but an EMR system can't function fully without such information.

But as with implementing an EMR system, entering data need not be an all-or-nothing proposition. Instead of attempting to input every piece of paper and every bit of information from a chart, Latham Medical is concentrating on only the most pertinent: summarizing clinical conditions, medications, and allergies into a formatted problem list. The remaining information will be archived in hard copy. "Basically, we're taking it from what happens now," Dr. Schnakenberg says.

Dr. Schnakenberg, who expects prescription management, complete with prescription-interaction alerts and formulary-compliance checks, to be rolled out next, offers these final words of wisdom: "Do not start off on an EMR by doing something—capturing a particular piece of patient data, for instance—that you do not normally do." Start with aspects of record keeping that are already useful to the practice, make the system as simple as possible, and only gradually add functions. That allows physicians and office staff to become comfortable with the system, and they can grow with it as they are convinced of its benefits.

TABLE 1. FINDING THE ELECTRONIC MEDICAL RECORD SYSTEM THAT'S RIGHT FOR YOU

GOAL	EMR REQUIREMENTS	DESCRIPTION
1. Improved clinical quality, disease management	Patient registry	Identifies and tracks patients targeted for disease management
	Prescription management	Supports entering of prescriptions and checking for problems (allergies and interactions)

		and formulary compliance
	Point-of-care decision support	Provides prompts to physicians on guideline-based interventions
	Outreach reports	Identifies patients to be considered for follow-up through lists and mailers
	Practice-analysis reporting tools	Permits retrospective analysis of practice patterns and clinical outcomes
2. Improved operating cost efficiency	Replacement of transcription	Allows direct capture of notes through templates, scanning, and voice recognition
	Prescription-renewal processing	Permits automated renewal requests for internal routing and approval
	Team messaging	Facilitates internal communication
3. Increased revenue generation and reimbursement	Clinical coding integrated with encounter notes	Derives codes for billing from documentation
	Evaluation and management coding advisor	Assists physician in assigning the appropriate level of visit for billing
	Referral management and authorization status	Tracks open referrals
4. Improved access to data, reduced medical record costs	Basic charting capabilities	Easily accommodates problem lists, medications, and physician notes

	Interface with lab systems	Automatically incorporates laboratory data in the EMR
	Flexible display, graphing, and query capabilities	Has multiple methods of displaying integrated patient data for review (flow sheets, patient summary screens)
5. Support of paperless environment	Document scanning	Captures paper-based documents for review online
	Improved access to data	As described in goal 4
6. Patient interaction and empowerment	Clinical e-mail	Allows secure patient electronic communication with the physician and practice and access to documents in the EMR
	Access to knowledge/tools for collaborative decision making	Provides displays and content knowledge to enhance patient-physician discussions
	Access to knowledge/tools for self-management	Provides printed educational materials, summaries of visits, and self-management plans to increase patient recall and compliance
7. Support of sweeping office redesign/reengineering	Work-flow/message management	Organizes and rationalizes information flow and closes process loops

	Test-result management	Tracks outstanding tests and facilitates patient follow-up
	Quality tools	As described in goal 1
	Improved access to data	As described in goal 4
	Patient interaction and empowerment	As described in goal 6

Source: First Consulting Group, Boston MA, 2000

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Resource

Rehm S, Kraft S. Checklist for EMR systems [appendix E]. ***How to Select a Computer System for a Family Physician's Office*****,** 2nd ed. American Academy of Family Physicians Web site. Available at: http://www.aafp.org/fpnet/guide. Accessed July 19, 2000.
