

Ask the Experts

In this and future issues of *MPM*, we ask a panel of experts to comment on a pressing issue of the day. Let us know if you have suggestions regarding experts you would like to hear from or questions you would like to see addressed.

What will it take for widespread implementation of electronic systems such as health records (EHRs) and e-prescribing (eRX) in medical practices? What impact will everyday use of these systems have on the quality and cost of medical care?



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From the practicing physician's point of view, 1 of 2 things has to happen for widespread adoption of electronic health records (EHRs) and eRX. There has to be either a "carrot" or a "stick."

Carrots are preferable, but are less likely to happen. Examples would be managed care helping to underwrite the cost of EHRs or eRX, significant bonus for using EHRs (more than the Medicare Quality 1%, or practices being able to reduce the number of full-time equivalents (FTEs) through increased efficiencies provided by EHRs and eRX.

Possible "sticks" include "you can't participate in our plan unless you use EHR," or "if you continue to use traditional paper charts, you will be asked to mail in 10% of your records for review," and so on.

What is most likely to happen is that individual physicians will adopt eRX by using Blackberries or other electronic devices and then gradually will

transition to EHR. Florida Medicaid introduced me to this about 5 years ago when they gave me a free combination PDA and cell phone—who would *not* want to carry that around? My daughter is a 3rd year medical student at Florida State University, and FSU requires her to carry and use a PDA all the time.

Concerning the effect on quality and cost of medical care, many physicians in solo practices are going to have difficulty spending \$50K on a new computer system. Remember their overhead is already more than 60%, and they just can't afford it. Some may even take early retirement rather than switch to an EHR. One ray of hope is the advent of server-based software (in which the programs sit on a remote central server). This may reduce costs significantly.

Will the cost of care decrease? Not without disease management programs being integrated into the EHR. Will the quality be affected? You bet! Patients *hate* it when the provider focuses on data entry rather than listening to them. People may get better medical care from a scientific basis, but it will not be perceived that way by the people who really matter—the patients whom we serve.



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While there are intimidating barriers to implementation, (time spent to enter data, typing proficiency, confidentiality, depersonalization of the patient-physician encounter, entry costs to implement, access to affordable professionals capable of solving glitches and minimizing downtime), there are such wonderful outcomes like:

- What an elegant way to solve the handwriting issue!
- Communication: How valuable it is to be able to provide a printout of an instant chart note for your patients, allowing their review of recommendations and medications, and creating a document they can present to a consultant.
- How easy it is to access chart notes, labs, and consultation review, and enter this information



into the system in a well-organized way.

- The guarantee of complete documentation of all communications with the patient by phone, visit, or email correspondence is invaluable.

- The hope that eRX can ease delays in providing medications, reduce telephone calls, and address diversion issues can likely come true.

- Efficient entry of demographic, insurance, and personal data by front-desk colleagues, and immediate processing of clinical data may become realities.

If EHR becomes a mandatory requirement, we better have access to a proven, uncomplicated, affordable, and hopefully fail-safe product that can accommodate and adapt to disparate record keeping and communication systems utilized by consultants, colleagues, laboratories, and pharmacies, and it must be capable of interacting with I-pods.



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When a medical practice decides to go for electronic systems, the 2 major issues that arise are (1) cost and (2) acceptance by all the players of the practice, including clinicians, nurses, staff, and administrators.

For widespread implementation of electronic systems to occur, the above 2 issues must be addressed. There are EHR systems that are available at low cost, but they are not well-known to many new medical practices. Also, government provision of an open-source free application for practices would really boost the widespread implementation of electronic systems. eRX is now available for *free* to all physicians via the National ePrescribing Patient Safety Initiative (NEPSI; www.nationalexrx.com).

To successfully implement electronic systems, such as EHRs and eRX, medical practices need to first understand these tools and their benefits. Once they

know how the technology is going to affect the way they practice, they can improve the buy-in of all the players of the medical practice—physicians, nurses, staff, and administrators. All have to agree to use the electronic systems first. A practice needs to involve clinicians in this decision-making process because they are the ones who will be using it mostly.

Once such an electronic system is in place, it will impact the practice as well as the medical-care system tremendously. For example:

- *Improved Efficiency:* With electronic patient charts, one can have all the information, always available at all points of care.
- *Improved Quality of Care:* With electronic patient charts, the information is legible, easily transferable, and complete, allowing improved preventive care with timely reminders and health tracking. Prescription data can be easily monitored for a patient.
- *Reduced cost in the long term:* There is less duplication of tests/studies because many times tests are ordered by mistake because the previous test results were not available. Having an electronic patient chart reduces the cost of paper, copying, and storage.



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Many factors would help promote widespread implementation of EHRs. Most important, they must be affordable (or better yet, free). Easy, non-time-consuming education about how to use such systems would help. In an ideal world, electronic systems would be compatible across the spectrum of health care and would be user friendly. They would speed up the process of giving patient care, not slow it down. Physicians would surely be more likely to use a system that allows them to become more efficient, and even more appealing would be a system that helps them to bill more appropriately and get paid more money more quickly. Even if EHRs and eRX were costly, good proof that in a short period they would pay for themselves with more billing revenue would certainly be an impetus for much faster physician acceptance and use. Also, it would be helpful if providers knew that using such systems would be

beneficial to them and not just to hospital systems, government agencies, and HMOs/insurers.

Benefits to physicians would be hard, reliable data that show they are providing quality care in any number of ways or that enable them to clearly and easily track how to improve their care. An easily used EHR should also help with clinical pathway guidelines, leading to better quality. Increased utilization of resources could be another quality outcome. In our utopian world, costs would be improved by limiting repetitive workups, making physicians more efficient, and making it easier to ensure continuity of care for patients.



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So much has been written regarding the promise of safety and quality that EHRs will bring. However, without thought about workflow, integration, and validation, they will be little more than “charts on a computer.” True implementation of EHRs changes the entire workflow of a practice. It changes how messages are managed, how patients receive communications, and how incoming information is reviewed, distributed, and integrated into the medical record. The obvious “wins” are improved legibility, the ability to manage medication lists, and the ability to store and share information. What is often not incorporated is how to integrate this information across settings of care, including the emergency department and the nursing home, to ensure that the needed information is available where the patient is getting care. Another “gap” that is often not well-defined is the process by which the information within the EHR is actually validated. A classic example occurs when a primary care physician has an inaccurate medication list that has not been reviewed. It is far too easy for other healthcare professionals to merely “cut and paste” what they find in the record. If the process for data validation is not included, then informational errors can spread with the speed of viral replication to every other member of the healthcare team who has access to this record.

When it is well structured, the EHR has powerful potential to improve care and reduce errors. Alerts can

be built into the programs to remind the clinicians when key interventions or healthcare maintenance issues must be addressed. Templates based on presenting problems can be designed to direct the clinician to appropriate screening tests and evaluations. Problem lists can be easily updated and integrated into planned visit reminders. eRX can eliminate legibility errors and can provide alerts for allergies or potential drug–drug interactions at the time of the prescribing, rather than in a retrospective review. EHRs also have the potential to develop population registries that are essential to the management of chronic diseases and complex medical care. More advanced applications of the EHR allow patients to access portions of their own medical records, including lab results. EHRs can provide self-management tools to support the patient’s or caregiver’s ability to address chronic conditions. Many sites are even using portals to allow for direct clinician-to-patient communication that improves patient access and avoids unnecessary delays in resolving questions.

Moving from paper to computer, by itself, will not drive huge changes in health care. These changes will occur when the computer becomes a vehicle to improve care planning, information sharing between site and providers, and better engagement of patients in their own healthcare management.



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The concept “information wants to be free” may make sense to the users of information but not to those with an economic stake in the information—in this case, medical practices that keep patient records. There is no bright line delineating the historical moment when health records, which were considered the property of physicians, emerged into the current mixed climate in which patients themselves may be the owners—at least in part. Health records are fragmented, with health systems, pharmacies, credit card companies, insurers, and perhaps many others all claiming a piece. In the future, the courts will have much to say about the ownership of intellectual property since information embedded in electronic systems increases in terms of the number of data elements that are cap-

tured and that can be exchanged interoperably.

Physicians in individual or small-group practices (the majority of physicians in this country) consider the simple health records they keep to be their own intellectual property because the documents are not simply a record of scores of diagnostic procedures or catalogs of treatments. Instead, health records are biographies of patients that are authored by the physician, reflecting the physician's skill in assessing what the patient needs. They also demonstrate the physician's ability to provide the care personally or to refer the patient to other clinicians—reflecting the physician's skill as coordinator of patient care.

The technical capability to create and use health records and other forms of electronic communication such as eRX isn't enough to ensure that the EHR systems will be adopted and used. That technical capability must be used to improve the quality and cost-effectiveness of health care. For example, Esperanto, developed 100 years ago as a universal language, is spoken by almost no one, though its creators believed it would contribute significantly to world peace. I suspect that EHRs and eRX will be adopted at ever greater rates simply because we are all used to electronic communication. But, the intricate ways in which ownership and use of data play out will likely mean that some costs will go up and others down; some aspects of quality will go up and others down. We are nowhere near addressing the social aspects of the healthcare system in ways that ensure that information technology fulfills its promise.



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Electronic systems continue to make their way into the practice of medicine. The acceleration of use will hinge on applications that do a better job of solving the needs of today's patients and practitioners. Patients want accurate diagnoses and appropriate care; physicians want greater efficiency and safety; both want to be better informed.

One of the breakthrough applications may in fact be eRX. There is nothing more frustrating than writing the same prescription 3 or 4 times in a year be-

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cause of a change in insurance plans, a 30-day limit, a hospitalization, a change in providers, or just because "it got lost." I do not think mandates on quality will make much of a difference. Applications will eventually come forward to capture the hearts, minds, and pocketbooks of pharmacists, physicians, and patients and get us out of the current quagmire.

These applications already exist; it is just a matter of abandoning old legacy systems and overcoming our inertia to invest in the future. Practitioners just starting out in a practice embrace newer technologies, yet are often stymied by old hospital systems, nursing homes, and pharmacies set in their own ways. Once an application can prove its worth, changes generally occur for the better. It was not that many years ago that my practice had to purchase fax machines for our local nursing home.^{1,2} These were uncharted waters, and the transmission of faxed orders had been viewed by surveyors and facilities as unacceptable. Telephone orders with their phone-tag delays and inherent transcription risks were the norm.

Charles Schwab, the big brokerage firm, talks about the "lazy money" that sits in so many checking accounts. Banks count on our inertia to keep us from the new Schwab account that pays 4.25% on any balance with "no catches." Similar savings will come to health care when we can do more with a single-sourced and shared electronic record. A harmonious system that embraces in only 1 equation the combined needs of the patient, pharmacist, and physician will be, dare I say, a killer application.

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References

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