Why Don't We Have Computer-Based Patient Records

by Erica Drazen, ScD, FHIMSS

In 1991 the Institute of Medicine produced a report that came to the unequivocal conclusion that to make advances in the quality of care, efficiency of process, and containment of costs, we needed to adopt computer-based patient records. They even subtitled the report "An Essential Technology for Health Care."[1] Reports from early adopters have confirmed the benefits of increased computer support to provide access to information and to enhance medical decision making.[2,3,4] However, as we examine the industry, it appears that we have made little progress toward the goal of computer-based records. What has been accomplished, and why haven't we made more progress?

Appearances Can Be Deceiving

One of the reasons for lack of visible progress is that "computer-based patient records" is a goal, not a product. We will achieve the computer-based record only by steady migration toward the vision, while implementing support that addresses critical issues for today's business.

There are many examples of significant progress. Providence Health System in Portland is well on its way to implementing support for ambulatory patient records throughout its physician network. Harvard Community Health Plan has begun rollout of a new computer-based patient record to replace its ancient (but very honorable) COSTAR system. Mayo Clinic in Rochester, MN, is implementing support for ordering, results reporting, encounter documentation, problem list, and patient-supplied information. While these applications can be implemented in a modular fashion, they are designed to operate together to form the core of an ambulatory patient record. Computer-based ambulatory record systems are in the pilot stage at Kaiser in Southern California, Colorado, and Georgia, and a self-developed system is in use in the Kaiser mid-Atlantic region. While these examples are all large systems, they were selected because they are well known and have been well documented. There are many other examples of significant progress by large and small institutions throughout the country.

Some institutions that have not yet reached the pilot stage are working on foundation issues, such as implementing network connectivity, agreeing on approaches to patient identification, and developing protocols for care that can be implemented with a computer-based record.

Despite all these positive signs, there clearly are thousands of institutions serving well over half the people in this country that are as far from reaching the goal of the computer-based patient record now as they were in 1991.

What Are the Barriers?

While the most talked-about barrier is cost, the most significant barrier is probably lack of leadership. There is no doubt that implementation of computer-based records will be expensive, and the solution proposed by the Institute of Medicine-that costs be passed through to payers-is not realistic in the current competitive environment. Estimates of the initial costs of implementing computer-based records range from $40 million to more than $200 million with ongoing operating costs approaching 5 percent of the operating budget of the enterprise. However, these costs are on the same scale as the major building programs of the last decade and the costs involved with acquiring a physician network or starting up a managed care organization. Our institutions know how to raise capital for essential business initiatives; why aren't we using that skill to move computer-based records forward?

Could it be that the leaders of growing integrated healthcare enterprises think that computer-based records are unimportant to developing a true integrated delivery system; that the task is so straightforward that it can be delegated to the information services department; or that it can take a back burner to more urgent issues?

Is the Computer-based Record Really an Essential Technology?

An integrated delivery system is intended to provide cross-continuum health services to a community of patients, take responsibility for improving the health status of the community, and provide cost-effective healthcare services. An integrated delivery system is intended to provide access to appropriate healthcare services, to guide patients to adopt healthy lifestyles, to manage the patient's episode of care, and to guarantee one standard of quality care throughout the network. To accomplish these objectives when treating an individual patient, the provider needs to be able to answer questions such as:

- What health services have been received? What was the outcome of earlier treatments?
- What chronic conditions need to be managed? What are the current active problems? What medications have been prescribed? What medications have been taken?
- What preventive services are appropriate? Are any due or overdue?
- What services is the patient eligible to receive? What specialists are in the patient's network of providers? What formulary restrictions apply?
- In addition to this patient-specific information, the provider needs to know:

- Are there local protocols for treating this condition?
- Have there been new developments in diagnosis and treatment that I should be aware of?

There are no examples of settings where these questions can be consistently answered without the support of computer systems. Physicians are unable to consistently apply even five preventive and follow-up guidelines because they lack the information to trigger the guideline, or because they are focused on other patient problems. Paper records have been documented to be error filled, incomplete, and often completely unavailable even within one institution. The problems are multiplied in an integrated delivery system. It is impossible to even locate the source of all medical information without computer support.

We can create legally integrated delivery systems now, but we will not develop clinically integrated delivery systems until we can provide access to information and decision support at the point of care across the continuum. We need computer-based patient records to achieve clinical integration.

Is This an Information Systems Issue?

Providing appropriate access to care, delivering recommended preventive services, and coordinating delivery of care are clearly issues related to the core business of healthcare. Implementing change in these processes is a business decision, not an information systems decision, and this requires business and clinical leadership. The information services department can take responsibility for implementing the infrastructure, reviewing solutions to ensure that they fit with the overall enterprise architecture and standards, and suggesting new ways that information can support business goals. However, it is the overall leadership of the enterprise that must set the business objectives, determine the priority for improved information management, and implement the changes needed to make improvements. It is the clinical leaders who have to wrestle with issues such as: Who should be allowed to book appointments to a specialist's schedule? When should the advice nurse refer a patient to the emergency room? How do we treat community-acquired pneumonia? What are the appropriate uses of human growth hormone?

Planning for the implementation of computer-based patient records involves business change and change in information management and technology. It can only be addressed by a team of business management, clinical management, and information management professionals. Institutions that cannot take this approach will never achieve the goal of clinically integrated delivery systems.

Can We Wait?

We are in the era of competition. If you are "lucky," you are in a market where you are competing with other "integrating" delivery systems or stand-alone institutions. Next, you will be in the "war of the networks" that is being played out now in heavily managed care markets such as Boston, Minneapolis, Portland, Seattle, and California. The federal government has made it clear that it will preserve medical competition in all major markets so the "war" will spread across the country.

Currently, the competition is based on cost. However, since price is set by the market, in mature markets, low cost becomes a ticket to play, and the advantage comes from improved service quality, improved clinical quality, and continuous improvement. Improved service quality is perhaps the most neglected strategy. One reason it is neglected is because it requires information support. Why is it that if a member visits five locations in an "integrated" delivery system, he/she needs to repeat demographic information five times? Does the third physician who asks you your father's cause of death assume that this has changed since you were admitted to the hospital? Why does the muffler shop always call you to see if your new muffler has improved your car's performance, but your doctor never calls to see if your new blood pressure medication is working? Why can you see a physician 24 hours per day, but you can only book an appointment between 9 and 5 on weekdays? The answer is: We have not focused information management on supporting service quality.

Advances are being made. Large HMOs are segmenting their populations according to their healthcare needs and then providing different approaches to addressing the needs of the healthy, the generally well, those with one major health problem, and the very ill. Clinics are setting up call centers where patients can get advice, request medication refills, or book appointments with one call. For the most costly diseases, many enterprises are implementing programs of active patient follow-up. While all these initiatives will reduce costs of service, they also create a new level of service quality. Institutions that are not applying information management tools to service quality will never withstand the entry of aggressive managed care organizations who can afford to undercut prices to enter a market.

Since market domination is impossible, a sustainable advance requires improving and staying ahead. However, to move forward, you need to be able to assess where you are and what advances will provide the most value. Think of the advantage your institution would have if you could analyze your practice in treating the 20 most common inpatient and outpatient problems, compare your performance with others, decide how to change, and then ensure that "best practice" was followed every time.

What managed care leader would not like to be able to instantly answer these questions:

- What preventive services are needed, and how well are we meeting these needs?
- Does our use of antibiotics conform with best practices?
- Have all the patients in our population who have reported a problem with ulcers been evaluated for antibiotic treatment?
- What enrolled patients have not been seen by a primary care provider?

However, without access to the information that is developed as a byproduct of implementing computer-based records, these questions remain unanswerable, and improvement programs can only address the typical problems that savvy competitors have already solved.

We have reached the stage where early adopters have proven that computer-based records can be implemented, that they provide real value, and that physicians are satisfied with their computer support. The question now is who will act now and thrive, and who will delay and not survive?

Notes

1. Dick, R.D., and E.B. Steen, editors. *The Computer-based Patient Record: An Essential Technology for Health Care*. Washington, DC: National Academy Press, 1991.

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