

The Future of Healthcare Technology

*Christina Beach Thielst, CHE, Health Administration and Management Consultant,
Santa Barbara, California*

During my 25-plus-years career in healthcare, many things have stayed the same in the field. Much has changed as well, however. Advances in technology for the treatment and care of patients have been profound, but use of information technology has been slow to evolve—until recently. In this column I will discuss emerging and evolving technologies and highlight those that present tremendous opportunity for improvement and value to patient care.

Technology is a tool that comes in many forms and usually helps improve efficiency and effectiveness. However, technology alone does not improve the efficiency and effectiveness of patient care. Any successful implementation of technology requires a complete understanding of the technology's capabilities and limitations as well as the processes it replaces and connects. Healthcare organizations and their leaders can achieve sustained success only when they have analyzed and managed workflows and applied the technology appropriately. Planning for technology implementation entails the following:

- Being aware that technology is not stagnant but is constantly evolving (and some at a faster rate than others).
- Knowing the needs of various stakeholders and to whom benefits of the technology accrue.
- Understanding public policy and its impact on the evolution and adoption of the technology.
- Incorporating process improvement techniques to guide the planning and implementation processes.
- Addressing staff and user education needs.

BACKGROUND

The enlightening Institute of Medicine (1999) report *To Err Is Human* raised a great deal of public attention on medical errors and patient safety. At the same time, the public was beginning to recognize the need for operations efficiency to control healthcare costs, the looming healthcare staff shortages, and the rapid increase of healthcare demand by the uninsured and aging baby boomers. Some people were even aware of grassroots efforts by local and regional healthcare organizations to connect providers in disparate organizations, allowing for an electronic exchange of health information that would benefit care delivery, quality, and safety.

Momentum for health information technology (HIT) grew when, in 2004, President George W. Bush set a goal for the creation of an electronic health record for every American by 2014. To help with this goal, President Bush instituted the

Office of the National Coordinator for Health Information Technology (ONC, see www.hhs.gov/healthit) within the U.S. Department of Health and Human Services and appointed Dr. David Brailer as its leader. Soon after its establishment, the ONC has developed the "Strategic Framework" (see www.hhs.gov/healthit/strategicfrmwk.html), specific courses of action for achieving improvements in health information technology.

Healthcare leaders are working to understand various HIT options; ways of ensuring the privacy and security of patient information to comply with the Health Insurance Portability and Accountability Act (HIPAA); and the importance of sharing patient information with other providers, who are sometimes competitors. Physicians, chief executive officers, and boards do agree on the importance of HIT, but they struggle to justify its cost when most of its benefits accrue to others, such as payers.

Healthcare organizations are turning a corner, making the implementation of HIT just another cost of doing business, rather than a decision based solely on a return-on-investment analysis. The following indicate that HIT is becoming more prevalent:

- In 2005, a study by the American Hospital Association highlighted the need for both public and private healthcare organizations to make a major investment in information technology and to establish a set of standards to allow different computer systems to "talk" to each other. The study concluded that hospitals need help to accelerate HIT adoption and utilization.
- In 2005, the annual leadership survey by the Healthcare Information and Management Systems Society found that 87 percent of hospitals surveyed had implemented or were planning to implement an electronic health record (EHR) system. The survey also reported that 61 percent of these hospitals cited EHRs as their top technology priority.
- Researchers at Florida State University found that clinical information technology leads to more significant operational improvement than systems for operations. The study also indicated that adoption of IT in an acute care setting is consistently related to improved financial outcomes, operationally and overall.
- Medicare, a good trend setter for other payers, has a fundamental interest in restructuring the healthcare payment system. This federal insurance program intends to become a value-based purchaser and, to that end, will measure pay, at least partially, based on performance and not purely on volume. With Medicare, the days of the more hospitals do the more they get paid are about to end.
- In 2004, MedVantage's survey of pay-for-performance programs (P4P) revealed that IT was the fastest growing measure in P4P programs, because managing a disease population is difficult without the support of good IT. This finding means that, for some P4P programs, just having IT is an indicator of performance.

THE PROMISE OF TECHNOLOGY

In the future, a patient's health information will be available electronically, following as the patient progresses through the system of care and various providers. Patients can expect their physicians and other providers to have immediate access

to their health records. A thing of the past will include delays caused by requesting records that require a completed and signed paper form, waiting for the copy service to arrive, and having a courier drive records across town.

Some healthcare leaders are surprised to learn that HIPAA and its privacy and security regulations actually enable advancement in technology. HIPAA provides a baseline of standards that permit the diffusion of electronic health records capabilities and the appropriate exchange of information. This means that request for a patient's records can and will be electronically processed and that the appropriate records will be released immediately to the treating physician and other caregiver. "Break the glass" mechanisms and automatic audit trails will keep the honest people honest and will identify those who choose to abuse public trust and misuse private health information.

Physicians, especially those familiar with IT and desiring more work-life balance, will recognize the value of interoperable health records and the potential of electronic data exchange with other providers. For example, rather than hiring an office clerk to scan copies of lab reports into the electronic medical record, physicians will be able to automatically scan for reports and results on their patients from other providers' electronic records and flag these for review and possible download onto their own records. New technologies will also allow physicians to monitor trends and their patients' response to interventions and improve their ability to manage patients with chronic diseases and demonstrate better outcomes for pay-for-performance programs.

Patients will take a more active role in managing their healthcare, ensuring that they are receiving safe and effective treatment. Personal health records will help patients to organize their private health information and to efficiently communicate with their caregivers about test results and follow-up plans. Some patients will use remote patient-monitoring tools to help them and their caregivers recognize early signs of possible decomposition, respond more appropriately to warning symptoms, and more effectively manage their chronic diseases—from anywhere in the world.

Hospitals, long-term care, hospices, and other facilities will benefit from improved utilization of resources and improvements related to freeing up staff time for direct patient care and other responsibilities.

CONCLUSION

The next installment of this column will offer a distinction between electronic medical records, electronic health records, and personal health records. The column will also explore the possibilities related to virtual health records.

Reference

Institute of Medicine. 1999. *To Err Is Human: Building a Safer Health System*. Washington, DC: National Academies Press.

For more information on the concepts in this column, please contact Ms. Thielst at cthielst@cox.net.