

Issue: Health Care Information Technology

Framing the Issue

Over the years, technological advances in medicine have improved treatment for a wide range of diseases, injuries, and other medical maladies. And yet, while some hospitals have invested millions of dollars in medical technology like magnetic resonance imaging machines and other sophisticated equipment, beneficial applications of information technology (IT) in the U.S. health care system lag that of most other industries and the health care systems of most other advanced nations.¹ While progress has been made in addressing our nation's health care IT challenge, much remains to be done.

Patient-related information technology typically focuses on activities such as treatment alternatives, sharing data and images among physicians, accessing patient notes, retrieving medication information, billing, scheduling, prescribing medications and other patient orders.

The U.S. health care system is a fragmented collection of hospitals, physicians, insurers, labs, and pharmacies that still rely primarily on paper records to collect, track, and communicate patient-related information. This paper-based information is not sufficiently standardized or shared between factions within the system. Health care experts, including the Institute of Medicine (IOM), contend that these system-wide deficiencies significantly contribute to increased treatment errors and costs that could be avoided with the adoption of integrated health information technology.²

Unfortunately, no more than a quarter of our nation's physicians report having access to any form of electronic patient information, and only about 11% of U. S. physicians use an integrated electronic health records (EHR) system. Only five percent of U.S. hospitals use computerized physician order entry systems, an indicator of EHR adoption in in-patient settings.³

U. S. health care's reluctance to more fully embrace IT is based on a variety of factors, including: lack of economic incentives for health care providers who would have to shoulder the bulk of the IT investment costs; resistance to IT and the change it represents; and lack of a national system for standardized medical data coordination, collection, and exchange.

¹ "Commonwealth Fund 2006 International Health Policy Survey," *Health Affairs* journal, 11-2-06.

² "To Err is Human: Building A Safer Health System," a report by the Institute of Medicine, 11-99.

³ "Health Information Technology in the U.S.," a report by the Robert Wood Johnson Foundation, 10-11-06.

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Progress Being Made

Responding to July 2004 IOM recommendations,⁴ the Bush Administration announced a goal to modernize the nation's health care information technology, hoping to create a paperless U. S. system by 2014. Automated patient information could save an estimated \$142 billion in U.S. physician offices and \$371 billion in U.S. hospitals over the next 15 years.⁵

Progress to date includes initiatives on a variety of fronts.

For example, the National e-prescribing Patient Safety Initiative – a coalition of hospitals and companies including Dell, Google, and Aetna – will enable U.S. doctors to use a Web-based tool to write electronic prescriptions for free, an improvement that should dramatically reduce the thousands of medication errors caused by physicians' illegible handwriting. (An estimated 90% of the nation's 550,000 doctors have Internet access, but fewer than 10% use electronic medical records and e-prescriptions.)⁶

Pharmaceutical companies are supplying bar code information on labels to make it easier for hospitals to ensure that patients receive the correct doses of the prescribed medications. Before dispensing a patient's medication, a nurse scans the bar code on the medication package and the bar code on the patient's medical bracelet. If the two don't match, the scanner flashes or beeps an alarm alerting the nurse to the discrepancy.

Hospitals have begun adding digital information to their systems, such as having nursing assessments routinely put online and allowing doctors to electronically write orders and create reports. Some hospitals have transformed their radiology departments from film to electronic images that physicians can access online.

The information technology challenge in health care is complex and daunting. Much remains to be done if the nation is to realize the safer, lower cost paperless health care system many envision. Success will require collaboration, commitment, and patience by all those involved.

St. Luke's Position & Practices

St. Luke's Health System has a well-established record of quality health care and patient safety recognized by peers and patients alike.

As part of its continual effort to enhance patient care, St. Luke's is implementing a multiyear

⁴ "Patient Safety: Achieving a New Standard of Care," IOM report, 11-20-03.

⁵ "Health Care Spending and Use of Information Technologies," *Health Affairs*, May/June 2006

⁶ "Cause of Death: Sloppy Doctors," *Time*, 1-15-07.

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strategy designed to make steady sustainable improvements in the use of medical IT. The initial focus has been on imaging, lab work, and pharmaceuticals. Bar coding is being used in some St. Luke's hospitals already and will be in use system-wide in the next couple of years. We're electronically documenting nursing procedures for routine treatment of all patients, and for standard treatment unique to each individual medical condition.

"Effectively applying IT in health care is a challenge of enormous complexity and cost," explains Dr. Gary Krouth, St. Luke's Health System Chief Medical Officer. "Assuring patient safety and quality care as well as the wise use of our finite financial resources requires that we move forward at a realistic pace that doesn't exceed our system's ability to adapt."

St. Luke's IT Steering Committee takes the lead managing a thoughtful approach to effectively automating health care information throughout the hospital system.

However, as is true for hospitals throughout the nation, St. Luke's is just one component in a loosely knit system that also includes physicians, their offices, laboratories, pharmacies, and insurers, to name a few.

Each of these entities is managed independent of the other, and has its own established ways of performing its respective patient care role. It's not enough that a hospital and its staff adopt a uniform approach to automating medical standards, definitions, procedures, and computer software. Each of these health care entities must adopt the necessary technology and adapt their behavior if all of the interrelated aspects of quality patient care are to be effectively coordinated through an integrated system.

"Each party involved must be convinced that new information technology and the corresponding set of new practices are going to meaningfully improve their portion of the patient treatment process," Krouth says. "IT that works in the real world improves patient care while enabling health care providers to maintain or improve their effectiveness and efficiency."

Implementing new technology in any industry ultimately means changing the way people perform their work. People in any endeavor are more likely to make the needed behavioral changes if they believe the new technology will enable them to achieve an outcome they desire with the same or less effort. Factoring this human reality into any IT change is essential to success for everyone affected.

For example, putting patient information in an online database has many potential benefits. However, busy doctors and nurses aren't likely to embrace an IT approach that requires time consuming activities such as getting to a computer that's not immediately at their fingertips, and logging in and out each time to get patient-related information.

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Hospitals and other providers too quick to implement a promising new IT software technology, can find themselves facing the costly prospect of having to uninstall it when it doesn't perform to expectations due to design or implementation flaws. And every failed IT solution tends to reduce confidence in the next one.

System-wide shared standards and integrated approaches are also essential for IT success.

"All health care is local," Krouth says. "Yet even at the local level, within the same community, we're a long way from a complete set of universal medical treatment standards, definitions, protocols, and IT software. Imagine the challenge trying to standardize these essential medical information elements on a national scale. Locally and nationally, there is no one oversight organization managing and coordinating all of the interrelated parts of a health care system."

Patients themselves are key to the success of any patient IT improvements. The accuracy of a patient's medical records begins with the completeness and accuracy of the information the patient provides. There is often a great deal of nuance that a physician or nurse must consider in fully understanding a patient's medical history, and making treatment decisions that are best for that patient.

For instance, if a patient forgets or chooses not to share certain aspects of his medical profile with his doctor, then the attending physician is working with an incomplete, inaccurate understanding of the patient. When a health care provider logs into an online set of patient medical records, he or she must have confidence that the patient information is accurate and complete.

These and many other factors must be considered and addressed from a practical standpoint in designing and implementing any patient IT solutions. The challenge in health care is made all the more complex given the uniqueness of each patient's particular medical profile. St. Luke's is committed to moving forward with IT in a way and at a pace we believe is ultimately in the best interests of patients and health care providers alike.

