Five Years Later:
A McKesson Perspective on the IOM Report Anniversary

This month marks the fifth anniversary of the release of the Institute of Medicine (IOM) report *To Err Is Human: Building a Safer Health System*. The report's controversial findings are all too familiar. More than 2 million serious medical errors occur annually, accounting for between 44,000 and 98,000 deaths. Medical errors are the fourth leading cause of death in the United States, ahead of pulmonary disease, diabetes, AIDS, pneumonia, accidents and automobiles. More than 7,000 deaths each year are attributable to adverse drug events, or ADEs. Subsequent IOM reports, *Crossing the Quality Chasm: A New Health System for the 21st Century* (2001) and *Patient Safety: Achieving a New Standard for Care* (2004), drove home the messages in the first report. These reports also called for a national health information infrastructure that captures patient safety information as a byproduct of care and uses this information to design increasingly safer delivery systems.

The government's plan to ensure that most Americans have an electronic health record (EHR) within 10 years puts muscle behind the IOM recommendations. Today, fewer than 5 percent of physicians have access to a complete EHR with structured data, decision support and drug interaction detection.[i] Not surprisingly, 71 percent of health information technology (IT) professionals surveyed in August 2004 by the Healthcare Information and Management Systems Society (HIMSS) said implementing the government's plan will take longer than the proposed 10 years.[ii]

Five years after the IOM's initial wake-up call, we pause to see how far our industry has come — and how far we've yet to go.

Clinical IT is a key ingredient to helping ensure patient safety.

It has become clear that EHRs and clinical information systems are critical to preventing medication errors. While progress to date may be slower than anyone anticipated, 88 percent of healthcare executives surveyed by Capgemini in October 2004 said they are implementing EHR systems or plan to do so within six months. They also said that clinical systems are "far and away the number one area of investment in health care."[iii] These clinical systems can be defined by the stage where they address medication errors:

- **Prescribing.** Computerized physician order entry (CPOE) systems help eliminate errors due to illegibility and present relevant, just-in-time information at the "critical moment" of decision making.
- **Transcribing.** Pharmacy information systems with advanced clinical screening help eliminate errors and streamline workflow.
- **Dispensing.** Automated robots that receive verified orders from the pharmacy system use bar-code technology to automate the dispensing and restocking of unit-dose medications. Additionally, automated cabinets communicate with the pharmacy system and prevent clinician access to non-prescribed medications.
- **Administering.** Mobile computers with scanners or hand-held wireless devices enable nurses to scan bar codes during medication administration to verify the "five rights" — right patient, right drug, right dose, right route and right time. They also automatically update the medication administration record (MAR) and integrate it with other clinical documentation for the entire care team to see.
- **Monitoring.** Expert systems constantly review real-time patient data and alert clinicians to abnormal laboratory values or other data so they can act quickly. In addition, Web portals grant clinicians secure, "anywhere, anytime" access to patient data for remote monitoring via the Internet.

Technology has improved significantly.

While integrated, closed-loop systems for medication safety are relatively new, healthcare organizations have been implementing clinical solutions such as order management, pharmacy and nursing documentation systems in bits and bytes for years. CPOE systems that initially stalled have become increasingly user friendly and today include robust decision support capabilities. Continued improvements in wireless network reliability, mobile devices, and high-speed and secure Internet access are likely to boost clinical IT adoption rates exponentially. Combined with advanced laboratory, radiology and other site-specific systems, this technology portends the arrival of the EHR and a fully digitized healthcare system.

But we aren't there yet. According to a 2003 patient safety survey by the Health Information and Management Systems Society, 99 percent of respondents believe that information technology could improve patient safety, and 80 percent cited bar-coded medication administration as the top technology for preventing medication errors. However, only 19 percent said they had already deployed bar-code technology for medication administration.[iv]

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Regulatory pressures may be the impetus for accelerated change. For several years the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) has been increasing the focus on medication safety and inching toward requiring positive patient identification at the bedside in its National Patient Safety Goals. The preliminary goals for 2005 proposed a goal of achieving bedside scanning by 2007, but the goal was removed from the final goals published this summer. In a May 2004 HIMSS survey, only 28 percent of healthcare organizations said they would be able to implement medication bar-code technology by 2007, the deadline in the originally proposed National Patient Safety Goals.[v]

While the final goals stopped short of a mandate, positive patient ID and other means of promoting medication safety across the continuum of care will be a strong focus for some time. In fact, two important issues related to medication safety remained in the final goals: the need to prevent errors involving "look-alike" and "sound-alike" medications, and the need to accurately and completely reconcile medications across the continuum of care.

Without a JCAHO mandate, the strongest driver for bar-code medication administration, though indirect, is the FDA rule that was finalized in February 2004. The rule requires bar codes on all inpatient medications, some over-the-counter drugs and vaccines, and all blood and blood products. While the rule is aimed at drug manufacturers, the intent is clearly directed at improving hospital patient safety.

As for CPOE, another highly promising technology for preventing medication errors according to the 2003 HIMSS Patient Safety Survey and experts such as the Leapfrog Group, estimates on adoption rates vary so widely that they are unreliable. Digging deeper than lack of capital funding and "physician resistance," the primary reason for slower adoption appears to come from the fact that it's harder to compel non-employees to change habits than employees, which may be why teaching hospitals often have higher CPOE adoption rates than community hospitals. Organizations that have successfully introduced clinical decision support/CPOE have tended to introduce technology incrementally. These groups began with solutions such as Web-based access to discrete patient information or diagnostic images that have an immediate effect on improving the care process and that make physicians' jobs easier. Other important strategies for success include: starting with a small group, such as hospitalists, who will then champion the technology among their peers; or starting in the outpatient setting, where physicians quickly see direct benefits in their own practices.

Organizations with proven results have embraced a culture of patient safety and buttressed it with technology.

With scant national data available, how can we accurately measure how much we've improved care and whether patients are safer? While national statistics show that bar-code technology adoption is extremely low outside of the pharmacy, within McKesson's customer base adoption is much higher, and many of these customers have documented significant error reduction as a result.

At Mary Lanning Hospital in Hastings, Neb., the tragic death of a patient who was mistakenly given insulin triggered significant changes. A new process for medication administration was developed and point-of-care, bar-code scanning technology was deployed along with a pharmacy information system to further reduce the risk of medication errors. The provider created a culture of safety by overhauling its medication safety program, increased nursing efficiency, and reduced near-miss events related to the wrong drug and wrong patients by 35 percent. In addition, Mary Lanning earned significant national recognition for its patient safety initiatives as one of four finalists in the 2004 American Hospital Association Quest for Quality Prize℠.

Presbyterian Healthcare Services in Albuquerque, N.M., has addressed medication safety by investing in pharmacy robotics, automated cabinets and bar-code medication administration. The hospital was able to make staffing changes in the pharmacy, where fewer technicians were needed for routine dispensing and restocking tasks now handled by the robot. Pharmacists were redeployed more productively, such as on critical units to assist with clinical decision-making and monitoring. A direct-observation study showed that the technology and process changes reduced errors by 77.9 percent and greatly reduced uncharted medications, improving charge capture.

Finally, Methodist Medical Center in Peoria, Ill., has reduced medication errors in the inpatient setting by 50 percent through the use of bar-code scanning technology. In addition, Methodist is creating an EHR by using McKesson's physician portal and ambulatory care workflow solution in its 29 affiliated clinics and physician practices. At last count, 87 physicians generate more than 24,224 electronic prescriptions a month. Patient information is available across multiple settings, improving decision-making and leaving less room for error. Methodist also reduced transcription turnaround from three days to less than one day.

We're proud to partner with you…

Long before the first IOM report landed on desks in 1999, McKesson pioneered breakthroughs in medication safety, including bar-code scanning at the point of care, pharmacy information systems with advanced screening for drug interactions, robotic drug dispensing, and computerized medication administration records. We're the only single-source provider of integrated software, automation, packaging and distribution solutions that help providers reduce medication errors at every step where they can occur: prescribing, transcribing, dispensing, administering and monitoring.

Today, McKesson solutions are used to scan 36 million medications at the bedside every year. Our medication administration solutions prevent an estimated 29,000 medication errors and issue almost 300,000 alerts to hospital staff weekly. Some 300 of our pharmacy robots dispense 325 million unit-dose medications each year, virtually error-free. More than 10,000 automated dispensing cabinets are installed in more than 500 hospitals.

But we recognize that developing a comprehensive medication safety strategy is complex and not an overnight process. That's why we've developed innovative solutions to help get you started. With the McKesson QuickStart Program, we bundled the technology, services and solutions your hospital needs to unit-dose package, bar-code, scan and verify all patient medications. In six months, from kick-off to go-live, your clinicians will have the tools they need to ensure that the right patient gets the right medication in the right dose via the right route at the right time — every time.

We're busy advocating for you, too. McKesson representatives participate in the E-Health Initiative (EHI), a nonprofit group focused on promoting quality, safety and efficiency through electronic medical records and standards; and the National Alliance for Health Information Technology (NAHIT), a group of leaders from all healthcare sectors working to advance the adoption and implementation of healthcare IT to achieve measurable improvements in patient safety, quality and efficiency. McKesson's patient safety officer, Mary Beth Navarra, is a member of both the HIMSS and NAHIT bar-code task forces and has served on the team of industry experts that provided testimony to the FDA in preparation for the new mandate. And since 2002 McKesson and the McKesson Foundation have underwritten the American Hospital Association's Quest for Quality Prize, which honors leadership and innovation in patient care quality, safety and commitment.

Clearly progress has been made, but how do we accelerate the pace?

Implementing clinical information systems is more complex than experts foresaw. One lesson learned in the 1990s was that you can't just plug it in and flip the switch. Unlike business solutions, there is zero tolerance for downtime in the clinical setting. By every measure – ease of use, support, reliability and redundancy – the bar is much higher for healthcare IT. If the system goes down, patient care can be at risk.

And it's not all about technology. Almost every report on patient safety says that the key to a successful strategy is creating an open, non-punitive culture of safety through systemic process change enabled by IT, not the other way around. Cultural change is no cinch, however. Keeping safety initiatives energized involves strong leadership from the top down. This means educating the board on key issues to ensure patient safety initiatives are included in strategic plans and adequately funded. It also means continued attention from senior executives, perhaps through frequent safety walkarounds or personal calls to people involved in serious errors. At the staff level, it means continually monitoring errors and refining processes; offering visual reminders throughout the organization; and embedding safety-related information in policy and procedure manuals, new-employee orientations, job descriptions, annual reviews and training.

Regulatory pressures may be the impetus for accelerated change.

So, where do you start? First, complete a thorough evaluation of where you are in your patient safety initiative and where you want to go. Do you only have a vague idea of how many ADEs and near misses your organization had last month, or can you report them by unit to the board? Next, call on the experience that your vendor partners have with multiple providers to help you decide where to start — perhaps with bar-code medication administration, building common order sets, standardizing treatment protocols, automating your pharmacy or introducing e-prescribing in physician practices. Third, set goals that align with where you are and where you want to go. Fourth, develop an incremental plan customized for your organization and stick to it, without panicking when new mandates and guidelines present conflicting priorities. If you've already taken these steps, congratulations, and by all means keep going.

It seems that every day another survey, study or report about patient safety or medication errors captures national attention. It would be all too easy to dismiss the problem as a media darling whose 15 minutes of fame are almost up. But the more data we collect and the more we know, the problem is real. Let's work together to eliminate it.

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[i] Reece, Richard L., M.D., "The Four Cs of Physician EMR Adoption," HealthLeaders News, May 19, 2004.

[ii] iHealthBeat, Health Care Advisory Board, September 29, 2004.

[iii] iHealthBeat, Health Care Advisory Board, October 28, 2004.

[iv] Pederson, C., et al., "ASHP National Survey of Pharmacy Practice in Hospital Settings: Dispensing and Administration – 2002," February 7, 2003, http://ashp.org/practicemanager/ASHPNtnlSurvey2002.pdf.

[v] iHealthBeat, Health Care Advisory Board, June 30, 2004.

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