

# Compelling features of a safe medication-use system

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In 1999, the Institute of Medicine (IOM) published the incisive report "To Err Is Human: Building a Safer Health System."<sup>1</sup> This critique was followed by two other IOM reports: "Crossing the Quality Chasm: A New Health System for the 21st Century" in 2001<sup>2</sup> and "Patient Safety: Achieving a New Standard for Care" in 2004.<sup>3</sup> Between the latter reports, Berwick,<sup>4</sup> of the National Patient Safety Foundation, authored an inspiring book, *Escape Fire: Designs for the Future of Health Care*.

However, a 2004 national survey of consumers' experiences with patient safety revealed that, despite five years of focused attention on health safety, the American public did not feel safer.<sup>5</sup> Nevertheless, in the May 18, 2005, issue of the *Journal of the American Medical Association (JAMA)*, Leape and Berwick<sup>6</sup> observed that "the IOM report truly 'changed the conversation' to a focus on changing systems, stimulated a broad array of stakeholders to engage in patient safety, and motivated hospitals to adopt new safe practices."

This article outlines the scope of the patient-safety problem, assesses the progress made in patient safety, and nominates those systems and management practices that portend the greatest likelihood of moving medication injury incidents toward the goal of zero.

**Scope of the problem.** Medication errors. In some industries, a 3–5% er-

ror rate is acceptable, but not when people's lives are at stake. The public expects and demands nothing less than perfection when their medications are involved. Is this posture unrealistic? Yes. Is it fair? No. However, high expectations reflect reality.

Research suggests that nearly one of every five medication doses in American hospitals may be administered in error. In a study of long-term-care centers and small hospitals, investigators noted an error rate of 12.2%.<sup>7</sup> Other studies have indicated that 1.7–3.9% of patients visiting an emergency room do so because of a drug misadventure, yet 66% of these events are preventable.<sup>8,9</sup> Another study found that 3.7% of hospitalizations among patients age 65 years or older are the result of adverse drug events (ADEs).<sup>10</sup>

A study of 35 U.K. community pharmacies revealed that for every 10,000 items dispensed, there are about 22 near misses and 4 dispensing errors.<sup>11</sup> Because these errors were not independently observed, the incidence reported above is likely to be conservative, but it supports the hypothesis that dispensing errors

occur less often in community pharmacies than in hospitals.

These percentages may seem high to many pharmacists, but it is important to note that medication-error rates depend on how they are measured and what they include. For example, if the error rate is based on passive reporting (like incident reports), it will be deceptively low compared with more active methods (e.g., observation).<sup>12</sup> The error rates listed above were usually determined by the errors documented in patients' records. If incorrect medication administration time is considered an error, the error rate will be much higher than if this variable is excluded from error rate calculations.

**Medication-error outcomes.** Although patient death attributable to an ADE is the most serious consequence of medication use, the number of people who die annually from the legitimate use of medications in the United States is unknown. This uncertainty lies in the difficulty of properly assessing causality.<sup>13</sup> Estimates of death from the legitimate use of medications range from 7,000 to 140,000 yearly. Further, many more patients suffer from drug-related morbidity, where the worst outcomes are being permanently disabled or undergoing a life-threatening experience.<sup>14,15</sup>

Medication errors also create a lack of patient trust. From the patient's perspective, a medication er-

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ror becomes a double insult. Not only do we not help patients, as we have promised, but we do not protect them from harm.

Serious medication errors also manifest in added costs. The cost of treating ADEs in a hospital averages \$3244–\$5857 per case.<sup>16,17</sup> Most of this additional cost arises from an extended hospital stay of one or two days. The estimated cost of an ADE in a nursing home is \$1.33 in health care resources for every \$1 spent on drugs.<sup>18</sup> Thus, it may be more expensive to treat an ADE than it is to treat a typical nursing home patient.

The annual cost to society of ADEs occurring in the ambulatory care setting alone may be at least \$76.6 billion.<sup>19</sup> This figure does not include increases in hospital insurance rates when major medication errors occur and the cost of defending, settling, and paying for unfavorable verdicts in lawsuits for medication-error-related injuries. One investigator discovered that judgments and settlements for litigation involving a medication-related death between the mid-1970s and the mid-1990s averaged \$1.1 million,<sup>20</sup> \$4.3 million for a medication-related permanent disability,<sup>14</sup> and \$1.2 million for a medication-related threat to life.<sup>15</sup> Since these investigations were conducted some 10 years ago, current figures are undoubtedly much larger.

Another outcome associated with harmful medication errors is the embarrassment they cause our profession. Of all the health professions, pharmacy should be leading the way and creating changes that produce a safer medication-use environment. Many pharmacists are probably working toward this goal, but is the profession serving as the leadership catalyst? If this role becomes apparent to the public, it would help support claims that pharmacy represents a bona fide clinical profession.

**Lack of improvement in medication safety.** There has been little improvement in the medication-use

system since 1999, primarily due to a deeply flawed health care system that suffers from gross inequity in access to care, ever-rising costs, the persistent problem of compromised quality, and injury resulting from errors. The American system of health care also suffers from haphazard incrementalism, applying numerous bandages to the system when major surgery should be the therapy of choice. When resources are deployed via the haphazard incrementalism model, net social gains can be elusive.

An improved health care system is one that provides universal access to care and is consumer driven and patient centered rather than provider dominated. In order to improve medication safety, we need (1) a national, coordinated health information network based on a longitudinal electronic medical record (EMR) and central storage of health records, (2) a national center for patient safety reporting and research (called for by IOM) patterned after the National Safety Transportation Board, (3) satisfactory measurements of global safety to assess improvement, (4) incentives for hospitals to improve safety, and (5) more loans for health care students to meet the awaiting “perfect storm” created by the large number of people who are about to become senior citizens.

A glimmer of hope may exist for the EMR and central storage of health data. On June 6, 2005, the U.S. Department of Health and Human Services announced a plan to develop a national health information network that is strongly supported by the White House. While one might anticipate that this effort would decrease the \$1.8 trillion health care industry’s dependency on paper records, this government initiative seems independent of other needed changes. Thus, current health policy may be constructing yet another example of haphazard incrementalism.

The central question is, should health professionals wait to improve

the medication-use system until the health system is redesigned correctly, or do we improve the medication-use system now and hope that it will precipitate improvement in the health system? There is little evidence that major improvements in the health system are forthcoming. Yet, improving the medication-use system will not be easy because the system is too complex; some say it is broken.<sup>21</sup>

**Impediments to improved medication safety.** Major impediments to improved medication safety include some hospital executives, some physicians, the federal government, the pharmaceutical industry, and some pharmacists.

*Hospital executives.* Many hospital executives do not believe that patient safety problems exist. Others do not think it is possible to have an environment free of injury from medical errors, but most resist the cost of making improvements. Granted, it is often difficult to juggle priorities and decide how resources should be divided in a hospital. Although the implementation of a computerized physician-order-entry (CPOE) system with decision support and a closed-loop, point-of-care medication system is costly, it is no more expensive than capital spending in other hospital areas, such as radiology, cardiology, and laboratories.

Although a case for improving medication safety may exist from the social perspective, patient safety issues cannot and should not be determined via the traditional cost-effectiveness model.<sup>22</sup> Though many patient safety initiatives do not generate provider revenue, they serve as a vital foundation for reducing costs associated with extra care, potential litigation, and rising insurance premiums. Institutional return on investment should not be based on finance or strategy but on the “right thing to do.”

*Physicians.* Most physicians are sitting on the sidelines on the issue of patient safety. A few months after the publication of the 1999 IOM report

on patient safety,<sup>1</sup> a blistering letter to the editor was published in *JAMA*, claiming that the extent of morbidity and mortality from medical errors was exaggerated in the IOM report.<sup>23</sup> A later report stated that only 5% of physicians view medical errors as one of the nation's most important health care issues.<sup>24</sup> The more important issue for doctors is tort reform—reducing the cost of errors they make rather than addressing causal factors that lead to physician error. Most doctors believe there are only two approaches to effectively reduce errors: (1) require hospitals to develop systems to avoid medical errors and (2) employ more nurses. These nostrums, though helpful, seem much too simple for such a complex problem.

**Federal government.** The federal government has been active in the patient safety arena since the 1999 IOM report on patient safety<sup>1</sup> but probably not to the extent the IOM envisioned. The Agency for Healthcare Research and Quality (AHRQ) established a center for quality and safety, and Congress appropriated money to help with the safety effort. Unfortunately, AHRQ's center for quality and safety operates more as a facilitator for exchanging medical safety information than an administrative unit for reporting and researching ADEs. Further, Congress just passed legislation to protect professionals who report medical errors. It remains to be seen whether this regulatory fix is enough to keep the reporting of medical errors from continuing to be submerged.

**Pharmaceutical industry.** Drug companies have not furthered patient safety efforts. They opposed the bar coding of all unit-of-use medications, saying it would cost too much. However, an investigation conducted by the National Coordinating Council for Medication Error Reporting and Prevention (NCCMERP) revealed that having to retool and provide bar coding for unit-of-use medications will

cost the industry less than one cent per dose of medication. The pharmaceutical companies are also fighting the United States Pharmacopeia's (USP's) effort to require unique imprint codes on oral medications. Finally, the industry has its own internal safety issues associated with the production, labeling, distribution, and promotion of pharmaceutical preparations.

**Pharmacists.** During a visit to a large, widely respected community hospital a few years ago, the senior author of this commentary met with the director of pharmacy and the director of risk management to discuss medication errors. The risk manager indicated that the hospital was involved in three major lawsuits related to medication errors over the preceding five years. On hearing this response, the director of pharmacy howled, "Why don't I know about this?" The risk manager answered, "You're not supposed to know about it. That information is only shared with the hospital attorney and the president of the hospital!"

Later, the risk manager revealed that all medication-related lawsuits were settled out of court, and settlements ranged from a few thousand dollars to the high six figures. How many other directors of pharmacy, patient care, and pharmacy and therapeutics (P&T) committees are unaware of medication-related lawsuits within their facility?

When asked about patient safety, some pharmacists indicate that they "have many other things to worry about." What could be more important than the safety of patients? Is it possible that institutions are more concerned with cost controls than patient safety? The prevention of ADEs reduces social costs attributable to medication injury while lowering insurance premiums.

Although the pharmacy profession contends that "helping patients make the best use of medications" represents a primary mission of prac-

tice, it seems essential to recall that the first duty of health professionals is to do no harm. Ask any state board of pharmacy member about the primary duty of the pharmacist, and the likely reply is "protecting the patient from harm."

**Discerning evidence-based practices.** USP's Expert Committee on Safe Medication Use has been working to identify what it considers evidence-based safe medication practices. The foundation of this work consists of well-designed, controlled studies that show a consistent and significant benefit. So far, the committee has identified six evidence-based safe medication practices: (1) unit dose drug distribution, (2) protocols for high-risk drugs, (3) CPOE systems with decision support, (4) pharmacists in patient care areas and clinical rounds, (5) bar coding of unit-of-use medications, and (6) counseling of patients about their medications.

**Unit dose drug distribution.** It should be no surprise that unit dose drug distribution is an evidence-based system. Since its first application in 1970, many studies have shown that these systems are three times more effective than older drug distribution systems in preventing medication errors. However, unbelievable as it may seem, some hospitals have not adopted unit dose drug distribution.

**Protocols for high-risk drugs.** Published studies of ADEs have consistently identified certain classes of drugs as serious threats to patient safety.<sup>25</sup> High-risk or high-alert medications include anticoagulants, i.v. opioid analgesics, concentrated electrolyte solutions, insulin, and chemotherapeutic agents. The use of protocols for the storage, prescription, distribution, and use of high-risk drugs reflects an evidence-based safe medication practice.

**CPOE systems with decision support.** Prescribing and transcribing accuracy are improved with the use of

CPOE systems.<sup>26</sup> Eleven controlled studies have revealed that CPOE with decision support decreases serious and preventable errors by 55–81% and reduces ADEs by 17%.<sup>6,27</sup> These data are compelling and cannot be ignored. Yet, only 4.2% of hospitals have CPOE systems.<sup>28</sup>

*Pharmacists in patient care areas and clinical rounds.* Many studies, some as early as 1987, have shown that when pharmacists work in conjunction with other health care providers, the number of preventable ADEs is reduced.<sup>29–33</sup> Pharmacist participation in hospital rounds in an intensive care unit reduced preventable ADEs by 66–78%.<sup>6,32</sup> In another study, the presence of patient care pharmacists in the inpatient, outpatient, and nursing home settings improved patient outcomes by 44.6%, 34.1%, and 33.3%, respectively.<sup>33</sup> Despite this evidence, most hospital pharmacists still spend most of their time in the pharmacy department rather than on patient care units.

*Bar coding of unit-of-use medications.* There are at least seven controlled studies showing improved effectiveness with bar coding medication.<sup>34</sup> Not only does bar coding medications improve the accuracy of dispensing (by fivefold), but concomitant gains in labor efficiency can be anticipated.<sup>35</sup>

*Counseling of patients about their medications.* In one study, over an 18-month period, 323 medication errors were discovered.<sup>36</sup> Of these errors, pharmacists who were counseling ambulatory care patients caught 89% of dispensing errors before the patient left the pharmacy. Despite this evidence and a legal requirement that pharmacists offer to counsel each patient personally about his or her medications, most pharmacists are not performing this important education and safety function.

**Other methods for reducing medication errors.** Five additional practices hold promise for reducing medication errors. However, nation-

al investments in research to document this potential are required.

*Electronic prescribing.* The problems and errors associated with professional handwriting are well-known and should be replaced with electronic prescribing and decision support, like CPOE.<sup>26</sup> The challenges associated with electronic prescribing include convincing physicians to use it and determining who will pay for the equipment and software. In 2003, small groups of doctors in the Boston area started using and evaluating electronic prescribing.<sup>37</sup> They found that electronic prescribing satisfied patients, reduced the number of mistakes made, and decreased dispensing time in the pharmacy. The requirements for electronic prescribing in the new Medicare Part D benefit may soon make writing prescriptions by hand obsolete.

*Automated dispensing machines.* Automated dispensing machines (ADMs) may also reduce medication errors.<sup>34</sup> Although ADMs can improve efficiency, they are less effective in reducing serious ADEs. Errors made when removing medications from ADMs using an override function are more likely when all medications are available for removal, versus when only emergency, preprocedure, and i.v. pain medications are available for override.

*Adding medical indications to prescriptions.* There are numerous look-alike and sound-alike medications available on the market. Also, many drugs have more than one indication. For example, there are at least four approved indications for propranolol. In most cases, the pharmacist who dispenses the medication is not aware of the exact indication for which the drug has been prescribed unless he or she asks the patient or the caregiver. If the medical indication appeared in the directions for use or somewhere on the prescription, the pharmacist would have a better chance of dispensing the correct medication, avoiding unsafe

combinations of drugs, and offering more information to educate and counsel the patient.

*Smart i.v. infusion systems.* Infusion devices with decision-support software have the potential to ensure that the right infusion rate and duration are used. While these new devices have potential, no controlled study has identified a measurable impact of these systems on serious medication errors.

*Point-of-administration systems.* Point-of-administration systems were developed to ensure that the correct dose of the correct medication is administered by the correct route at the correct time, thus closing the loop of the medication-use system. Verification of these critical steps is achieved by scanning a bar-coded patient wristband, the bar-coded unit-of-use medication, and the nurse's bar-coded identification. These factors are checked in real time with the computerized medication-use system before the medication is administered. Many pharmacists believe that these systems will improve medication safety even more than CPOE. However, faulty design can yield suboptimal results.<sup>34,38</sup>

**Operating a safe medication-use system.** Some practitioners believe that medication safety is mostly a system problem. However, data from Medmarx, USP's anonymous medication-error-reporting system for hospitals, indicate that people problems are at least as significant as system problems. Further, some health care workers make more medication errors than others. Moreover, some practitioners violate medication-use policy and procedures more than other practitioners, and some supervisors are not as vigilant as others. Thus, active management of the medication-use system becomes a critical element for any system. The following features seem integral to operating a safe medication-use system.

*Safety.* There must be a strong commitment to patient safety in ev-

ery health care system. This commitment must come from the top executives of the organization, the directors of pharmacy, and everyone in-between. Strong pharmacy leadership and management skills are also important and include (1) demonstrating ethical conduct in all activities related to pharmacy practice, (2) taking personal responsibility for attaining excellence in one's own ability to provide leadership for pharmacy, (3) communicating effectively when speaking and writing, (4) managing change effectively, and (5) effectively attending to customer needs.<sup>39</sup> These skills help move a patient-safety program forward.

Managerial principles stress the difference between being a leader and being a manager.<sup>40</sup> Managers do things right; leaders do the right things. A decision needs to be made about who will lead and who will manage the patient-safety effort at each health care setting. Preparing for change and achieving improved safety are processes that need nurturing. This nurturing is the essential glue that keeps everything together.

*Strategic plan for advancing patient safety.* A strategic institutional plan for patient safety starts with a vision and is zero based (i.e., developed from scratch).<sup>41</sup> The plan needs input from all stakeholders, including patients and pharmacy technicians whose important voices are often bypassed when constructing such plans. Someone outside the organization should facilitate the brainstorming and help validate the many decisions required to ensure operational success.

*Clear and obtainable consensus goals.* There are too many instances where a wonderful planning conference occurs and lofty goals are created to make improvements, but these planning documents are put away on shelves where they atrophy and succumb to terminal illness. Hence, enthusiasm for the plan wanes. The goals to improve patient safety

must be clear, obtainable, visible, and active.

*Medication safety officer.* It is imperative to have someone accountable for carrying out the strategic plan for safety. This should be the medication safety officer (MSO). Many feel that the MSO should be a pharmacist who is empowered and supported by the highest ranking person in the hospital and is a standing member of the P&T committee.

*Baseline measurement of medication errors.* A baseline measurement of medication errors and their outcomes is required before establishing a safe medication-use system. The rate of medication errors should be assessed in all areas, including ambulatory care, the emergency room, inpatient settings, and outpatient dispensing. There are passive and active methods of measuring errors. Active observation methods are the most accurate and not too expensive to maintain based on the quality of information obtained.<sup>12</sup> Because measuring medication errors is fraught with complexity and bias, it is critical to use rigorous and consistent methods of measurement. A denominator must be established (e.g., net doses dispensed, patient days, discharges, patient visits). Yet interpretative hazards lurk in comparing medication error rates among even homogeneous facilities.<sup>42</sup>

*Assessing progress.* Progress toward achieving goals necessitates routine assessment. Our social goal should be to minimize safety problems, and results should be shared with the P&T committee and perhaps the patient care committee at least quarterly. However, while contemporary errors will be better controlled, new and old sources of error may surface. New technology can also produce technology errors that need capturing and assessment.<sup>43</sup>

*Considering differences among medications, patients, and errors.* All medications are not the same. For example, there are more errors re-

ported with high-alert drugs, and certain drugs have the potential to cause more harm (e.g., agents with narrow therapeutic range). Therefore, medication errors should be stratified by patient outcome as recommended by the NCCMERP.<sup>44</sup>

One medication safety researcher discovered that 10 medications account for more than 60% of all preventable ADEs.<sup>45</sup> USP data suggest that insulin, morphine, heparin, potassium chloride, and warfarin, among other drugs, should be followed closely.<sup>46</sup> Also, some patients (the very young, the very old, and those with compromised organ function) are more vulnerable to the harmful effects of medication.<sup>47</sup> Tracking the outcomes of medication errors is as important as tracking what medication was involved, where the error occurred, and who was affected. The goal should be to reduce medication-related injury, not to reduce medication errors to zero.

*Reporting medication errors to a national database.* Reporting all medication errors to a national database seems essential if our health care delivery system is to accumulate the critical mass of data needed to track significant trends and propose realistic solutions for remedial action. At this juncture, USP's Medmarx database seems the most logical national repository for reports of both medication errors and ADEs. It offers respondents anonymity and permits facilities to track trends in their hospital and in similar institutions.

*Failure mode and effects analysis.* Failure mode and effects analysis (FMEA) allows an organization to examine each step of its medication-use system and identify weaknesses and measures to overcome these weaknesses.<sup>48</sup> FMEA is a preventive process that every health care organization should undertake at least once a year.<sup>49,50</sup> A well-designed study using FMEA to improve the safety of i.v. drug administration was recently published.<sup>51</sup>

Tools for assessing weaknesses in the medication-use system, such as those from the American Society of Consultant Pharmacists,<sup>52</sup> and the Institute for Safe Medication Practices, are available. FMEA should be used to make the medication-use system less complex, more user-friendly, and closed looped.

*Questioning assumptions about the medication-use system.* Human nature seems inclined to take problems for granted, assuming that not much will change. Such passive acceptance hinders improvement. A graduate student recently improved the bottle and label for dispensing prescription medication for Target pharmacies.<sup>53</sup> This new prescription bottle is thinner, flatter, reversed (the cap is on the bottom), plastic, and amber red. The idea was to save space in existing medicine cabinets, provide a better surface for medication labels, and make pill-taking instructions easier to read. A color-coded collar attached to the neck of the container identifies the family member for whom the medication is prescribed. Why did it take so long for this improvement? Possibly because many did not believe change could occur.

Many practitioners overlook the ongoing problem of drug-name confusion, and some thought that the problem might never be solved. However, a software program is now available that automatically flags look-alike and sound-alike drug names.<sup>54</sup> This example, as well as the redesigned prescription bottle, indicates that newer and better ways to improve drug safety may exist if we seek them.

*Providing adequate resources.* When hospitals upgrade information systems based on price rather than their ability to achieve socially critical functions (e.g., enhancing patient safety), many problems are likely to persist as we celebrate the new technology. In addition to providing funds to launch new safety initiatives, resources that fine-tune cur-

rent methods to improve the safe use of medications must be continually available.

**Monitoring for drug-induced harm.** Passively waiting for reports of medication errors does not help current patients, and these reports present a deceptively inaccurate rate of drug misadventures. There are more proactive ways to tell if a patient has suffered an ADE, such as trigger alerts that signal when potential ADEs are about to occur or have occurred.<sup>55,56</sup>

Automated ADE monitors search for keywords or phrases in various parts of the patient's medical record and for drug therapy that might indicate treatment for an ADE. This specific detection method finds significantly more ADEs, including medication errors, and is far better than relying on incident reports.<sup>57</sup> At one hospital, follow-up on ADE trigger alerts allowed the facility to detect weaknesses in its medication-use system and reduce the number of ADEs for every 1000 doses from 2.0 to 0.5 in two years.<sup>58</sup> One study found that clinicians value medication safety alerts and welcome small group training to control the problem of ADEs.<sup>59</sup>

*Addressing personnel limitations.* More attention should be given to why workers make mistakes and what can be done to lessen the chance of an error. Medication errors are sometimes due to the way behavior is managed in the workplace. Corrective action is often taken against a nurse, pharmacist, or other health professional, yet the most common cause of errors is found in supervision.<sup>60</sup>

What the practitioner does is usually the result of supervisory acts of commission or omission, yet the common remedial approach rarely identifies the error's etiology. The best ways to manage behavior in the health care environment are to (1) focus on the solution rather than the problem, (2) train workers to fluency, (3) pay attention to the details of be-

havior, and (4) use positive reinforcement for procedure compliance.<sup>60</sup>

*Creating a nonpunitive reporting system.* The culture for change and improvement should be educational and team oriented rather than punitive. Blaming and severely punishing health care practitioners for making errors put their job security and professional licenses at risk and make the reporting of errors a liability rather than an opportunity for improvement. Under these conditions, errors will rarely be reported. Health care practitioners know they should "first do no harm." They suffer and punish themselves severely when they make an error. Therefore, the culture governing medication safety should use vigilance and education to elicit continual improvement. Of course, anyone deliberately violating a policy or procedure (where an error and harm occur) should suffer appropriate consequences. Fortunately, such violations rarely occur.

*Working in teams.* Health care professionals need to work in teams, where everyone from the physician to the orderly feels a personal responsibility for safety. Success may be defined when any team member can stop the care process if he or she thinks the patient is at risk and do so without penalty or humiliation should the alert prove to be false.

**Lessons learned and actions needed.** Many lessons have been learned about medication errors and what actions are needed to prevent them.<sup>61</sup> Nevertheless, a national priority for patient safety has yet to reach a tipping point.<sup>62</sup> This shortcoming should not slow progress. No matter the size or nature of the health facility served, patient safety should be the first priority. If patient safety represents a primary goal in the provision of medical services, health professionals should be relentless in pursuing it, not just to pass safety standards set by the Joint Commission on Accreditation of Health Organizations, but because professional

duty indicates that it is the right thing to do.<sup>63</sup>

**Challenge for health professionals.** Improving medication safety merits close attention as our most important professional responsibility. In undertaking this difficult journey, attainment of “perfect safety” seems beyond the realm of human achievement. However, all who labor in this industry should strive to arrive at the destination called “no medication-related injury.” In facing this problem, hospitals and health professionals are confronted by three basic choices: (1) conduct business as usual, (2) allow patient safety issues to drift among alternative managerial objectives, or (3) make patient safety the top priority. Leaders in the health field who seem unsure of which of the three options to follow might locate sound advice by consulting their patients.

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