

Stopping Errors At Their Source

The challenge of identifying patient-safety risks in individual primary-care practices has been compared by many safety experts to peeling back an onion: layer upon layer of actions, routines and processes must be analyzed and unfurled to reach the heart of a problem and understand its root cause.

Medical mistakes are currently viewed as the culmination of one or more breakdowns in a poorly designed or haphazard process within the practice. Patient-safety advocates emphasize the need to move away from blaming individuals for medical errors to looking deeply into the administrative and clinical systems that impact care—from the process by which medications are ordered and prescribed, to the way that test results are tracked, phone messages are taken and how staff communicate with one another and with patients.

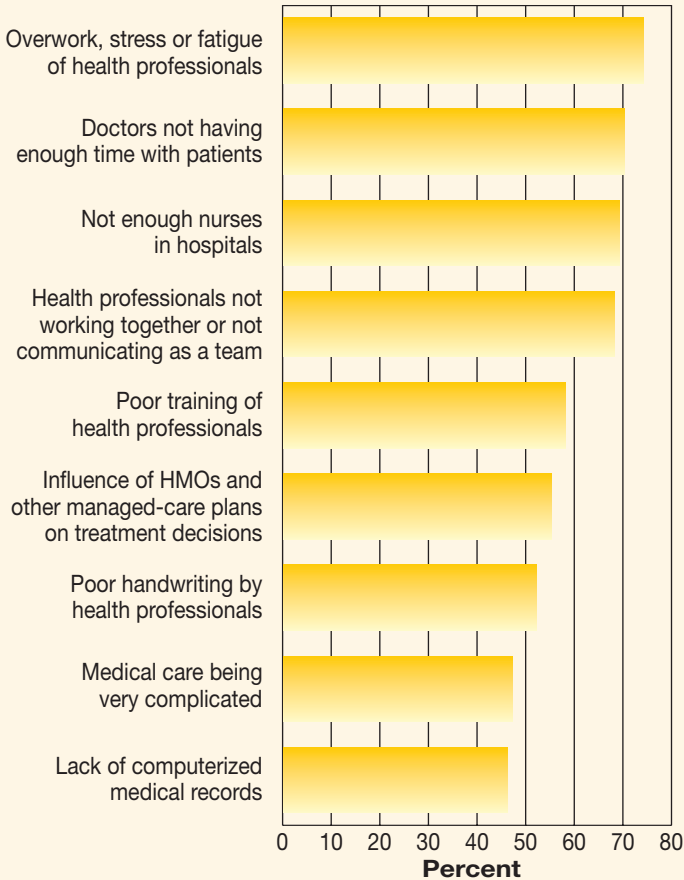
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Practices planning their initial steps in reducing medical errors should start with an internal examination of current clinical and administrative processes to establish a baseline understanding of where the pitfalls lie and how to eliminate them, safety experts say. Diagnosing safety risks requires insight into how existing systems in the practice work and where opportunities for breakdowns exist. The best place to start the analysis, safety experts advise, is with the staff.

“Sit down and have a conversation among members of the practice around the question, ‘Is this a safe place to provide care, and for patients to receive care, and how do we know that?’” says

Perceived Causes of Preventable Medical Errors

Percent of consumers who say each is a "very important" cause of medical errors



Source: Kaiser Family Foundation / Agency for Healthcare Research and Quality / Harvard School of Public Health. National Survey on Consumers' Experiences with Patient Safety and Quality Information, November 2004 (Conducted July 7 - September 5, 2004).

Defining Terms

- **Adverse event**—an injury or death resulting from medical management, not the underlying condition of the patient.
- **Medical error**—the failure of a planned action to be completed as intended, or use of the wrong plan to achieve an aim.
- **Preventable adverse event**—an adverse effect attributable to error.
- **Patient safety**—freedom from accidental injury.
- **Near miss**—a medical error that causes no harm.

Source: National Academy for State Health Policy.

Julie Morath, chief operating officer of the Children’s Hospitals and Clinics in Minneapolis/St. Paul, and a board member of the National Patient Safety Foundation in McLean, Va. “In that conversation what usually surfaces is people’s sense of where the gaps are. Once they identify or diagnose the gap that’s of concern to them, you can start working on very simple improvements. The main thing is to have a willingness to take a very careful look.”

Dr. Robert Wachter, chief of the medical service at the University of California San Francisco Medical Center and author of *Internal Bleeding: The Truth Behind America’s Terrifying Epidemic of Medical Mistakes* (Rugged Land, 2004), agrees that the starting point should be tapping the insights and experience of practice staff. He suggests setting aside half a day for bringing together physicians, nurses, clerks and “everyone in the [practice] loop” to ask the question, “What doesn’t work around here?”

A facilitator might be helpful to guide the discussion, Dr. Wachter says, but with or without that guidance, the primary focus should be to identify where the potential for harm exists. Bluntly stated, physicians need to ask, “If we were going to hurt or kill someone by an error, what would it be,” Dr. Wachter says. “If we found out a patient went to the hospital [because of an error] what would it be?” The exercise will give physicians an opportunity “to learn about processes that are haphazard,” in part because they’re not thought of as processes, he adds.

Practice staffs are usually “so busy that no one takes the time to think about [routines] as true processes,” but until they do, and

identify those that pose a hazard, “it’s hard to know what the main problems are,” he says.

Practices that take the time to go through this collective assessment typically “have a tremendous number of epiphanies” related to safety risks and processes that are prone to error, Dr. Wachter says. Discussions may reveal problems in a wide range of areas, from the way drugs are prescribed and monitored for side effects, to what happens when a patient is admitted to the hospital, he adds. Processes that need only six steps may now be taking 20, building into the system unnecessary complexity and opportunity for error, Dr. Wachter says.

A recent study suggests that doctors should not wait for staff to volunteer their observations regarding safety risks and errors, as health professionals frequently witness these problems without discussing them. The report, released in late January by the American Association of Critical Care Nurses (AACN) and VitalSmarts, an international company that provides leadership training and consulting services, found that fewer than 10 percent of hospital medical staff who witness errors and behaviors that are likely to lead to errors confront the problem directly. Based on dozens of focus groups, interviews, workplace observations and a survey of more than 1,700 nurses, physicians, clinical-care staff and hospital administrators, the study found that:

Health professionals frequently witness safety risks and errors without discussing them, according to a report by the American Association of Critical Care Nurses (AACN) and VitalSmarts. The study found that fewer than 10 percent of hospital medical staff who witness errors and behaviors that are likely to lead to errors confront the problem directly.

- 84 percent of physicians and 62 percent of nurses and other clinical-care providers report seeing coworkers taking shortcuts that could be dangerous to patients.

- 88 percent of physicians and 48 percent of nurses and other providers say that they work with people who demonstrate poor clinical judgment.

- 81 percent of doctors and 53 percent of nurses and other clinical-care providers have concerns about the competency of a nurse or other clinical-care provider with whom they work, while

Physicians' Concerns About Incompetence

81% are concerned about a nurse's or other clinical-care provider's competence.

8% have spoken with this person and shared their full concerns.

15% said this person does something dangerous at least once a month.

46% said the problem with this person has gone on for a year or more.

9% said a patient has been harmed by this person's actions during the last year.

68% are concerned about a physician's competence.

Fewer than 1% have spoken with this physician and shared their full concerns.

21% said this physician does something dangerous at least once a month.

66% said the problem with this physician has gone on for a year or more.

19% said a patient has been harmed by this physician's actions during the last year.

Source: Silence Kills: The Seven Crucial Conversations for Healthcare, American Association of Critical Care Nurses and VitalSmarts, January 2005.

68 percent of doctors and 34 percent of nurses and other clinicians have concerns about the competency of at least one physician in their midst.

■ 88 percent of nurses and clinicians report having one or more teammates who gossip or behave in ways that divide the team.

■ 77 percent of nurses and other clinicians say they work with providers who are condescending, insulting and rude, while 33 percent work with a few who are verbally abusive.

The study, titled “Silence Kills,” identified seven types of behavior patterns among staff that posed safety risks: broken rules, mistakes, lack of support, incompetence, poor teamwork, disrespect and micromanagement. While respondents indicated that a small percentage of colleagues—10 percent was the median—engaged in problem behaviors, about half of the healthcare workers surveyed said their concerns had persisted for at least a year, and many reported “injurious consequences” to patients from what they had witnessed, the study said.

One option for conducting an initial safety assessment is to survey the staff, says Dr. Ranjit Singh of the Patient Safety Research Center at the State University of New York, Buffalo. “Each office needs to examine its own threat to patient safety,” and the best resource for finding out what’s happening in a practice is the people who work there.

One in five doctors, for example, said patients had been harmed, and 23 percent of nurses said they were considering leaving their units because of the problem.

Staff said they failed to speak up primarily because they found it difficult to confront coworkers, or believed that it wouldn’t do any good, the study said. In addition, survey respondents said they didn’t have time to contend with the problem or feared retaliation.

The study included a series of recommendations aimed at facilitating discussion among hospital staff about critical concerns related to safety risks and encouraging staff to come forward.

Hospital leaders “need to make improving crucial conversations one of their top two or three priorities for at least a year,” the report said. “The reluctance to confront is so deeply rooted in the healthcare culture that it will take this level of attention to create lasting improvements.”

Surveying for Safety

One option for conducting an initial safety assessment is to survey the staff, says Dr. Ranjit Singh, associate director of the Patient Safety Research Center at the State University of New York, Buffalo. Dr. Singh has developed a survey instrument in partnership with his father, an engineer with expertise in risk and liability, designed to assess hazards in primary-care practices.

“We’re using a systems engineering approach to looking at safety in primary-care settings,” Dr. Singh says. The survey is based on the premise that every physician’s office is a “unique, complex microsystem,” with characteristics “created by the individuals who work there,” he adds. Because each setting is different, “it has a unique set of problems,” Dr. Singh says. “Each office needs to examine its own threat to patient safety,” and the best resource for finding out what’s happening in a practice is the people who work there, he adds.

The survey, called Safety Enhancement and Measurement Instrument—Patient-Centered (SEMIP), presents a visual diagram of the practice and asks the staff to describe the types of errors that could occur in each of the physical areas and the potential consequences to patients if such mistakes were made.

Every staff member is included in the process, from nurses to secretaries. While some doctors question the need to survey administrative staff, Dr. Singh says that every member of the team, including secretaries, “have good perception” of critical risks, a fact that is demonstrated by the “considerable concordance” reflected in the hazard assessments completed by a diverse array of staff. That finding is interesting, he adds, “because it shows that contrary to some people’s belief, everyone has good insight about what’s going on.” At the same time, important differences emerge among staff members; those differences help flesh out the full range of hazards within a practice, says Dr. Singh, who has been using the SEMIP survey for two years among practices in western New York State, in offices ranging in size from 12 to 30 staff members.

Individuals are given a few days to complete the survey, and their responses are submitted confidentially. Dr. Singh analyzes the results and ranks safety risks according to a safety engineering process called “hazard rating.”

To encourage candor from the staff, Dr. Singh says it's important to "emphasize that this is non-threatening," and the objective is not to attach individual blame for errors or safety risks. The survey will only produce successful results if management in the office "buys into" the process, explains its purpose and ensures that employees are comfortable with it, he adds. "As the patient safety movement matures, people in healthcare are becoming more comfortable talking about errors, but there is still a culture of blame."

Medical office staff need to understand that the primary threats to safety are related to system problems, and "individuals are victims of that system as opposed to the cause of errors," Dr. Singh says.

Once a practice's survey data has been analyzed and its hazards rated, Dr. Singh presents the results and, depending on the needs and preferences of the office, helps guide staff through the next steps of identifying the top two to three priority risks and forming teams to develop solutions.

"We encourage them to do this by sitting together as one group, looking at the results, and deciding these are the things to fix," Dr. Singh says. Staff then break into teams, each of which works for a few weeks on developing specific solutions. Next, teams bring their solutions back to the larger group for discussion and decision about which solutions to implement.

It's important that safety improvements originate with staff because "someone from the outside doesn't understand the nuances of how things work and is less likely to be effective," Dr. Singh says. "It also creates much more buy-in for solutions" when employees are engaged in the process of both identifying problems and priorities, and devising fixes to eliminate those risks, he adds. "You can't take solutions off the shelf. It doesn't work like that because each office is unique and has different challenges to deal with."

After conducting a staff survey, one practice discovered that communication between physicians and patients was a primary risk; doctors used jargon that patients didn't understand, leading to noncompliance. To address the problem, the practice examined its patient education procedures, incorporated brochures and worked to improve verbal communication with patients.

In the area of communications, for example, individual practices have identified a variety of problems and solutions. After conducting the survey, one office found that doctors were giving nurses verbal orders for flu shots, diagnostic tests and other medical orders without a system in place to confirm and track the order.

“The main problem was using an unreliable means of communication,” Dr. Singh says. The practice implemented a system to clearly document orders and track them to ensure that they are carried out and that the referring physician and patient are notified of the results, he adds.

Safety issues in the physical office include sharps disposal; secure storage for medications and prescription pads; the age and safety of examining tables; the adequacy of lighting in the office and peripheral areas, such as parking lots, and safety precautions for children in the waiting room, such as mounting the television up high, beyond their reach.

Another practice discovered that communication between doctors and patients was a primary risk. Doctors “used jargon that patients didn’t understand, leading to noncompliance,” Dr. Singh says. To address the problem, the practice examined its patient education procedures, incorporated brochures and worked to improve verbal communication with patients.

“Each practice needs to move along by itself to some degree because of its unique nature,” he adds. What is needed most to advance patient safety in primary-care settings “are efficient methods for practices to quickly and reliably assess their own safety state.”

Doctors can also apply a safety checklist to their practices, says Dr. William Jessee, president and chief executive officer of the Medical Group Management Association (MGMA), which has developed a tool to guide practitioners through key hazards and critical safety categories.

“Physicians need to watch what goes on in the office,” Dr. Jessee says. “What they think is happening and what is actually happening are often two different things.” To help them make that assessment, MGMA “put together a checklist of what needs to be evaluated,” he adds.

In the physical environment, for example, doctors should ask how needles and other sharp instruments are disposed of, and make sure they are not left lying around in the exam room, Dr. Jessee says. He cites a report about a Chicago AIDS clinic, where children were found playing in the stairwell of the outpatient department with needles from the clinic. “Everyone says that couldn’t happen in my practice,” he says, “but are you sure?”

Other environmental questions that doctors should raise include whether the practice is using sheaths for needles; has a process for storing medications, particularly samples, and securing prescription pads; the age and safety of examining tables; the adequacy of lighting in the office and peripheral areas, such as parking lots, and safety precautions for children in the waiting room, such as mounting the television up high, beyond their reach.

The next area to consider is the front office and procedures there that impact care, Dr. Jessee says. For example, doctors should evaluate what it takes to get an appointment. “How good are triage procedures when a patient calls seeking an appointment?” Dr. Jessee asks. “The last thing you want to do is delay a patient coming in for needed care.” Practices should have protocols and procedures in place that the receptionist uses to decide whether a patient needs to be seen immediately, he adds. During the anthrax scare, for instance, one patient who tried to get care experienced a substantial delay because “no one considered [his symptoms] to be serious,” Dr. Jessee says. Physicians should have a mechanism in place “for ensuring that front-office staff are not inappropriately screening out patients who need to be seen.”

Also on the checklist are procedures for following up on patients who fail to show up for appointments and following up on referrals and test results.

Check Condition of Equipment

Other areas to scrutinize are the examination and treatment rooms, Dr. Jessee says. Here, doctors should ensure that medication-safety practices are in place; that good medication histories are being taken so that doctors are aware of all drugs—including vitamins and nutritional supplements—a patient is tak-

ing, and that medical devices and emergency equipment are in good working order.

“If you have infusion pumps, are they regularly serviced, and are they delivering the amount of medication they are calibrated to deliver?” Dr. Jessee asks. “Has your emergency equipment been serviced?”

Dr. Jessee recounts an experience as a resident in which a child with a seizure disorder needed diazepam intravenously, which can cause “respiratory depression.” After receiving 6 mg, the child stopped breathing. Though this was a known po-

Safety Checklist for Medical Offices

Environment

- Sharps disposal
- Sheathed needles
- Medication, prescription pad security
- Examining tables
- Lighting
- Parking lots
- Waiting rooms

Front-Office Procedures

- Triage and appointment scheduling
- Follow-up on failed appointments
- Patient recalls/reminders
- Follow-up on referrals, diagnostic tests

In the Exam/Treatment Room

- Medication safety
- Infusion pumps and other devices
- Emergency equipment
- Access to evidence-based guidelines
- Patient communication

After the Visit

- Patient access to information
- Patient education
- Follow-up on patient condition
- Follow-up on referrals, tests, medications
- Access to the physician
- Interface between office and hospital

Source: Medical Group Management Association.

tential side effect, and patients who experience this must be ventilated, the child-sized mask did not fit the bag that was available.

“How many physicians have equipment in their office that they don’t use often and that may or may not be current or in good operating order?” Dr. Jessee asks. “It may be better not to have that equipment at all.”

Other items on MGMA’s checklist for these areas include physicians’ access to evidence-based guidelines to help make treatment decisions, and educational materials that reinforce information conveyed by the physician about a patient’s illness and treatment.

“A number of studies have shown that patients do not retain much of what is said to them when they are in a physician’s office,” Dr. Jessee says. “After they leave, they may have questions, many of which were answered by the physician, but patients do not retain [the information] because it is a high-stress situation.”

A growing body of research suggests that as physicians assess their practices for areas in which they are vulnerable to errors, they must carefully scrutinize and address communication gaps, which are increasingly being identified as the underlying cause for a large portion of medical errors.

As they examine patients and make treatment decisions, doctors should also have patient information, such as allergies and lab results, at their fingertips. “Are those highlighted on the chart or do you have to dig through it?” Dr. Jessee asks.

The checklist covers procedures that should be in place after a patient visit, including a follow-up call to determine how the patient is doing, whether he or she has filled prescriptions, or has any questions. Also, it should be easy for patients who need a return visit to get an appointment, Dr. Jessee says.

Stopping the Cascade

A growing body of research suggests that as physicians assess their practices for areas in which they are vulnerable to errors, they must carefully scrutinize and address communication gaps, which are increasingly being identified as the underlying cause for a large portion of medical errors.

A study published in the July/August 2004 issue of the An-

nals of Family Medicine, for example, found that communication is often the trigger for a cascade of events that lead to an error.

The study analyzed 75 error reports submitted anonymously by 18 U.S. family physicians participating in a six-country study, and found that 58 of the incidents described a chain of errors in four domains of patient care: treatment errors, which included the administration of treatments, medications and care plans; diagnosis, which involved errors in screening, diagnostic examination and testing, and the interpretation of findings; informational communication errors in processing messages, instructions and medical-record data, and personal communication errors among providers and patients. A fifth category represented all other types of errors.

Doctors often have more than one opportunity to prevent errors from harming patients. "You have to look at where in the cascade it is most effective to prevent harm," says Dr. Robert Phillips of the Robert Graham Center. "Most errors started with communication. If you could stop the communication error you may stop a lot of cascades."

In all, the 75 error reports, most of which involved two or more errors, described 184 "component errors." In 52 reports, or 69 percent of all incidents, the site of care was the physician's office.

When researchers analyzed the reports, they found that more than three-fourths of them (77 percent), or 58 of the incidents, arose from what they called a "cascade," in which a single error, oversight or accident was compounded by others in a chain of events. The authors defined the overall story told by the reports as a single incident. The term error was used to describe the individual mistakes within each incident. A cascade was defined as a sequence of events in which one error led causally to another.

Two broad categories of errors within a cascade were termed "distal" and "proximal." The ultimate or final error, such as failure to deliver treatment, was dubbed a distal error, while the initial error was defined as proximal.

Setting aside the 17 incidents that did not involve multiple errors, when researchers analyzed the 58 reports involving cascades, they found that while mistakes in treatment and diagnosis accounted for 83 percent of distal errors, communication was the

cause of 80 percent of all proximal errors. Furthermore, more than two-thirds (67 percent) of distal treatment errors were triggered at the front end by communication mistakes. In all, errors in communication triggered 47 (63 percent) of the 75 incidents reported by doctors. Following are some examples:

Miscommunication among colleagues (20 errors)

- Nursing failure to notify doctors about abnormal laboratory results.
- Delay of radiology facility in reporting results to doctors.
- Prescription incorrectly written with no signature.
- Physician verbal order misunderstood by pharmacist.

Miscommunication between physician and patient (5 errors)

- Incorrect medication called in for patient.
- Delay in patient's getting test results.
- Patients given inaccurate test results.
- Laboratory results given to wrong patient.

Misinformation in medical records (12 errors)

- Laboratory results matched to wrong patient with the same name as another.
- Incorrect medication in medical history.
- Wrong values on laboratory report.

Flawed message handling (10 errors)

- Lack of system for triaging important messages.
- Delay in responding to patient phone calls.
- Medication refill requests not given to physician.
- Abnormal laboratory result filed without physician action.

Inaccessibility to medical record (7 errors)

- Chart not available when needed.
- Chart lost.

Lack of reminder system (3 errors)

- Failure to respond to missed appointment.
- Failure to respond to laboratory evidence of diabetes.

More Steps, More Errors

The complexity of a task heightens the odds of committing an error.

<i>Number of steps in a task</i>	<i>Chance of error</i>
1	5%
5	33%
25	72%
50	92%

Source: American College of Physicians, Patient Safety: The Other Side of the Quality Equation, take-home points.

Errors in personal communication (7 errors)

- Incorrect follow-up instructions to patient.
- Patient not made aware of the need to call for a prescription after samples run out.
- X-ray facility failed to follow physician instructions to return patient and films.

“Often, multiple errors in communication propagated or converged with each other in precipitating the distal diagnostic or treatment error,” the study said.

The research showed that while it’s important to focus on the error that is closest to the patient outcome, physicians also need to look further behind that single mistake, says Dr. Robert Phillips, one of four co-authors of the study, and director of the Robert Graham Center for Policy Studies in Family Practice in Primary Care, an independent research arm of the American Academy of Family Physicians.

While researchers are just beginning to understand medical errors in the context of cascades, findings of the study suggest that doctors often have more than one opportunity to prevent errors from harming patients. “You have to look at where in the cascade it is most effective to prevent harm,” Dr. Phillips says. “Most errors started with communication. If you could stop the communication error you may stop a lot of cascades.”

One of the cascades, for example, started with the wrong patient’s laboratory report being attached to the form letter to in-

form the patient of the results. That communication error was compounded by the failure of the doctor to verify that the results belonged to the right patient before the letter was prepared and mailed, which in turn led to a misdiagnosis of the patient's lipids status. Ultimately, misinformation was relayed to the patient (another communication flaw), and there was a delay in treating the person for hyperlipidemia.

Furthermore, a better understanding and identification of the cascade and its early triggers can suggest solutions to medical errors, the authors found. "For example, more than 90 percent of the errors in communication appeared to be remediable by computers or other information systems," the authors said. "Cascade analysis helps to direct energies and resources toward root causes, but it goes beyond traditional root cause analysis to identify intermediary errors in the causal chain."

Addressing communication errors is both critical and complex, Dr. Phillips says, in part because they involve so many entities and individuals. The simple process of ordering a blood test, for example, requires sending the order with the patient into the appropriate lab

where the patient's insurance is accepted, says Dr. Phillips. Then the test must be done, the results reported to the office and subsequently conveyed to the doctor and to the patient. In any single process, there may be "20 steps where anything can go wrong," he adds. "The more steps, the more opportunities there are for things to go wrong."

The American College of Physicians' patient safety curriculum focuses on systems and system design—rather than on the isolated performance of individuals—to identify and address medical error risks. To be effective and produce good results, the interdependent parts of the system must work well together, ACP says.

Identifying System Errors

The American College of Physicians' seven-module patient safety curriculum focuses on systems and system design—rather than on the isolated performance of individuals—to identify and address medical-error risks.

To illustrate the interdependence of individuals and the components of a process in safety and patient outcomes, ACP gives

the example of a practice filled with “really smart doctors” who scored highly on their board tests and won academic accolades, but “don’t work well with each other or with their staff, and they don’t understand the other parts at all, such as how scheduling is performed, how tests are ordered.” The ACP’s module on building safety into medical practice design goes on to say that despite the proficiency of the physicians who work there, this practice “would likely be an inefficient, unpleasant place to work. And, because the interactions would not be very effective, it is

There can be disconnects between what physicians know and recognize as optimal care and the treatment their patients receive, says the American College of Physicians. These gaps in appropriate treatment are more likely to occur when doctors are unable to identify all patients with a particular condition in their own practice.

likely that communication errors would mean that much is missed during the course of caring—patients would likely suffer.”

The module describes another hypothetical practice, in which a group of average clinicians are dedicated, hard-working and “focus on their relationships,” in terms of how they relate to one another and to the staff. “This group discusses their work regularly. They ask hard questions about

workflow, about who is doing what and why they are doing it. They continually focus on smoothing out the communication flow between everyone in the practice in order to make all communications as efficient, and accurate, as possible.” While these doctors may not possess the academic standing of those in the first practice, this office would likely be “more effective at providing care, and it may well be a more enjoyable place to work,” ACP says. To be effective and produce good results, the interdependent parts of the system must work well together, ACP says.

As physicians assess their own practice for medical-error risks, the ACP curriculum provides crucial insights that can help them understand how and why systems break down and become unreliable.

The prescription-refill process, for example, is particularly error-prone because there are several people and many steps involved, ACP says. Furthermore, in an individual practice there is likely to be variation in how refills are handled. The ACP high-

lights fundamental, critical considerations that are not only integral to the refill process, but instructional for practices that are seeking to understand and eliminate sources of medical errors:

■ **Complex processes tend to be more error prone.** Complexity rises with the number of individuals involved and the number of “hand-offs of information and responsibility between individuals,” ACP says. In the refill process, for example, the patient must call in, someone takes a message, a physician or nurse calls or faxes the pharmacy with the order and the pharmacy fills it. The hand-off of information creates a vulnerability, as a doctor’s handwriting may not be legible. A nurse or pharmacist could misread it and order the wrong drug.

■ **Problems with safety can be the direct result of poorly designed workflow.** In a practice that uses paper charts, for example, that file may not be accessible during the refill process. “Imagine the potential for error if you do not have the patient’s chart in front of you when approving a refill,” the ACP says. As a result, the prescription-refill process, “which should theoretically be very straightforward is made potentially very inefficient and complicated,” due to the way charts are managed.

■ **Variability opens opportunities for error.** Conversely, the more standardization is built into a practice’s workflow, the more likely it is to operate efficiently and effectively, ACP says. Again, using the example of the prescription-refill process, there can be variability in how patients contact their doctor for a refill, with some calling the office and leaving a message, others talking directly to the receptionist, while still others contact the pharmacy, which in turn contacts the practice. Moreover, physicians within a practice may each handle their refills differently, ACP says. This can confuse the staff and “necessitates more than one way to accomplish a common task.”

Systematizing and standardizing care practices are important cornerstones of error reduction to ensure that patients receive the most appropriate treatment, ACP says. There can be disconnects between what physicians know and recognize as optimal care and the treatment their patients receive, ACP says. Using the example of inhaled steroids for asthmatics, ACP points to data that have been available for more than a decade showing the efficacy of the treatment for appropriate patient populations. The organ-

ization has tested awareness of the protocol among primary-care doctors by describing to them a hypothetical patient who is an appropriate candidate for the treatment and giving participants multiple therapy options. In board-review courses and in large meetings with an audience-response system, about 90 percent of attendees gave the correct answer. Yet data consistently find that 40 percent of asthmatics are not using inhaled steroids when they should be, ACP says. The findings represent a gap between internists' knowledge about what the appropriate treatment is and the percentage of their patients who are receiving that treatment.

Another example is the use of daily aspirin for patients who have had myocardial infarction (MI). "There is clear evidence, available for over a decade, of the effectiveness of aspirin in reducing subsequent cardiac events and morbidity," ACP says. "Yet repeatedly, collected data suggest that about 30 percent of Medicare beneficiaries who could benefit from aspirin post-MI are not on it."

These gaps in appropriate treatment are more likely to occur when doctors are unable to identify all patients with a particular condition in their own practice, ACP says. Without that information, "it is impossible to know what percent [of patients] are receiving the right treatment," or to know with any certainty the quality of care being provided, says the patient-safety educational guide. Doctors in that situation cannot proactively ensure that their patients are getting the right treatment. Instead, they can only wait for the next scheduled appointment and hope that they remember to update the treatment plan. "If we cannot exactly identify specific populations of individuals that we care for and ask more questions about our care to those patients, errors and poor reliability are likely to occur."

Practices that do have the ability to track patient populations and call up specific data about them, in contrast, can quickly identify patients who need more intensive treatment, proactively notify them of monitoring and treatment needs and track their progress, ACP says. These tracking mechanisms, called patient registries, are "built to track specific aspects of the care of various patient populations," ACP says.

Registries are easier to maintain with an electronic medical records system, but it can also be done using paper charts with

manual tables of patient characteristics and conditions that need to be tracked, or with a spreadsheet program, ACP says. A practice that is proactively engaged in monitoring such patient populations is able to identify all patients with a particular condition accurately and rapidly and assess the care team's performance for that condition.