Reducing Medical Errors

Chapter FastFACTS

1. **Analyzing your office procedures and workflow can uncover problem areas, such as communication or record keeping, which can lead to medical errors.**

2. **Instituting simple procedures in error-prone areas in your practice where the consequences could be serious can prevent problems.**

3. **Low-tech processes, like verifying patient identity, can be easy to implement.**

4. **The ISMP recommends putting special protocols in place for medications most associated with errors, including standardizing the ordering process.**

5. **Establishing a discharge procedure with hospitalists is a good way to reduce hand-off errors.**

While it's critical for you to be doing all you can to avoid errors based on your own performance, that's not enough. The vast majority of medical errors are due to what one report calls "administrative dysfunction"— mostly failures of communication or record keeping in busy primary care offices, failures that can have a significant impact on quality of care. Even though administrative errors may not signal a lack of medical knowledge or skill, they are still your practical (and legal) responsibility. It's in the best interest of both you and your patients to analyze your office procedures and workflow, find out whether and where errors occur, and make changes to prevent them.

Finding the 'Dysfunction'

That seminal 2002 paper, "A preliminary taxonomy of medical errors in family practice," was done under the auspices of The Robert Graham Center, AAFP's policy research arm, and published in *Quality and Safety in Health Care*. The study analyzed 344 errors that had been self-reported by family physicians. The results showed that fewer than 15% of those errors were due to gaps in knowledge or skills on the part of physicians or their clinical staff, while more than 80% were traceable to "administrative dysfunction," either within an office or between the office and some outside party. The rest were adverse events that couldn't have been anticipated based on available information.

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>
> **John Hickner, MD**
> Chair, Family Medicine Department
> Cleveland Clinic

The paper included a "taxonomy" of the errors—both procedural and expertise failures—to trace where they happened. Common subcategories and their percentage of errors included the following:

- Administrative failures (e.g., misfiled information, lost messages, care not properly documented): 30.9%
- Investigation failures: 24.8%
- Treatment delivery lapses: 23%
- Miscommunication (errors that the physician makes in communicating with patients, office staff, or colleagues that result in misunderstanding): 5.8%
- Error in the execution of a clinical task: 5.8%
- Wrong treatment decision: 4.2%
- Wrong diagnosis: 3.9%

Affected patients ranged in age from 8 months to 100 years, were of both sexes, and represented all major U.S. ethnic

groups. Almost half the reported errors had adverse conse-
quences: 10 resulted in patients' being admitted to a hospital,
and one patient died. To learn more about how your practice
stacks up, see "How Does Your Practice Compare?," below.

Of course, the line between administrative and clinical failures
can be a fine one. John Hickner, MD, chair of the family medicine
department at the Cleveland Clinic, points to research published
in *JAMA* in 2005 showing that clinicians are missing key infor-
mation about patients in more than 13% of office visits. Many of
the gaps are due to misfiled reports or misplaced or incomplete
charts, which can lead to delayed or incorrect diagnoses and to
incorrect and potentially harmful treatments. "The degree of harm
isn't related to the type of error," he says. "Failure to follow up on
a simple blood count has led to the death of a patient."

The Real Problem

Although it's tempting to address any given error as an iso-
lated event, that error probably isn't a one-of-a kind problem. To
find the real problem, you need to make the effort to look at the
larger picture of organizational and operational issues. "Doctors

How Does Your Practice Compare?

Are you wondering where your practice stands on key measures of patient
safety? The federal Agency for Healthcare Research and Quality surveyed
182 medical practices in 2007, of which the vast majority offered primary
care either exclusively or in conjunction with other specialties.
The survey had them rate themselves on whether they had good systems
in place for preventing and discovering errors, and whether the staff com-
municated well—both among themselves and with patients and outside
parties.

While most of the practices scored themselves high on teamwork, more
than half of respondents said the staff felt that mistakes were held against
them, and that it was difficult to voice disagreement in the office. Almost
60% thought their offices were more disorganized than they should be,
and well over half the respondents reported problems in communicating
with outside parties (hospitals, pharmacies, other physicians) during the
month before the survey.

For more information, go to *http://www.ahrq.gov/qual/mosurvey08/
moprelim08.htm.*

tend not to keep track of the errors in their practices, so they're not aware of the types of errors they're prone to," says Dr. Hickner, who has published extensively on patient safety in primary care. "When they do discover an error, they say, 'I'm not going to do that again!' But the real answer is to develop fail-safes to make sure you don't. It's expensive and it takes a lot of effort, so primary care tends not to have these systems in place."

A key and sobering example was described in the June 2009 *Archives of Internal Medicine*. The study examined physician office medical records of more than 5,400 randomly selected patients across a spectrum of primary care practice sizes and types, and found that in one out of 14 of those cases, or about 7%, the patient hadn't been informed (or at least, the physician hadn't documented that the patient was informed) of those results. The presence or absence of an EHR system made no discernible difference in this particular error rate, although a "partial" EHR, where some information is in the computer and some is on paper, was associated—perhaps not surprisingly—with the highest failure rates.

Lead author Lawrence Casalino, MD, of Cornell-Weill Medical Center in New York commented to WebMD that most of the practices didn't have set procedures for notifying patients about test results. Moreover, most of his research team had personal anecdotal experience of missing communications from their doctors.

The practices in the study that did have routine notification procedures in place registered significantly lower error rates. Also, physicians at those practices were more satisfied with how things were run. To find out if you've got the right systems in place for your office, see "Can You Answer 'Yes' to These Practice Questions?," opposite.

Developing a Culture of Safety

Practices can start developing a culture of safety—one that has built-in safeguards and doesn't punish employees who report or admit mistakes—without having to investigate and correct errors one by one, Dr. Hickner says. Instead, they can start by focusing on areas in which errors can easily happen and where the consequences could be serious, then institute simple procedures to head them off. For example, in the case of blood tests,

Can You Answer 'Yes' to These Practice Questions?

If not, you should be taking a closer look at your systems and finding new forms or processes to help you monitor the results, advises The Doctors Company, a medical malpractice insurer.

1. Does your office have **systems in place to alert you** when test results, consultant reports, or radiology imaging interpretations are not returned to you?

   When results are not returned to you, diagnosis can be delayed. Don't just hold the chart and rely on a follow-up appointment; the patient may cancel. A task list generated by an electronic medical record, a simple wire notebook, or even a copy of the requisition or order form in a folder that is checked several times a week can provide a reliable safety net. When you review the report or results, verify that the correct test was performed and that the correct results were returned.

2. Do you **sign or initial** all consultant or radiology reports, lab test results, or correspondence of a clinical nature to indicate you've reviewed it before it's filed? Also, follow a defined process for reviewing results that come in while the provider is away from the office so that there is no delay in addressing urgent results.

3. Does your practice maintain and use an age-appropriate and gender-specific routine **screening test and exam checklist**? A common complaint is that primary care physicians delay diagnoses because they don't order the appropriate screening tests and exams. Using such a checklist can reduce your risk by ensuring that screenings are not overlooked. Make sure your checklists are routinely reviewed and updated.

4. Do you clearly **communicate your expectations** to consulting physicians? For example, specify whether the consultant is expected to order or adjust medications, to continue following the patient for a portion of his or her care, or to see the patient on just one visit.

5. Is your **telephone triage** always handled by qualified staff (physician, nurse practitioner, registered nurse, or physician assistant)? Medical assistants should not be assigned to telephone triage.

6. Do you have written protocols for handling **telephone advice**? They should include instructions on what questions to ask the caller, recommended responses for minor problems, and which calls should be referred immediately to a doctor.

Source: The Doctors Company, http://www.thedoctors.com.

he recommends that you make sure your practice has clear and consistent answers to these three questions:

1. **How do you know the patient had blood drawn?**
2. **How do you know the result came back?**
3. **How do you know the patient was notified?**

If you can't answer any one of these questions, create a way to know, e.g., through sticky notes, tickler files, registries, or any other strategy that works for you and your practice. If each ordered blood test is traced at these three crucial points, the odds of overlooking a worrisome result decline dramatically. A similar protocol can be used for any type of test or doctor-patient communication. For more on communication, see "What Your Patients Should Know," below.

A Low-tech Solution

Patient safety experts recommend that every test include some kind of communication back to the patient. That simple step makes the patient a more integral part of his or her own care team.

Coastal Medical, a 59-physician group practice with 20 locations in Rhode Island and southern Massachusetts, has banished "no news is good news" from its standard procedures. That means that every patient gets a communication regarding every

What Your Patients Should Know

If you ask a patient whether he understands what you've just told him, and he nods, does that mean he understood? Not always. The hurried nature of many office visits—combined with nervousness or another "white coat" phenomenon as well as with medical literacy issues—can lead to communication gaps between doctors and patients. A better strategy is to ask them to explain things back to you.

The National Patient Safety Foundation suggests physicians use the **"Ask Me 3"** protocol for patient communication. Check whether each patient can answer these three questions, to avoid misunderstandings and errors:

1. **What is my main problem?**

2. **What do I need to do?**

3. **Why is it important for me to do this?**

test result, even if it's normal. "If they don't hear, they're to call us to make sure we actually got the results," says Yul D. Ejnes, MD, FACP, an internist and a member of the ACP Board of Regents. "'No news is good news' would work if you knew everything was getting to you, but [sometimes] results don't make it or get misfiled. It's a very simple, low-tech safety measure. If the patients know they're going to hear something, we avoid horror stories about results lost in the mail."

Coastal's procedures also include the obvious step of ensuring that clinicians double-check to make sure they're talking to the right patient. By phone, they verify date of birth in addition to the patient's name. For office visits, the front-desk staff copies insurance cards and asks for an additional form of identification. "We have pictures of some patients, but not all," Dr. Ejnes says. "Eventually we'll use that as a way to make sure we've got the right one. Certain ethnic names are quite common—we have to make sure we have the right John Smith."

Reducing Medication Errors

Dr. Jenkins tried for three visits in a row to persuade one of his patients to take a beta blocker for her arrhythmia and high blood pressure. She insisted that she didn't take any medications and didn't want to start. But after further probing, it turned out that she was taking 126 different nutritional supplements. He made her bring them in on her next visit. "We went over all of them, and fortunately none of the ones she was taking were causing her problem, but still," he says. "She was taking 126 pills and she wouldn't take a beta-blocker?" Under different circumstances, some of those supplements might have wrought havoc with a prescribed medication or with test results. Without her doctor's careful attention, she might have continued indefi-

nitely under the impression that her adventures in nutrition had nothing to do with her medical care. (See "Ways to Eliminate the Most Common Errors," opposite.)

"We're not trained in medical school to think about medication safety, so we don't recognize where the risks are," he says. "We think about whether a drug is going to be effective, and whether the patient can afford it."

"**There was an article** in one of the best medical journals that had recommended doses of atropine listed in grams instead of milligrams. People who review journal articles don't [always] see these errors. They see what they expect to see."

Russell H. Jenkins, MD
Medical Director
Institute for Safe Medication Practices

What causes medication errors in office practice? A Danish team did a meta-analysis of 29 studies of adverse drug events in ambulatory care, published between 1945 and 2007, and published it the two years ago in *Annals of Pharmacotherapy*. The analysis found the following:

- About 20% of adverse drug events are preventable.
- Cardiovascular drugs, pain medications, and hypoglycemic agents accounted for 86.5% of the preventable events.
- The most frequent error was the use of inappropriate drugs.
- For preventable events that required a hospital admission, the most frequent cause was inadequate monitoring.

The research team concluded that quality improvement programs should target errors in prescribing and monitoring, especially for patients using those three types of drugs.

ISMP offers more specifics to help doctors home in on trouble areas. Its Website lists what ISMP calls "high-alert" medications: those that are associated with a high volume of errors and that can cause grave problems if not used correctly. Many of the most problematic ones are given intravenously or by injection; but the list includes some common oral medications as well, such as anticoagulants and oral hypoglycemics. The ISMP rec-

Ways to Eliminate the Most Common Errors

Here are ten questions you should ask to ensure safer prescribing, as suggested by The Institute for Safe Medication Practices:

1. Do you have the **right patient's record** in front of you? Most practices use name and date of birth, but you can use stickers or highlighter to flag patients with similar or identical names.

2. Is **allergy information** up to date? Ask at every visit—new reactions can appear anytime.

3. Do you pay special attention to **dosages and potential drug interactions** for patients with diabetes, kidney or liver problems, or behavioral health issues? (The functioning of the kidneys and liver can affect how quickly drugs are processed by the body, and dosages for antidepressants can have a very narrow margin for error.)

4. Do you have a **complete current medication** list, including over-the-counter medications, supplements, and vitamins, with dose, frequency, and purpose for each one? Patients may not consider some of these to be medications, but any item on the list can affect the action of prescribed drugs. And if the patient doesn't know the purpose for a certain pill, maybe he or she shouldn't be taking it.

5. Do you have an accurate current **weight** for the patient?

6. Do you have current, accurate **information on the drug**?

7. Do you use **electronic prescribing**? If not, do you write legibly?

8. Do you **write out all instructions**, avoiding abbreviations?

9. Do you keep samples of **look-alike drugs separate** from each other?

10. Do you give patients **complete oral and written instructions** for all prescriptions, including samples?

ommends putting special protocols in place for the medications on the list, including improving access to information about the drugs, limiting access to high-alert medications (if administered in the office), standardizing ordering, and employing automated or independent double-checks when necessary. Being careful to get the name of the medication right—and your patients, too—is also an increasingly difficult area (see "Getting the Name Right," p. 34).

How you write your prescription can also lead to errors. If you

Getting the Name Right

Following are some examples of look-alike, sound-alike drugs from U.S. Pharmacopeia, Center for the Advancement of Patient Safety, a not-for-profit, non-governmental organization:

Intended drug order	Sounds like/Looks like
Mellaril	Elavil
Paxil	Taxol
Prilosec	Prozac
Cerebyx	Celebrex
OxyContin	oxycodone
hydroxyzine	hydralazine
alprostadil	Alprazolam

For the Institute for Safe Medication Practice's (ISMP) "List of Confused Drug Names," which were were reported to ISMP through the ISMP Medication Errors Reporting Program as well as those that appeared on The Joint Commission's list of look-alike and sound-alike names, see *http://www.ismp.org/tools/confuseddrugnames.pdf.*

write in the stereotypical doctor's scribble, stop. A July 2006 IOM report attributes 7,000 patient deaths per year to sloppy handwriting. If you can't learn such new tricks, look into electronic prescribing (more details on that in Chapter 4).

Even if you defy the cliché and have beautifully legible handwriting, a handwritten prescription can be dangerously ambiguous in any number of ways. See " How to Avoid Dangerous Abbreviations," opposite, for more details.

With all the drug information available from textbooks, reference books, pharmaceutical sales forces, and the Internet, there would seem to be little excuse for a physician to rely on outdated or erroneous information, but Dr. Jenkins says many do; and this reliance is a major cause of adverse drug events. Even highly respected reference books can be rife with errors, Dr. Jenkins says, and ISMP has an area on its Website (*http://www.ismp.org/ Errata/default.asp*) where it keeps a tally of those it knows about (53 at this writing). "Practitioners call us to point out misplaced

How to Avoid Dangerous Abbreviations

The Institute for Safe Medication Practices publishes a list of abbreviations that tend to get misused, symbols, and dose designations, available for download at *www.ISMP.org*. The list suggests what to write instead to cut down on misinterpretation. Some abbreviations on the list have already been banished from hospitals as a result of a Joint Commission directive in 2004, but others are still in use. Here are a few abbreviations that are particularly vulnerable to sloppy handwriting:

Abbreviation	Intended Meaning	Misinterpretation	Use Instead
HS/hs	Half strength/ hour of sleep (bedtime)	Can be confused with each other	Write out "half-strength" or "bedtime"
D/C	Discharge or discontinue	Can be confused with each other	Write out "discharge" or "discontinue"
Trailing 0 after 1 mg	1.0 mg	Can be misread as 10 mg if decimal point isn't clear	Don't use a trailing zero after a decimal point
HCl	Hydrochloric acid or hydrochloride	Can be misread as potassium chloride (H read as K)	Use complete drug name

Source: The Institute for Safe Medication Practices, http://www.ismp.org.

decimal points, and there was an article in one of the best medical journals that had recommended doses of atropine listed in grams instead of milligrams," Dr. Jenkins says. "People who review journal articles don't [always] see these errors. They see what they expect to see." For more on medication safety issues, see *Doctor's Digest's* Sept./Oct. 2009 issue, "Best Practices: Patient Safety," at *http://www.doctorsdigest.net/issue/0505.php*.

Reducing Hand-off Errors

Times of transition are among the most dangerous for patients, whether they're going from hospital to primary care (or vice

versa) or from their usual physician to a specialist. In-hospital hand-off situations have gotten the lion's share of attention because the Joint Commission includes requirements for hand-off safety in its patient safety goals as of 2008. But inpatient-to-outpatient (or vice versa) and physician-to-physician transitions are just as risky and can be made safer using similar principles. When giving or receiving information about a patient, the Joint Commission requires all the following:

- Interactive communication, allowing opportunities for questions between the giver and receiver of patient information
- Up-to-date information regarding patient condition, care, treatment, medications, services, and any recent or anticipated changes
- Methods to verify received information, including repeat-back or read-back techniques
- Opportunities for the receiver to review relevant patient historical data, which may include previous care, treatment, or services
- Limited interruptions to minimize the possibility that information is not conveyed or is forgotten

Having specialists routinely send him copies of notes from office visits, indicating the tests and medications they've ordered, "is a helpful and easy way of reducing errors with prescribing, and it doesn't take any extra effort if you're dictating for the chart anyway."

Yul D. Ejnes, MD, FACP
Coastal Medical
Member, ACP Board of Regents

A 2008 study in the *Canadian Medical Association Journal* showed that when patients were seen by two physicians in succession, full patient information made it from one physician to the next only 22% of the time on average. The score was no better if the patient came from the hospital to a physician and was only slightly better, about 34%, if the patient was going from a specialist or hospital back to his regular physician. The best case (53%, still not very impressive) occurred when the two providers

had previously communicated.

"The voltage drops during a hand-off," Dr. Stubbs says. The lag in attention between the hospitalist and the primary care physician, for example, can result in no one's following up on the results of tests from the last day or two of the stay, or in the patient's taking duplicate or incompatible medications. Dr. Stubbs's practice has established a discharge procedure with its hospitalists: The hospitalist is given a sheet with the medications the patient was taking before the admission, to which he or she adds the medications prescribed in the hospital. The sheet also invites the hospitalist to indicate which meds are being stopped, which ones should be continued, which ones are new, and why the patient is taking each one. The sheet lists any tests for which results are still pending, so that the hospitalist or a member of the clinical staff can follow up. A copy of the updated sheet is given to the patient, and another copy is sent to Dr. Stubbs's office.

The hospitalist also follows up the patient at home, to double-check the medication list and make sure it agrees with what the patient is actually taking. "Sometimes they don't fill their prescriptions because they can't afford to," Dr. Stubbs says. "We work with them to figure it all out."

Dr. Ejnes of Coastal Medical has developed his referral network based on how well specialists communicate with him. They routinely send him copies of notes from office visits, indicating the tests and medications they've ordered. "It's a helpful and easy way of reducing errors with prescribing, and it doesn't take any extra effort if you're dictating for the chart anyway," he says. Like Dr. Stubbs, he also gets discharge information from specialists or hospitalists, with an inpatient medication list and any pre-discharge tests that he needs to follow up on. "Good communication helps with a lot of these potential error situations."