



Diagnosing and Treating Medical Errors in Family Practice

Much has been written about medical errors since late 1999 when the Institute of Medicine (IOM) published its watershed report, *To Err is Human: Building a Better Health System*. The well-publicized results of this study faulted America's health system for causing between 44,000 and 98,000 error-related deaths annually and called for improvements in the reporting and handling of medical errors. Though some have taken issue with the report's data on deaths attributable to errors, it exposed the fact that serious, preventable errors are occurring in our health system.

Primary care avoided the harsh glare of the IOM report, which focused almost exclusively on the inpatient setting, largely due to the fact that there are insufficient data to quantify the impact of medical mistakes in physicians' offices. Family physicians have the perfect opportunity to look at the IOM report as a call to action to examine care processes and take steps to reduce the incidence of errors in their practices. If family physicians rise to this challenge, hopefully we'll never have to read a similar report about primary care.

The purpose of this monograph is to identify key sources of errors in primary care and provide recommendations for family physicians to reduce the risk of errors—and adverse outcomes—in their practices.

SIMPLE TRUTHS ABOUT ERRORS IN MEDICINE

There is a well-established body of research about errors in medicine, and most experts agree on the following:

1. Errors will happen. Since no human is infallible, errors are bound to happen, and this includes physicians and their staffs working in the delivery of health care services.
2. Since errors can be expected, systems must be designed to prevent and absorb them.
3. Errors are not synonymous with negligence. Medicine's ethos of infallibility leads, wrongly, to a culture that sees mistakes as an individual problem and remedies them with blame and punishment instead of looking for root causes and fixing problems by improving systems.
4. Creating a culture supportive of errors reporting is the starting point in reducing future medical errors.

While errors are a part of every day practice, many errors are the direct result of overly complex processes and are preventable. As Becher and Chassin write, "If each step in a ten-step process can be performed with 99 percent reliability, that system functions error-free 90 percent of the time. A similar process with fifty steps functions error-free only 61 percent of the time."⁽¹⁾ They illustrate this point by describing a breast cancer patient who travels through the health care system to seven or more locations for diagnosis, treatment, and follow-up, and conclude:

Often, the physicians involved in this woman's care do not practice within any common organizational structure. Most often, none of them has direct access to the records kept by any of the others, to the results of previous tests or examinations, or to the recommendations or plans made by the other treating physicians. Too often, the patient serves as the communication link among her physicians. Can it be surprising, therefore, that errors are common?⁽²⁾

Given that family physicians act as their patients' portal of entry into what in many cases is a fragmented health care system, complexity lies at the heart of addressing errors in primary care.

MEDICAL ERRORS AND THEIR CAUSES

A useful definition of error has been provided by AAFP Past President Bruce Bagley, MD: "A medical error is anything that happened in my office that shouldn't have happened and that I absolutely do not want to happen again."⁽³⁾ A more technical definition, courtesy of the IOM, is "error is defined as the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim."⁽⁴⁾

It is important to differentiate a discussion of medical errors from traditional malpractice risk management discussions. While some errors may result in malpractice lawsuits, many mistakes that could result in harm do not, and these "near misses" deserve our attention.

What causes medical error? James Reason has categorized errors according to two types of causes: active failure and latent conditions.⁽⁵⁾ We tend to think first of active failure when we think of error, due to the focus on individual acts in medicine. Active errors can take the form of slips (doing a familiar action in the wrong way, like pouring salt instead of cream into coffee), lapses (failures of memory such that planned actions do not happen), and mistakes (errors in reasoning that lead to wrong choices).⁽⁶⁾

Latent conditions are the systemic properties, or root causes, that lead to errors. These might include system interfaces, or poor maintenance or management practices. In situations with latent conditions, if an individual errs she has, in a sense, been set up to fail by her environment. As Don Berwick, President and CEO of the Institute for Healthcare Improvement, has said "every system is perfectly designed to achieve exactly the results it gets."⁽⁷⁾

Given the nature of primary care and the frenetic pace of today's managed care medical practices, the chances for error are great. While it's easy to think of the classic, serious slip-ups—prescribing a drug to a patient with known allergies, for example—think, too, of how little problems can accumulate to become big ones. The AAFP's Robert Graham Policy Center has developed a patient safety model termed "toxic cascades" that describes how small errors which go by unnoticed (trickles) eventually add up to become torrents.⁽⁸⁾ Consider, for example, this story of patient care gone wrong:

It began when a woman whose husband and daughter were stricken with a community outbreak of E.coli tried, unsuccessfully at first, to reach the office by phone. She finally got through, only to be told that the next available appointment was five days away. Then, the receptionist who sent the patients to the lab for stool-specimen testing gave wrong directions—twice. And the physician never received or followed up on the results and never contacted the local health department for the protocol needed to treat patients with E.coli. Rude behavior from the staff topped it off.⁽⁹⁾

While in isolation it would have been easy to set aside a long wait for an appointment or bad directions, consider the effect that these missteps, in their totality, could have had on these patients' health. This illustrates perfectly how common office problems can snowball to truly threaten patient care and should be a wakeup call for family physicians who want only the best for their patients.

EXAMINING ERRORS IN FAMILY PRACTICE

While rigorous research on office-based errors is in its infancy, some useful signposts about errors in primary care come from the Robert Graham Policy Center. A recent study analyzed 330 errors made by 50 family physicians over the course of one year. According to AAFP policy analyst Susan Dovey, MPH, the errors they examined fell into the following categories:⁽¹⁰⁾

- 24% — Communication problems (nursing, patients)
- 20% — Discontinuity of care (includes referrals of existing patients and itinerant/new patients)
- 19% — Lab results (logistics, timing, follow-up)
- 13% — Missing values/charting
- 8% — Clinical mistake (knowledge and skills)
- 8% — Prescribing errors (dosage, choice, allergy or interaction)
- 8% — Other

This list explodes two common myths about medical errors: One, that medical errors are synonymous with prescription errors, and that if we can fix prescribing, we will do away with medical error. Two, that errors are a result of clinical errors made by bad actors whose behavior needs to be changed if we are to solve medical errors. Together, prescribing and clinical judgment accounted for just 16% of the errors in this study.

The outcomes of the errors that the AAFP studied included one death and 10 hospitalizations. There were no consequences in just about half of the errors. But 20% of the errors resulted in delayed care, 10% in worsening illness, and 8% in patient upset.⁽¹¹⁾

This study reveals a fundamental truth about medical errors in family practice: They are by and large the result of latent conditions rather than active failure. Today's health care infrastructure is becoming increasingly fragile, and many

physicians' offices are a part of that system—for better or worse. While the risk of serious adverse outcomes is lower than commonly thought, delayed care, worsening illness, and patient dissatisfaction are also very real concerns for medical practices.

LEARNING FROM THE EXPERTS

One of the leading organizations studying error in health care is the National Patient Safety Foundation. Joanne Turnbull, NPSF's executive director, points out that "the ambulatory/inpatient dichotomy is a false one. We have to think about populations and their continuum of care."⁽¹²⁾ Turnbull recommends that error reduction programs focus on vulnerable process areas, starting with points of transition between care settings—a recommendation that is particularly salient in primary care given the way patients and patient information shuttle back and forth from one place to another—the lab, hospital, sub-specialists, and so on.

How is the work of error reduction undertaken? James Reason has provided an excellent overview of safety practices in his discussion of "high reliability" organizations.⁽¹³⁾ High reliability organizations include those whose margin for error is very small, and for which errors are catastrophic, such as airlines or nuclear power plants. Dr. Reason has identified three basic steps to dealing with error: Identify, prevent, and absorb.

1. To successfully **identify** errors, a culture of safety and errors reporting must be established. This includes making a clear distinction between blameless and blameworthy errors. Another key aspect is making sure that everyone in the organization is empowered to point out errors they feel have jeopardized patient safety. In the traditional hierarchy of medical practices, this can be difficult to achieve.
2. Errors must be **prevented** to the fullest extent possible.

Error prevention measures include:

Reduced reliance on memory.
Improved information access.
Error-proofing systems.
Standardization.
Training on error identification and prevention.

Examples in medical practice:

Checklists, flow sheets, tickler systems.
Handheld computer, electronic medical records.
Fail-safe to avoid prescribing two drugs that interact fatally.
Office formularies, guidelines synthesis.
Staff inservices.

3. Systems must be designed so that they can **absorb** a certain degree of error without harm to patients. Two key buffers include time lapses (built-in delays to verify information before proceeding) and redundancy (e.g., a pharmacist reviewing your prescription and catching your error).

Two characteristics of high reliability organizations include minimization of variability and an ability to adapt quickly to changing/ emergency conditions. But perhaps the most important trait of high reliability organizations is what Dr. Reason refers to as a "constant preoccupation with the possibility of failure." An organization that is thinking in these terms...

- is expecting failure and looking for weak links, anticipating error before it occurs;
- rehearses scenarios of failures and strives to think up novel problems that may arise;
- generalizes, not isolates, errors and looks for root causes; and
- has trained its staff in the recognition of and recovery from error.

MITIGATING MEDICAL ERRORS IN YOUR PRACTICE

Due to the prevalence of errors that are related to process issues, a comprehensive approach must be taken in any error reduction effort. Individual behavior, team dynamics, office processes, and relations with external businesses must all be examined. Here are some suggestions to get you started:

1. **Pay a little more and hire great staff.** They are an essential part of the health care process. Hire for positive, outgoing attitude, good communication skills, and established teamworking skills. Always check references carefully. Have thorough orientation and training plans for new hires to ensure that they learn the ropes quickly.

2. **Invest in new technologies — today.** Take a stepwise approach to building a technologically advanced practice. Two great places to start: using a handheld computer and communicating with patients via e-mail. Prescription writing and drug references are one of the key applications for handheld computers. Physicians using e-mail with patients love the clarity and convenience. Messages have less of a tendency to get lost, are easy to compose, and save the time of getting patients on the phone. Down the road, clinical decision support programs and/or electronic medical records would be wise investments.
3. **Standardize and simplify as much as possible.** Some possibilities include:
 - Establishing an office-wide formulary.
 - Adopting prescription-writing standards such as:
 - ✓ no abbreviations of drug names or dosages.
 - ✓ no trailing zeroes (a zero before a decimal point is required).
 - ✓ fixing changes by scratching errors out and writing "mistake."
 - Simplifying office systems.
 - Spreading authority and accountability in the office to provide "checks and balances."
 - Writing office flow sheets and check lists so that care is delivered the same time, every time.
Example: using a checklist to set up procedure rooms to eliminate surprises.
 - Rewarding staff for overriding a potential mistake rather than keeping quiet and only commenting "in their area."
 - Creating a tickler system for labwork follow-up.
 - Establishing patient tracking/follow-up systems for both missed appointments and periodic health screenings.
 - Following the principles of evidence-based medicine.
4. **Listen to your patients.** Joanne Turnbull of the National Patient Safety Foundation suggests that this is a key starting point in addressing errors in the outpatient setting. This should include:
 - Collecting data on patient satisfaction.
 - Asking patients what they need.
 - Designing services to meet patients' needs.
5. **Create a culture of health care safety in your practice.** A practice that does this will...
 - Always look for weak links and anticipate errors before they occur.
 - Take leadership and ownership for safety and establish a clear chain of command.
 - Empower and incentivize staff to report errors.
 - Review and update policies and procedures, including expectations for errors reporting.
 - Avoid punishing those who commit errors, within reason.
 - Conduct office-wide inservices about error identification and quality improvement.
6. **Stay involved with CAFP.** While you work on errors in your practice, we will...
 - Keep you abreast of regulatory and legislative changes related to medical errors.
 - Advocate for balanced, fair, and progressive legislation developed to improve patient safety.
 - Represent you in state and national efforts to create anonymous, non-punitive error reporting systems.

CONCLUDING REMARKS

Reducing errors and improving how we respond to error is but a subset of the all-important issue of quality of care. The medical professions must acknowledge that there is a gap between the care that many Americans receive and what is known about the highest standards of care, as the Institute of Medicine recently pointed out in its follow-up report, *Crossing the Quality Chasm*. While much work remains to be done, family physicians have a wonderful opportunity to work in their practices right now on process improvement and error reduction. In so doing, we can be leaders in an effort to provide the best care possible to all Americans.



CALIFORNIA
ACADEMY OF
FAMILY
PHYSICIANS

(415) 345-8667 | P
(415) 345-8668 | F
www.familydocs.org
cafp@familydocs.org

RESOURCES

The Institute for Healthcare Improvement's Idealized Design of Clinical Office Practices is one of the leading models for process improvement and excellence in primary care: www.ihf.org/idealized/idcop/index.asp

AAFP's *Family Practice Management* is a wealth of information on nuts-and-bolts, process improvement issues: www.aafp.org/fpm

Downloadable forms, including referral forms, test tracking workflow, and chart preview checklists: www.physicianspractice.com

Practice Management and Marketing's Medical Practice Pre-Employment Tests: www.practicemgmt.com/test_book_details.html

Information on handheld computers, electronic medical records, technology listserves, and much more: www.aafp.org/fpnet

American Medical News has an article about using the Web to find handheld information: www.ama-assn.org/sci-pubs/amnews/pick_01/tesa0910.htm

A thorough review of clinical decision support systems can be found in *Hippocrates*: www.hippocrates.com/archive/March2000/03features/03cds.html

A review of Evidence-Based Medicine resources: www.ama-assn.org/sci-pubs/amnews/pick_00/tesa1211.htm
www.guidelines.gov
www.cochrane.de

A useful review of how to gather patient satisfaction information: www.aafp.org/fpm/toolbox/old/3.html

FDA's MedWatch program for reporting adverse drug-related events: www.fda.gov/medwatch

US Pharmacopeia is now tracking medication errors: www.usp.org

The Medical Device Safety Reports tracks problems with medical devices that may compromise patient or professional safety: www.mdsr.ecri.org/index.asp

CAFP's monograph, "Making the Most of Physician-Patient E-mail" is a top-to-bottom rundown of the issues you should consider before exchanging e-mail with patients. To receive a copy, call CAFP at 415/345-8667.

REFERENCES

- (1) Becher, C. and Chassin, M., Improving quality, minimizing error: making it happen, *Health Affairs*, May/June 2001, p. 72.
- (2) Ibid, p. 73.
- (3) Lippman, H., Preventing errors in your practice, *Hippocrates*, January, 2001.
- (4) Dovey, S., Identifying threats to patient safety in family practice, AAFP Poster, June, 2000.
- (5) Reason, J., Human error: models and management, *British Medical Journal*, March 18, 2000, p. 768 – 770.
- (6) Becher and Chassin, op. cit., p. 69.
- (7) Phillips, D. F., New look reflects changing style of patient safety enhancement, *Journal of the American Medical Association*, 281 (3): 217–219.
- (8) American Academy of Family Physicians, Toxic cascades: a comprehensive way to think about medical errors, AAFP Policy Center One-Pager #6, September, 2000.
- (9) Lippman, op. cit.
- (10), (11) Dovey, op. cit.
- (12) Medical Group Management Association, High wire, no net: pressure builds for patient safety, *MGMA Journal*, May/June 2001, p. 34-37.
- (13) Reason, op. cit.

