Improving Patient Safety

A GP Guide

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Patient safety and error prevention are health-care issues that have gained increased recognition, especially since the 1999 release of the U.S. Institute of Medicine report, "To Err is Human". The report stated that health-care errors constitute the eighth leading cause of death in the U.S., accounting for over 100,000 deaths annually.[1] In 2002, the Royal College of Physicians and Surgeons of Canada prepared its own comprehensive review of patient safety,[2] and a National Patient Safety Institute was established by the federal government.

Although we accept that errors are bound to happen, the goal of the patient safety movement is to build a system that reduces error and prevents unavoidable human error from causing harm. Table 1 lists some of the most commonly used terminology for health-care error.

How widespread is the problem?

Most data on adverse events (AE) relates to in-patient care. Approximately 3% to 10% of hos-

Cal's case

Cal, 66, has Type 2 diabetes. He has not seen his family physician in over a year. He now presents with symptoms of uncontrolled hyperglycemia.

Cal had been on glyburide, 5 mg/day, but admits that he no longer takes it. His physician restarted him on the glyburide at the same dose.

Two weeks later, Cal is admitted to hospital after suffering a seizure. His capillary blood glucose is 2.0 mmol/L and his creatinine is 250 umol/L. (It was 140 umol/L 18 months prior.) The admitting physician diagnoses the cause of the hypoglycemic seizure to be renal insufficiency leading to impaired glyburide clearance.

Three months after this episode, the family physician finds that Cal has a foot ulcer on a routine followup appointment. Upon review, the family physician notes that there were no foot assessments at any previous visits over the past two years, or during the acute hospitalization.

What should have been done for Cal?

Table 1
Terminology

Error

- Any failure of a planned action to be completed as intended
- The use of an incorrect plan to achieve a desired goal

Slip

- An error of execution, where the action is done incorrectly

Lapse

- An error of execution, where the action is not done at all

Adverse event (AE)

- An injury caused by medical management rather than an underlying disease process
- Results in disability or prolonged hospitalization

Preventable AE

- AE that is attributable to error; up to 50% of AEs are preventable

Adverse drug event (ADE)

- AE related to drug or medication use

Near miss

- An error occurring during clinical care that almost leads to patient harm, but is avoided because the error is intercepted in a timely fashion, or because of luck

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pital admissions are associated with AEs, of which 5% to 15% result in permanent disability or death.[3-6] After discharge from hospital, about 19% of patients experienced an AE related to their hospital care.[7]

An adverse drug event (ADE) is one of the most common types of AEs. For patients in hospital, about one in 100 medication errors result in an ADE, while seven in 100 lead to near misses.[8] About 64% of AEs following discharge from hospital are medication-related.[7] Gandhi et al. found that of 2,248 outpatients surveyed, 18% reported drug complications within the previous year, 48% of which required some form of medical care.[9]

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What are some obstacles that may lead to errors?

The major obstacle is being able to look beyond the error to the many contributing factors that promote error. It is helpful to view errors as mosquitoes. Swatting at each one individually is not going to reduce bites. We will only get relief when we eliminate the

Frequently Asked Questions

1. How can omission errors be prevented?

We will use the diabetic foot exam as an example. Affordances are certain features of a particular step that make it more likely to be forgotten. Affordances of diabetic foot exam include: functional isolation (there are no preceding cues to examine the feet while assessing a patient with diabetes); premature exit (it is possible to complete the majority of the assessment without having examined the feet); lack of conspicuity (feet are normally concealed and inconspicuous); and departure from standard procedure (foot assessment is rarely necessary for non-diabetic patients). Any step with more than two affordances is more likely to be omitted. A well-laced remider can prevent many omission errors. Having the clinic receptionist instruct patients to remove their shoes and socks immediately upon entering the exam room is one option.This meets the criteria for a good reminder because it is conspicuous, continuous with the rest of the exam, in the proper context, and it reveals the content of what the action requires.

2. How can I learn more about patient safety?

- Quality Health Care: *www.qualityhealthcare.org*
- Canadian Council on Health Services: Accreditation: *www.cchsa.ca*
- Institute for Healthcare Improvement: *www.ihi.org*

Take-home message

What can be done to improve patient safety?

- Weekly safety meetings with the entire clinic team can bring attention to safety issues.
- Discussing near misses is particularly fruitful, as these matters are easier to discuss openly and to analyze.
- Sometimes, it can be beneficial to involve other health-care providers, such as pharmacists, in these weekly meetings.

stagnant water where the mosquitoes are breeding. Active failures are the errors that directly result in adverse consequences, whereas latent conditions are the factors that allow unsafe acts to cause harm. Safety will improve when we focus on the latent conditions, not the active failures.

Many latent conditions for ADEs have been described. In Cal's case, these may have included lack of physician knowledge about drug-kidney interactions, lack of information about the patient's kidney function, and memory slips/lapses.

What can family physicians do to improve patient safety?

Safety will improve when a climate of safety is fostered. A weekly safety meeting of the clinic team can bring attention to safety issues in a non-threatening manner. Discussion of near misses/close calls is particularly fruitful. Nobody has been hurt after a close call, so it is easier to discuss this type of situation openly and to analyze it objectively. The meeting should ideally involve all key members of the clinic team, and invite others when appropriate. For example, inviting the local pharmacist would be important when discussing ADEs.

Improving patient safety also involves embracing the "systems approach". This approach views errors as a failure of a system rather than of an individual, and addresses the latent conditions that promote human error. Once we are focused on the system, creative solutions may be developed.

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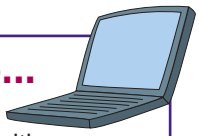
What's new in patient safety?

- The Canadian Institute for Health Research and the Canadian Institute for Health Information, both funded by Health Canada, are conducting a study on "Adverse Events in Canadian Acute Care Hospitals", the results of which are expected in 2004.

- The Canadian Coalition on Medication Incident Reporting and Prevention is a multidisciplinary organization whose mandate is to develop viable systems for reporting and preventing ADEs.
- The Institute for Safe Medical Practices—Canada and Health Canada's Adverse Drug Reaction Monitoring Program—also collects data on medication errors and AEs.
- The Canadian Medical Association has developed a resource manual for physicians called Safe Medication Practices, which outlines many strategies for improving patient safety.[10] Dx



Surf your way to...

1. Canadian Institute for Health Information: *www.cihi.ca*
2. The Institute for Safe Medical Practices in Canada: *www.ismp-canada.org*
3. Health Canada (see Adverse Drug Reaction Monitoring Program): *www.hc-sc.gc.ca*

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References
1. Kohn L, Corrigan J, Donaldson M: To Err is Human: Building A Safer Healthcare System. Washington D.C., USA: Committee on Quality Health Care in America. Institute of Medicine, National Academy Press, 2000.
2. Building a Safer System: A National Integrated Strategy for Improving Patient Safety in Canadian Healthcare. Ottawa, Ontario. National Steering Committee on Patient Safety, 2002.
3. Wilson RM, Runciman WB, Gibberd RW, et al: The quality in Australia healthcare study. Med J Aust 1995; 163(9):458-71.
4. Brennan TA, Leape LL, Laird NM, et al: Incidence of adverse events and negligence in hospitalized patients: Results of the Harvard Medical Practice Study. N Eng J Med 1991; 324(6):370-6.
5. Gawande AA, Thomas EJ, Zinner MJ, et al: The incidence and nature of surgical adverse events in Colorado and Utah in 1992. Surgery 1999; 126(1):66-75.
6. Andrews LB, Stocking C, Krizek T, et al: An alternative strategy for studying adverse events in medical care. Lancet 1997; 349(9048):309-13.
7. Forster AJ, Murff HJ, Peterson JF,et al: The incidence and severity of adverse events affecting patients after discharge from hospital. Ann Intern Med 2003; 138(3):161-7
8. Bates DW: Frequency, consequences and prevention of adverse drug events. J Qual Clin Pract 1999; 19(1):13-7.
9. Gandhi TK, Burstin HR, Cook EF, et al: Drug complications in outpatients. J Gen Intern Med 2000; 15(3):149-54.
10. Canadian Medical Association. Safe Medication Practices: A Resource for Physicians. Ottawa, Ontario, 2002.