BACKGROUNDER

Agency for Healthcare Research and Quality • 2101 East Jefferson Street • Rockville, MD 20852

Medical Errors: The Scope of the Problem

An Epidemic of Errors

The November 1999 report of the Institute of Medicine (IOM), entitled To Err Is Human: Building A Safer Health System, has focused a great deal of attention on the issue of medical errors and patient safety. The report indicated that as many as 44,000 to 98,000 people die in hospitals each year as the result of medical errors. Even using the lower estimate, this would make medical errors the eighth leading cause of death in this country—higher than motor vehicle accidents (43,458), breast cancer (42,297), or AIDS (16,516). About 7,000 people per year are estimated to die from medication errors alone—about 16 percent more deaths than the number attributable to work-related injuries.

Where Errors Occur

Errors occur not only in hospitals but in other health care settings, such as physicians' offices, nursing homes, pharmacies, urgent care centers, and care delivered in the home. Unfortunately, very little data exist on the extent of the problem outside of hospitals. The IOM report indicated, however, that many errors are likely to occur outside the hospital. For example, in a recent investigation of pharmacists, the Massachusetts State Board of Registration in Pharmacy estimated that 2.4 million prescriptions are filled improperly each year in the State.

Costs

Medical errors carry a high financial cost. The IOM report estimates that medical errors cost the Nation approximately $37.6 billion each year; about $17 billion of those costs are associated with preventable errors. About half of the expenditures for preventable medical errors are for direct health care costs.

Not a New Issue

The serious problem of medical errors is not new, but in the past, the problem has not gotten the attention it deserved. A body of research describing the problem of medical errors began to emerge in the early 1990s with landmark research conducted by Lucian Leape, M.D., and David Bates, M.D., and supported by the Agency for Health Care Policy and Research, now the Agency for Healthcare Research and Quality (AHRQ).

The final report of the President's Advisory Commission on Consumer Protection and Quality in the Health Care Industry, released in 1998, identified medical errors as one of the four major challenges facing the Nation in improving health care quality. Based on the recommendations of that report, President Clinton directed the establishment of the Quality Interagency Coordination Task Force (QuIC) to coordinate quality improvement activities in Federal health care programs. The QuIC includes: the Departments of Health and Human Services, Labor, Veterans Affairs, Commerce, and Defense; the Coast Guard; the Bureau of Prisons; and the Office of Personnel Management. AHRQ Director John M. Eisenberg, M.D., serves as the operating chair of the QuIC.

Public Fears

While there has been no unified effort to address the problem of medical errors and patient safety, awareness of the issue has been growing. Americans have a very real fear of medical errors. According to a national poll conducted by the National Patient Safety Foundation:

AHRQ is the lead agency charged with supporting research designed to improve the quality of health care, reduce its cost, address patient safety and medical errors, and broaden access to essential services. AHRQ, formerly known as the Agency for Health Care Policy and Research (AHCPR), sponsors and conducts research that provides evidence-based information on health care outcomes; quality; and cost, use, and access. The information helps health care decisionmakers— patients and clinicians, health system leaders, and policymakers—make more informed decisions and improve the quality of health care services.

- Forty-two percent of respondents had been affected by a medical error, either personally or through a friend or relative.
- Thirty-two percent of the respondents indicated that the error had a permanent negative effect on the patient's health.

Overall, the respondents to this survey thought the health care system was "moderately safe" (rated a 4.9 on a 1 to 7 scale, where 1 is not safe at all and 7 is very safe).

Another survey, conducted by the American Society of Health-System Pharmacists, found that Americans are "very concerned" about:

- Being given the wrong medicine (61 percent).
- Being given two or more medicines that interact in a negative way (58 percent).
- Complications from a medical procedure (56 percent).

Most people believe that medical errors are the result of the failures of individual providers. When asked in a survey about possible solutions to medical errors:

- Seventy-five percent of respondents thought it would be most effective to "keep health professionals with bad track records from providing care."
- Sixty-nine percent thought the problem could be solved through "better training of health professionals."

This fear of medical errors was borne out by the interest and attention that the IOM report generated. According to a survey by the Kaiser Family Foundation, 51 percent of Americans followed closely the release of the IOM report on medical errors.

It's a Systems Problem

The IOM emphasized that most of the medical errors are systems related and not attributable to individual negligence or misconduct. The key to reducing medical errors is to focus on improving the systems of delivering care and not to blame individuals. Health care professionals are simply human and, like everyone else, they make mistakes. But research has shown that system improvements can reduce the error rates and improve the quality of health care:

- A 1999 study indicated that including a pharmacist on medical rounds reduced the errors related to medication ordering by 66 percent, from 10.4 per 1,000 patient days to 3.5 per 1,000 patient days.
- The specialty of anesthesia has reduced its error rate by nearly sevenfold, from 25 to 50 per million to 5.4 per million, by using standardized guidelines and protocols, standardizing equipment, etc.
- One hospital in the Department of Veterans Affairs uses hand-held, wireless computer technology and bar-coding, which has cut overall hospital medication error rates by 70 percent. This system is soon to be implemented in all VA hospitals.

Types of Errors

The IOM defines medical error as "the failure to complete a planned action as intended or the use of a wrong plan to achieve an aim." An adverse event is defined as "an injury caused by medical management rather than by the underlying disease or condition of the patient" Some adverse events are not preventable and they reflect the risk associated with treatment, such as a life-threatening allergic reaction to a drug when the patient had no known allergies to it. However, the patient who receives an antibiotic to which he or she is known to be allergic, goes into anaphylactic shock, and dies, represents a preventable adverse event.

Most people believe that medical errors usually involve drugs, such as a patient getting the wrong prescription or dosage, or mishandled surgeries, such as amputation of the wrong limb. However, there are many other types of medical errors, including:

- Diagnostic error, such as misdiagnosis leading to an incorrect choice of therapy, failure to use an indicated diagnostic test, misinterpretation of test results, and failure to act on abnormal results.
- Equipment failure, such as defibrillators with dead batteries or intravenous pumps whose valves are easily dislodged or bumped, causing increased doses of medication over too short a period.
- Infections, such as nosocomial and post-surgical wound infections.
- Blood transfusion-related injuries, such as giving a patient the blood of the incorrect type.
- Misinterpretation of other medical orders, such as failing to give a patient a salt-free meal, as ordered by a physician.

Preventing Errors

Research clearly shows that the majority of medical errors can be prevented:

- One of the landmark studies on medical errors indicated 70 percent of adverse events found in a review of 1,133 medical records were preventable; 6 percent were potentially preventable; and 24 percent were not preventable.
- A study released last year, based on a chart review of 15,000 medical records in Colorado and Utah,

found that 54 percent of surgical errors were preventable.

Other potential system improvements include:

- Use of information technology, such as hand-held bedside computers, to eliminate reliance on handwriting for ordering medications and other treatment needs.
- Avoidance of similar-sounding and look-alike names and packages of medication.
- Standardization of treatment policies and protocols to avoid confusion and reliance on memory, which is known to be fallible and responsible for many errors.

Next Steps

President Clinton, in an Executive Order dated December 7, 1999, requested that the QuIC develop and submit recommendations to him within 60 days on improving health care quality and protecting patient safety in response to the IOM report. That report was released by the White House on February 22. For copies of the report, contact 1-800-358-9295.

For more information on medical errors go to www.ahrq.gov/errors.htm. To interview AHRQ's Director, John M. Eisenberg, M.D., contact: Karen J. Migdail at 301/594-6120 or kmigdail@ahrq.gov.

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